UNITED STATES DEPARTMENT OF TRANSPORTATION

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NATIONAL HIGHWAY TRANSPORTATION
SAFETY ADMINISTRATION

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INTELLIGENT TRANSPORTATION SYSTEMS PROGRAM
ADVISORY COMMITTEE

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MEETING

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MONDAY
NOVEMBER 18, 2013

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The Committee met in Room E37-302, Department of Transportation Headquarters, 1200 New Jersey Avenue, SE, Washington, DC, at 1:00 p.m., Bob Denaro, Chairman, presiding.

PRESENT

ROBERT DENARO, Chairman
HANS KLEIN
TERESA ADAMS
ROGER BERG
JOSEPH A. CALABRESE
JOHN CAPP
J. PETER KISSINGER
SCOTT J. McCORMICK
RAJ RAJKUMAR
BRIAN WAYNE SCHROMSKY
RYAN BROWN (for Ton Steenman)

(all members were present via web conference)

ALSO PRESENT

STEPHEN GLASSCOCK, Designated Federal Official
JOHN AUGUSTINE
VALERIE BRIGGS*
BRIAN CRONIN
WALT FEHR*
KEVIN GAY
KEN LEONARD
BOB SHEEHAN
STEVE SILL*

*present via teleconference

# TABLE OF CONTENTS

WELCOME REMARKS - STEPHEN GLASSCOCK AND KEN LEONARD.....4

OPENING REMARKS - BOB DENARO.....5

SAFETY PILOT UPDATE AND QUESTIONS - BRIAN CRONIN.....10

DEPLOYMENT INCENTIVES MEMORANDUM DISCUSSION - HANS KLEIN.....18

FINAL RECOMMENDATIONS REVIEW - BOB DENARO.....33

NEXT STEPS - BOB DENARO.....106

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

1:00 p.m.

## WELCOME REMARKS – STEPHEN GLASSCOCK AND KEN LEONARD

MR. GLASSCOCK: Good morning, or good afternoon, afternoon for the East Coast, morning for the West Coast folks. Can you hear me?

CHAIRMAN DENARO: Good afternoon, we can hear you.

MR. GLASSCOCK: Okay. We are going to go ahead and get started. Once again, welcome, everyone.

As this is being, you know, done via the telephone and webinar, it's going to be extremely important if you could please identify yourself when you start speaking for the transcript, it would be greatly appreciated.

I hope everyone got the documents I sent, and with that, I'm going to hand it to Ken.

MR. LEONARD: All right. Well, I just realized that the documents I got are sitting back on my desk, so I'll go get those in a minute.

I just wanted to welcome everybody and say that I appreciate everybody's participation on this webinar.

We'll see how this format works for us. I realize

that four hours is a little bit of a challenge to do a webinar for four hours. It's a little longer than we typically do webinars. But, maybe at the end of this we'll see how this format works for everybody.

And so, with that I think I'm going to turn it over to Bob for opening remarks.

## OPENING REMARKS – BOB DENARO

CHAIRMAN DENARO: All right, thank you, Ken. This is Bob.

Before we start, if you all don't mind, I'd like to take a moment of silence for our colleague, Dr. Kirby, who I think most of you heard had an untimely end recently. So, if we could all take a moment of silence, please.

Thank you. That was shocking news, I'm sure, for all of us, and I know I for one will miss Ron on our Committee.

With that, we'll move on. What we plan to do today, I think you've seen the agenda, we are, basically, going to have a short overview of the -- or update on the safety pilot, any questions we might have. We are going to take a look at Hans Klein's deployment incentives report, which you should have all received, both initially, and then

today again from Stephen Glasscock. And then, we are going to spend the bulk of our time going over our final recommendation memo, and you all received two copies of that.

What we are going to do is have Stephen put both copies up on the webinar, and we'll be able to see them there. And, my plan is just, basically, scroll through the document starting from the top all the way through.

On the left side we'll have the marked-up version, which I took all of your comments and put them into one document, and then we can look at the comments, who they came from.

But then on the right side, we'll have what I call the clean copy, and the clean copy was where, basically, I accepted changes that were in the document, but I also did some editing based on some of the comments.

So, for example, I think in three cases there was a lot of concern about three of the recommendations, and those are eliminated in the clean copy.

I also changed the wording in some places, where there some suggestions on that. That will show up in the clean copy and so forth.

It is not my intention for the clean copy to be our final memo, it was just a version that I put together, call it a new draft, that I felt reflected the level of comments. But, I am completely open to bringing things back into that document that I may have taken out, or any other changes we need.

And, obviously, our objective today is to get as far as we can on agreeing to a final document, which then we'll take and we fill finalize with any additional comments we get today, send that back out, and, hopefully, get approval on our final document.

So, that's the plan for today. I don't know if it will take four hours. I, for one, hope not, but we blocked that much time, in case we might need it.

This is, you know, not just a conference call, we are really substituting for a live meeting. So, instead of two days of meetings, we've got a half a day webinar. But, as I said, hopefully, we'll be able to complete that a little quicker.

Are there any questions on the process or anything else for today's meeting?

Okay. Stephen, maybe what would be helpful first,

though, I'm hearing a lot of clicking in and out, would be to take a quick roll call.

MR. GLASSCOCK: Yes. I was going to ask everyone if they could please identify themselves, please.

Or, I can.

Teresa Adams?

MEMBER ADAMS: I'm here.

MR. GLASSCOCK: All right. Steve Albert?

Scott Belcher?

Roger Berg?

Joe Calabrese?

MEMBER CALABRESE: I'm here.

MR. GLASSCOCK: John Capp?

MEMBER CAPP: Here.

MR. GLASSCOCK: Paul Hammond?

Sonny Holtzman?

Steve Kenner?

Peter Kissinger?

MEMBER KISSINGER: Here.

MR. GLASSCOCK: Scott McCormick?

MEMBER McCORMICK: Here.

MR. GLASSCOCK: Raj?

MEMBER RAJKUMAR: I'm here.

MR. GLASSCOCK: Brian?

MR. CRONIN: I'm here, Stephen.

MR. GLASSCOCK: Ton?

MR. BROWN: Ryan Brown, sitting in for Ton.

MR. GLASSCOCK: Okay. Kirk?

And, George?

Okay. First off, we'll probably do this a couple times, remind everyone to please put their phones on mute, and then if there's anyone that I did not call that's on the call, can you please identify yourself?

MEMBER KLEIN: This is Hans Klein. I'm here as well.

MR. GLASSCOCK: Okay, thank you.

MR. FEHR: Walt Fehr is on the line.

MR. SILL: Steve Sill from DOT.

MR. SHEEHAN: Bob Sheehan from DOT.

CHAIRMAN DENARO: Okay. Maybe some people will be joining us. We've got quite a few people not on the call, but that said we'll proceed.

Stephen, back over to you.

MR. GLASSCOCK: Okay. I will hand it off to Brian,

who is going to give you a quick update on the safety pilot.

## SAFETY PILOT UPDATE AND QUESTIONS – BRIAN CRONIN

MR. CRONIN: All right. Good afternoon, everyone.

As you are aware, we wrapped up the first year of the safety pilot demonstration, so I wanted to give you a few highlights from that. We are still, obviously, analyzing all the data collected.

I thought I'd start with just the pictures, reminding everybody of the geographic scope, and key elements of the pilot. It was done in Ann Arbor. There were 73 miles of instrumented roadway. We had 29 different road side units, about 3,000 vehicles.

We are also looking at the different security options, and how to do device certification processes.

Stephen, if you'd go to the next slide.

So, one of the key items in setting up this experiment was making sure that we had enough interactions between vehicles, points where data was transferred between vehicles, between vehicles and the road side, so that we could analyze the safety benefits.

And, as you will see, we came pretty darn close to our target, and I feel strongly that we had more than enough

data for NHTSA and our partners to analyze and make the decisions that they needed.

As a reminder, the first year from August of 2011 to August of 2012 was really setting up the experimental plan, installing everything, setting up initial testing, putting the first security system in place, doing some analysis, and then recruitment and training of the drivers, which would be a critical part. We launched on time, on August 21, 2012.

Then, for the last year we ramped up the device installations. One of the things you'll notice is, there's a little bit slower ramp-up period on interactions in the beginning. It took a few months to get all the devices installed and all the vehicles operating, but we had that.

We set the monitoring and data collection into different batches of time periods for data collection and segments for drivers. Then there was a change-off in the middle, and a second swig of drivers were done.

We also tested security operations in a couple different ways, both pre-loaded, and then when we sent them over the air. And, we did these data harvests and processing throughout the program.

So, just quickly, we had 2,300 vehicle awareness devices, which just broadcasted the basic safety message. We had 289 after-market safety devices, which had that same broadcast capability, plus the ability to do some safety applications. We had 64 fully-integrated light vehicles, 19 heavy vehicles, 3 transit vehicles, and we had 26 road-side pieces of equipment installed.

While we -- to obtain all the data that we needed for the analysis and to meet the goals of the safety pilot, we felt that there was an opportunity to extend for six months the model deployment site to do some additional data collection. And so, we have done that, and we are continuing to analyze data and collect information based on the vehicle-awareness devices, the after-market safety, and the retrofit-safety devices.

We are continuing to support transit operations. That was put in a little bit late into the program, but enabled us to collect some additional information. We are doing additional data collection for really all the vehicles.

The road-side equipment, we wanted to be able to install a few additional sites, both on arterial and on

highways, and so we've done that.

And then, one of the issues we wanted to have better understanding on was related to the device, how the device installation and configuration aspects impacted basic safety message transmissions.

And so, that was a very quick update. NHTSA and the Volpe team is currently analyzing all the data to make further detailed assessments, and we'll share that as that becomes available.

I have Kevin Gay in the room with me, who was instrumental in helping us work on the safety pilot, so with Mike Shagrin retiring that was who I could bring to the table today. Walt Fehr is also on the line on a lot of the detailed technical things, so I'll turn it over to the Committee if you had any particular questions or issues you wanted to find out further about the safety pilot.

MEMBER SCHROMSKY: Hey, Brian, this is Brian Schromsky here.

First and foremost, thank you for all your good work on this, it's a lot of good stuff.

Just curious, and maybe Walt can answer this as well, on the certificates, deeds and security, I saw on the

memo draft a lot of buzz words about security. I'm just curious, were those certificates ever updated, or once they got one certificate they were good for the trial? Or, did you update those periodically?

MR. FEHR: Brian, this is Walt. I can jump in.

MEMBER SCHROMSKY: Okay.

MR. FEHR: The nature of the certificates that are used to sign basis safety messages are such that they have a very specific time period that they are effective. And, that time period is five minutes long.

So, all of the devices that were operating during the model deployment had appropriate security certificates that had, you know, that five-minute life. Basic safety, message generating, vehicle-awareness devices, were provisioned at the beginning of the trial with a year-and-a-half's worth of these certificates. And then, the more active devices interacted with the back office to get periodic updates, so that they always had current certificates to sign messages.

MEMBER SCHROMSKY: Thank you.

MR. GAY: There were some vehicles, actually, there were some devices they used on fallback certificates, which

were non-expiring certificates. So, some of the heavy vehicles and some of the other devices in the safety pilot did not use the five-minute certificates. They used, basically, a long-term, never-expiring certificate.

While it's correct that the VADs and the ASDs has all used the five minutes, and the ASDs, actually, acquired them over the year as well.

MEMBER SCHROMSKY: Thank you.

CHAIRMAN DENARO: And, Brian, this is Bob Denaro.

I know it's not your responsibility, but as far as you know does NHTSA still plan on announcing their decision on rulemaking before the end of the year?

MR. LEONARD: This is Ken, Bob.

As far as we know, NHTSA has not announced any delay. You know, their stated position has always been they would do it in `13. Sometimes they have said they would do it in the fall of `13. Fall ends December 21st.

CHAIRMAN DENARO: Okay.

MR. LEONARD: But, you know, and they are not saying this, at least, you know, NHTSA was furloughed during the Government furlough.

CHAIRMAN DENARO: Right.

MR. LEONARD: And so, they have not said that that has had an impact on their schedule.

CHAIRMAN DENARO: Okay. So then, Brian, you said that, you know, you are probably extending the testing by six months, but I assume that that data will be -- continue to be collected after the announcement, if that's the case.

MR. CRONIN: Yes. We found there is always an opportunity to collect more information. And, as NHTSA always said, you know, they are making a decision about what to do. And so, you know, that will still take time to implement.

So, we felt that it was worth getting some of this additional data that would help us.

CHAIRMAN DENARO: Right. Okay. Thank you.

MEMBER KLEIN: This is Hans Klein.

Is there any estimate of when NHTSA and Volpe will be done analyzing the data, or begin to have outputs from that analysis?

MR. GAY: Well, the analysis itself is scheduled to be completed six to nine months after the end of the data collection period. That's about the turnaround time on the analysis.

Now, beyond that, it's up to NHTSA and JPO when that is, actually, released and available. But, that's about how long it takes to turn around the data analysis.

MR. CRONIN: So, one thing we have done is, take a suite of example data. We've pulled out anything related to privacy, and we pulled out information related to whether or not warnings were alerted.

But, there's a vast array of the industry that would like to better understand how PSM messages are generated and sent, and how often, and data, so we have a data set that we are planning -- I don't think it's quite up yet -- to post for a research data exchange, that would have further information.

Right now, there is just one data set for one vehicle. This would be a comprehensive data set. So, that should be up soon, but the actual analysis of the impacts and so forth would be longer.

MEMBER KLEIN: Thank you.

CHAIRMAN DENARO: Any other questions for Brian, or anyone?

All right. Thank you, Brian.

MR. CRONIN: All right, you are welcome, Bob.

## DEPLOYMENT INCENTIVES MEMORANDUM DISCUSSION – HANS KLEIN

CHAIRMAN DENARO: Why don't we move on to -- this is Bob Denaro -- why don't we move on to the review of the deployment incentives report.

Hans, do you want to lead that discussion?

MEMBER KLEIN: Okay. Yes, I'm happy to.

So, this is an additional output of the Committee, in addition to our regular ITS PAC final report. And, you'll notice there on the screen, you've seen this, it went out to our Committee about a week or so ago. It's relatively short. This was a -- our mandate was to contribute to a deployment incentives report that had been requested within the MAP- 21 legislation.

We discussed this. There was a subcommittee that discussed this in our last ITS PAC meeting in Washington, D.C., in August. Then as a Committee as a whole, we reviewed a list of recommendations and put them together. Essentially, that finalized our list, and since then I kind of “wordsmithed” it a bit, but there should be no actual content difference from what we agreed to in August.

I want to say one thing about this. This oscillated between an absolutely humongous kind of report,

because it's an important topic on incentives and deployment. And, it became -- so it had the potential to become quite large, and the strategy we've taken here is to be careful not to let that happen, because it really exceeds the capacity of this Committee to do a report.

So, I kept it to the bulleted points that we, as a Committee, had agreed to, and avoided using the word report on this. This is our ITS PAC memo on deployment incentives.

So, if you will, I'll walk you through it quickly, and I did get some feedback. So, Scott gave some feedback on this, some of which I thought was right on the money, others I'm somewhat inclined to say I think we better leave it as is, and we can talk about those.

I'm hoping that we will have some review here, and possible some modifications, without reopening our whole plenary session on discussing deployment incentives. We did that in August, I think, and made closure, essentially.

So, without further ado, I'm going to read us through the ITS PAC Memo and Deployment Incentives, dated November 14, 2013. Make sure you've got the right one.

MAP-21, moving ahead for progress in the 21st Century Act of 2012, directs the U.S. Secretary of

Transportation to develop a deployment incentives plan. Specifically, MAP-21 directs the Secretary to encourage the deployment of ITS technologies by developing a detailed and comprehensive plan that addresses the manner in which incentives may be adopted.

So, the full text from MAP-21 is on the second page of this. It's there for reference, but I took that -- I extracted just a little kernel here, you know, a detailed and comprehensive plan, obviously, that's not what have produced here.

On 8th of August, 2013, the ITS PAC made a list of ITS deployment incentives. That list is presented here. So, we had a brainstorming session, you know, between the whole Committee. We've got some probably hundreds of years of professional experience dealing with issues -- well, certainly in ITS and incentives as well, and here's the list we came up with, ITS deployment incentives.

The first one is the incentive RX allowance, grants could be given for ITS deployment, i.e., people respond to incentives, financial incentives, so grants are an obvious incentive, very powerful incentive.

From there, we exercised a little more imagination.

And, some of these I will say, I'm not sure -- different people came up with different recommendations, and so some of these I'm more familiar with than others. And, if there are ever any questions I may see if we can defer to the original proposer on some of these incentives that were identified.

The second incentive that we identified was that eligibility criteria for matching grants could be eased for ITS deployments. So, the eligibility criteria being eased would possibly provide a greater deployment for grants related to ITS.

The third one, there could be an ITS-specific program similar to TRB's IDEA program.

Fourth one, next one, a greater Federal contribution percentage could be given for ITS deployments. So, change the percentage split a little more resources given when it comes to ITS.

This next one, I confess I didn't completely understand this one, cross-modal coordination, pooled funds could be allowed for ITS deployments. I don't know if anyone present here remembers that they were the author of that one.

MEMBER KISSINGER: Hans, this is Peter Kissinger. I don't know if I was the author, but Federal Highway does have a program by which contributions from state DOTs can be pooled together to conduct Federal research. That's the gist of what that was about.

MEMBER KLEIN: Okay. Patents could be given on ITS innovation to create market incentives. Essentially, these are the general question of intellectual property rights, creating market incentives, so that private entities could pursue the possible business opportunity from the innovations derived.

U.S. DOT could promote start-up funds in the field of ITS. I think that's meant in a very general sense. I'm not sure of the exact -- I'm sure there are many guidelines about what can and cannot be done. But, there's a general attitude that there's an opportunity to help where help can be given to promote entrepreneurship and private sector entrepreneurship in the field of ITS.

App developers, entrepreneurs could be given access to ITS data. App developers should be consulted about how to facilitate such data access.

Well, I know this is being done here in Atlanta. I

know the Traffic Management Center does share data, and there are firms and individuals who have been able to use that and develop products and services. I'm sure it's relatively widespread to the extent possible, that is another promising area of incentives to the private sector.

Next one. There could be tax incentives for investment in vehicle safety technology. A member of our Committee pointed out that in Europe there are such tax incentives, and that those can provide a monetary incentive for -- to invest in ITS.

There could be more prestigious incentives, such as an ITS innovator of the year. I think we all know that ITS America does work in this area. It does offer some prestige incentives that are like this. Perhaps, there's opportunity for more.

Next one, there could be incentives of paperwork reduction. ITS deployment might require less Federal paperwork. That strikes me as a very promising incentive. I suspect it's one of the more difficult ones to implement, but possibly it is there.

The last one, I'll read it and then make some comments about this. The insurance industry benefits from

the increased safety provided by ITS. Perhaps, the incentives acting on that industry could be channeled to support ITS deployment. That was our last one, specifically, focusing on the insurance industry.

It's the one where I felt -- again, I did get comments from Steve McCormick on the memo in full, and Steve made a point that -- and, in fact, I've actually come to agree with it, he said, multiple industries are deploying, are benefitting from this, while clear that necessary insurance should be singled out. Another thing about the insurance industry is that the insurance industry is already possibly doing what we've proposed that it do, in that it is reducing insurance rates for some users who install ITS applications. We are seeing insurance companies that have a plug-in device that monitors driving behavior, and in exchange there's a financial incentive, your insurance rates go down.

So, I think, perhaps, this last point could be made a little more general, so that to encourage that all industries benefitting from the benefit -- safety benefits and so on of ITS could harness those incentives in support of ITS deployment.

Alternatively, we might just strike it, because to a certain extent this is happening by itself.

Okay. That is our bulleted list, the product of a brainstorming session on incentives. I will point you quickly to the next page, but we can come back to this bulleted list. The next page is simply, you know, the appendix, which is the language on deployment incentives from MAP-21. And, I believe that is the full text of the relevant language from the legislation within the MAP-21. And, I'm not going to read through the whole thing. I boiled this down extremely to, essentially, two phrases. Encourage the deployment of ITS technologies by developing a detailed and comprehensive plan that addresses the manner in which incentives may be adopted. The legislation has considerably more in it.

So, the bottom line is, and I guess we can go back to the bulleted list, is here is some product of this Committee's sitting down, putting on our hats, and making lists of incentives that we thought were promising for ITS deployment and ITS adoption.

So, with that I open the floor to comments, and we can either go through this or, again, recognizing that this

is a memo, I hope we won't try to turn it into a comprehensive plan. It is a memo of some ideas there, and don't be ambitious in our comments, would be my recommendation.

Thank you.

MEMBER CAPP: Hans, John Capp here.

Just to, I kind of follow how each of these could be an incentive, the only one I was struggling with is the paperwork one. I mean, we might want to be a little bit specific as to what -- I don't know, is it the tax paperwork, or just something to give it a little bit enough description so the people would understand what we mean, because I don't quite follow that one.

MEMBER KLEIN: Okay, duly noted.

Also, if anyone has a suggestion here, or recognizes this as their proposal or their bullet, they can speak up as well.

MEMBER McCORMICK: Hans, I had one of the very last one, on the insurance industry. Since there are multiple industry, and I know Scott McCormick corresponded with you on this, since there are multiple industries, rather than focusing on one, I would say that as multiple industries

benefit from the increased safety, perhaps, incentives acting upon those industries could be channeled to support ITS deployment. In other words, make it more generic, rather than -- you might want to insurance as an example, but I don't think we should single them out.

MEMBER KLEIN: And, I do agree with that.

MEMBER McCORMICK: I mean, the other one I think is somewhat redundant is the patents could be given on ITS innovations to create market incentives. I mean, patents are granted because they have value or they have utility, they have novelty. I don't know that it's enough to have any of those things that it shouldn't be granted, because it would be pointless. So, I'm not sure what we are trying to do with that, because that already does occur.

MEMBER KLEIN: That's -- if you don't mind I'll comment.

I don't know if you heard, I, actually, already -- the last one on insurance that I was wrapping up, I did mention your point. And, I think it's a good one, and I think it would be appropriate to make it more general.

On the issue of patents, clearly, intellectual property rights apps are a major source of incentives for

innovation and for deployment. So, I think a bullet at a general level like this one, patents should be given, patents should be encouraged, something like that, is worth making. I don't think we have to get into the teaching of intellectual property, specifically. We are sort of at a high level acknowledging the importance as putting that on our list.

MEMBER McCORMICK: Yes, but, I mean, in terms of an ITS deployment incentive, I mean, this is a recommendation that's going to go to the Secretary, right? So, the question would be, who is going to be giving some -- I mean, how do you give an incentive for a patent? You know, the incentive has to be in the fact that it creates a business. I'm unclear what this does.

I mean, nobody is going to spend the money and time that it takes to create a patent, if they haven't already gotten an incentive already. Given an additional percent incentive is now showing favoritism towards one area. It's kind of like saying, I'm going to give incentives for people that file patents for hydrogen power, right?

I'm not clear that that's either fair, or that it's something that's appropriate for the Government to do. The

incentive should be in terms of engaging in the business of the deployment, not whether or not you need to patent, or design, or any of those other things. What we really want is the deployment, okay?

And, what you can do is, you can create a flurry of non-practicing entities generating patents that would, actually, slow down deployment.

So, I agree that the incentives ought to be for deployment, not for whatever the constituent elements are that might make up a deployment. That just seems problematic as being patents, but, you know, if the group wants to go with it, I'm okay, I guess.

MEMBER KLEIN: I see your point. I'm somewhat leading maybe interpreting the silence as on this case maybe we can let this one go.

MEMBER RAJKUMAR: Another comment.

MEMBER KLEIN: Yes.

MEMBER RAJKUMAR: This is Raj. One comment about the tax incentives bullet. I presume that this is a memo that goes to the Secretary, and it's not clear to me that the Secretary of the Department can lobby Congress, because tax incentives have to come from Congress.

I think the Federal agencies are prohibited by law from lobbying Congress. So, I don't know how this translates to practice.

MEMBER KLEIN: There are two questions there. One is, who is the recipient of our memo, and the second one is, can we recommend a tax-based incentive and recommend that to someone who does not have the authority to propose new taxes?

I want to do the second one first. This report does get -- certainly, our formal report is read in Congress, as well as in the Executive Branch. I think we can make a recommendation that we see as appropriate, and it seems a general recommendation often goes beyond the Secretary.

The first question, who is the recipient of this memo, I'm not sure I can answer that. I might open that a little bit to the group.

The detailed comprehensive plan is to be prepared by the Secretary of Transportation. The fact that we have done this memo, I believe it goes to the Secretary of Transportation, but I'm not sure if it goes farther than that.

This is somewhat of an extension of our mandate, and this is my first time on the ITS PAC, and maybe I can throw the ball over to Bob or to anyone in --

CHAIRMAN DENARO: Well, I think we are worrying too much about this, and maybe Ken can weigh in. But, you know, Ken had asked for this, he had the report due himself, and my interpretation was that that are incentives in general, regardless of where they might be implemented. Some of these incentives could be at the local level, and not Federal level.

So -- my view is that we shouldn't worry too much about who has authority for what.

MR. LEONARD: Yes, this is Ken, let me just clarify a little bit.

Since I asked for the recommendations, unless you, specifically, put these recommendations in your report to Congress, the recommendations are coming to me. And, we are going to be generating, as part of our requirement under MAP-21, a report to Congress called, "The Deployment Incentives Report."

And so, we were viewing this as input from the Advisory Committee to support that report. As such, it

doesn't have formal standing, other than its input that we are taking and writing that report.

If you wanted any of these to, specifically, be read by Congress, they would have to be a part of your recommendations, and that wasn't what I was asking for.

Does that help clarify?

CHAIRMAN DENARO: That helps a lot, I think, Ken.

MEMBER KLEIN: Yes, it does, yes.

And, we have treated this as a separate report, so I think the implicit approach would have been taken would be that this would be coming to you, Ken, and have it bundled with our official report.

MR. LEONARD: Right, appreciate that, and, Bob Sheehan, who has responsibility for writing the deployment incentives report, has been taking copious notes throughout this entire discussion.

So, the discussion itself has been helpful, and the input is helpful.

MEMBER KLEIN: Okay. We may -- you know, this is a -- using new technology remote media really helps the harmony of our Committee here. So, there's more comments, I think, I mean, it's certainly the biggest item on our agenda

by far.

Maybe we can say we have reviewed this, I've got some notes here, John Capp, Scott McCormick, Raj, I think we addressed your stuff. There will be some slight tweaks to this, but I hereby propose that we have completed our discussion of this.

So, Bob, I pass the gavel back to you.

## FINAL RECOMMENDATIONS REVIEW – BOB DENARO

CHAIRMAN DENARO: Okay, thank you.

All right, thank you, Hans.

Now what we are going to do, as I said earlier, is walk our way through. Stephen is putting up the two documents there, and he's got a narrower screen than we need probably, but he can scroll back and forth on the left document there, if we have comments.

And, I realize the text is pretty small, so we have the ability toward the upper right side of your screen to go to full screen, so you might want to do that. It gets a little bit bigger when you do that, there might be a little higher contrast, too, for some reason, so that might help.

Everybody okay with this format?

All right. Then we are going to walk through this.

So, Stephen, if you could just keep up with us on scrolling both sides of your display there.

The first section, or two sections here, are really more the boilerplate, and where we are summarizing things, we are not making recommendations. But, we did have some comments in that area.

So, Stephen, why don't you scroll up so the red stuff on the left is kind of towards the top. A little bit down there. Okay.

So, what you see on the left side of the screen there are a summary of our activities, and we had two -- well, three other reports aside from this final recommendations memo. And, one was a letter we wrote to the FCC. The second one a letter we wrote to NHTSA on the deployment decision -- I mean, the mandate decision, and then what Congress has reviewed in terms of the deployment incentives report.

So, we summarized the activity here, and I was asked by -- and this is one area where I did forget to add the comments in, but a couple of you asked or recommended that we put a short summary of what we said in those.

Now, I had also planned to attach those reports in

the first two, but I'm open to comments about that. I'm just thinking about it right now, based on what we just said about the deployment incentives. I would rather not attach that one, because that's a document going to Ken, and Ken is going to decide how to choose to put in his report. So, I would rather not have our raw work in this memo.

I guess since the FCC letter and the NHTSA letter have been submitted officially to those organizations, maybe that's a different situation, and maybe it does make sense to attach those.

Any comments on the attachment of those?

MEMBER McCORMICK: Well, Bob, let me just ask a question.

Is there -- so, Ken just described how he was going to use that letter, is that the same manner in which this and the other party are going to use the letters that we provided them?

CHAIRMAN DENARO: No. No, it isn't. We just took it on our own initiative to weigh in on those two activities, I mean, the spectrum sharing issue and the other one. But, we just took it as kind of a weigh in, send our letters directly to them. What good that has or not, that

did not go -- I mean, the JPO looked at it, but it did not go through an approval, if you will, by the JPO or anything. It just went straight to those organizations. So, that's just something that we did on our own initiative.

MEMBER McCORMICK: Well, give the topic -- what the topics were, you know, the spectrum sharing and, I believe, those commercial vehicles, my reaction would be that I think those two should be included with the letter, but I don't think we should include the one to the JPO, for the reasons that we just discussed.

CHAIRMAN DENARO: Right.

MEMBER McCORMICK: I think there are different purposes. One is an advocacy, and in terms of where we think we should be going, and that's relevant. The other ones are just some food for thought for the JPO, if you will.

CHAIRMAN DENARO: Right.

MEMBER McCORMICK: And, I have a procedural recommendation. Given the number of people, because I saw Roger and John Capp joined also now, thank you, guys, I would just recommend we ask if there's any objection, rather than looking in the way of a positive, just because --

CHAIRMAN DENARO: Yes, right. Okay. That's a good idea.

So, based on that, I will plan on attaching those.

Stephen Glasscock, we don't have any problem attaching these, do we?

MR. GLASSCOCK: No, you can -- I mean, your recommendations, you can submit whatever you want.

CHAIRMAN DENARO: Okay. Okay.

So, any objections to that? Okay. So, we'll do that.

I will change the wording slightly. It does say with respect to the deployment incentives that it was a request by the Director, and all that's in our minutes and everything as well. But, I will just make a short statement that we are not attaching that because that will be summarized in the report directly from Ken to the JPO.

So, the summaries that I put in those two, to not be controversial I took the wording exactly out of the letters. So, up on the summary of the FCC, you can see in the red there, no change be made unless they are all data-driven review, yada, yada, yada. That's exactly what we put in the memo, so, hopefully, there won't be any objection to

that.

And, in the summary for the NHTSA letter, in that paragraph, same thing. We urge them to proceed with the rulemaking process that will lead the way for deployment.

So, hopefully, those summaries are acceptable to everyone. Any objections? Okay.

Why don't we -- and then, so, you know, I put in here, Hans, that we need a one-sentence summary of your incentives memo, but based on what we just said about not attaching it anyway, maybe we don't need that summary.

What do you think, Hans? Would you want to put anything else in that paragraph?

MEMBER KLEIN: Well, if you want to leave that sentence even in the deployment initiatives memo submitted at the same time as this recommendation memorandum, to the JPO or something. I think acknowledging some -- you've got a little mention of it there, that's probably enough. I don't think it needs more.

CHAIRMAN DENARO: Yes. Okay.

MEMBER KLEIN: Minimal little mention of it, and then move on.

CHAIRMAN DENARO: Yes. We'll do a little

“wordsmithing” in there, but that's all. Okay. All right, good.

All right. So, now we are in -- go back down just a little bit so I can see the title, Stephen, of this section. Oh, I'm sorry, actually, okay, this follows the structure that we had in the previous memo, where we just did somewhat of a summary overview of the market, what's changed. I think that's useful as a header to our recommendations.

I did get a suggestion to make a transportation communication technology and market convergence, convergence of those two. And, there are words added in here looking to that. Ton was one of the ones who recommended that, and a couple others agreed.

So, you can see the words in there. I don't think there's a lot of controversy on that. Anybody want any changes in that section? Okay. I think we are okay there.

We did -- I did add a paragraph toward the bottom of that page that we are looking at, the bottom of the page that's at the top, about automated vehicles, and the fact that, you know, communication is not, necessarily, part of that, but they are.

Now, there's a paragraph added at the end, which was responding to some comments I had about urging the JPO to really include the emergence of automated vehicles as a factor when looking at communications, that, you know, communications may well play a role with automated vehicles as well, and they could be some influence there.

However, as I re-read this, it's almost a recommendation in here. It says, "We urge the U.S. DOT to act with maximum expediency on these technologies, so not to miss the critical technology insertion opportunities shown in the time line."

So, the fact that the automated vehicles are coming along so quickly, that if communications are going to play a role in there, make sure that we don't miss those windows of opportunity.

But, my point here, and that was a good comment. I forget who suggested that, but that was a good comment, and I put it in here. But, as I said, this sounds like a recommendation. So, the question I have for everyone, I don't have a problem leaving it where it is, but leaving it where it is is not a formal recommendation. We could promote this to an actual recommendation.

That said, we do know that the JPO is already moving into analysis and research on automated vehicles, in fact, has a new initiative in that area. So, it's not like we are saying something that they are not proceeding with already.

MEMBER McCORMICK: Well, what if it were asking them to act on it with maximum expediency?

CHAIRMAN DENARO: What about it, Scott?

MEMBER McCORMICK: We are asking them to act on with maximum expediency.

MEMBER CAPP: This is John. I was going to offer the view that we already proposed earlier that they get on with the rulemaking process, as a way to move forward.

And, in this particular case, I thought the previous paragraph that was already there kind of captured the idea that, hey, there's a connection with automation.

To be honest, I don't know that extra expediency, I mean, automation is being talked about quickly. I don't know that it's happening under our very noses with any special speed. I mean, we want them to go immediately anyway, so I don't know that it adds anything.

MEMBER McCORMICK: Well, John, I have to agree with

John, when you look at this, I mean, automated vehicles and vehicle communications are complementary, but neither are, you know, encapsulating the other.

And, to his point, we've already said that once. And lastly, when we are -- this last paragraph kind of ends, and by the time you've read the first four paragraphs you've forgotten what it is you are asking to act upon.

So, I think it's already stated. I don't see that it's necessary.

CHAIRMAN DENARO: Okay. So, I hear John and Scott responding, or recommending, that we not -- that we eliminate this additional paragraph. I'm fine with that.

Any objection to that, eliminating it? Okay, we will go ahead and eliminate that. All right.

All right, this is still some boilerplate, and by the way I'm going to ask Stephen, I'm going to ask you to review this also, and if there are any tweaks necessary on some of the references and everything, you know, feel free to do that.

But, in here, basically, we pointed out that we broke into our subcommittees, and just how we operated. So again, just some overview there.

The only comments -- well, you can see John's comment there about a concern about the resources JPO has, and the work to be done. But, John's comment did not suggest, necessarily, a change in here. And so, you know, that point is well taken, but doesn't, necessarily, imply any changes in here.

And, you can see some wordsmithing in there, improve the way we discuss this.

Any objection to that section?

John, is there anything else you need to say about your comment?

MEMBER CAPP: No. No.

CHAIRMAN DENARO: I think --

MEMBER CAPP: Bob, I think that's fine.

CHAIRMAN DENARO: Great. Great.

Okay. Let's move on.

Now we get into recommendations, and the first one is global harmonization of standards. And, I think the subcommittee did a stellar job of pulling some information together. It was one of the most -- or one of the subcommittees, or set of recommendations that had the most specificity of any that we have had, so I think there's some

good meat here.

The reason -- are you on, did you hear you were on, Teresa?

MEMBER ADAMS: Yes, I'm here. I had to un-mute.

CHAIRMAN DENARO: Okay, not a problem.

So, Teresa had some comments on understanding this paragraph in general. I'll be honest, Teresa, I couldn't figure out a way to say it better. Maybe the authors could, but do you want -- you know, maybe ask your questions now?

Of course, we don't have Scott Belcher here, or do we? Scott, have you joined? No, I guess not.

Is there anyone on the phone who was on the subcommittee? It doesn't sound that way.

Teresa, why don't you --

MR. SILL: Hey, Bob?

CHAIRMAN DENARO: Yes.

MR. SILL: Steve Sill.

CHAIRMAN DENARO: Oh, hi, Steve.

MR. SILL: Yes, hi.

I'm not sure whether it's really appropriate for me to comment, since I'm not a member of the Committee, but I did participate in the subcommittee meetings, and, you know,

I'll do the best I can from memory here, if that's -- if that helps. Your choice, would you like me to try?

CHAIRMAN DENARO: Yes. No, thanks for jumping in. It's an open meeting, so, you know, everybody's help is welcome.

Teresa, do you want to maybe say your concern here?

MEMBER ADAMS: Well, I think it's written there. When I was reading it, it just -- it seems -- so global harmonization of standards -- well, it seemed almost like motherhood/apple pie thing. So, I thought that maybe if there was some particular aspect of these standards, in particular, the vehicle-to-vehicle, or that connected vehicle thing, that we might -- we might be a little more specific of what kind of standards, or which part of the standards maybe, that it would give it a little bit more specificity, I guess.

CHAIRMAN DENARO: Okay.

MEMBER ADAMS: That's what comes into my mind. That's why I said, you know, standards for what? It's sort, of course, you know global harmonization, but if there's something in particular we think is, specifically, very important to the overall program then maybe we should decide

that.

CHAIRMAN DENARO: Let me -- let me --

MEMBER McCORMICK: I want to interject something.

CHAIRMAN DENARO: -- all right.

MEMBER McCORMICK: I have a little problem with the red part, which says, you have the most fortified accelerated through international standardization participation to mitigate the risk of immature technologies. I mean, standards are developed to take out the non-differentiating elements in an item, right?

Companies dedicate resources to those, to participate, so that they don't have to have that specialized expertise in their company, right, reduces cost, allows things to -- allows more participants and players.

Standards are a process that they are continually evolving, right? And so, to make a statement about immature technologies and sub-optimal standards, to me is kind of, that's not what standards attempt to do. You know, their attempt is to create the best that it can for the time that's it going. And, there are regional differences around the world, some of them very valid reasons for why they are different, just the spectrum shift alone between Europe and

the U.S. and Asia is one reason there.

So, I'm not sure how we are going to -- how the U.S. is going to fortify and accelerate their international standards participation, because it's not the government entity that brings this to fruition, it's industry.

CHAIRMAN DENARO: Yes, let me -- this is Bob Denaro -- let me make a comment, Scott.

As I read the comments that came in here, we are walking a fine line. And, John Capp had a good comment. On one hand, we were saying that -- well, we were implying that we should slow down, because Europe is moving too fast with regional standards, and that could drive a lack of harmonization if we don't move appropriately ourselves. So, like I said, we are kind of implying that we should slow down.

Yet, on the other hand, we are saying all throughout this memo that we should speed up. So, we had to bridge that.

And, this comment applies back to Teresa also. First of all, I think -- I don't know that specific standards are the issue here. The ITS JPO does stand for all ITS, not just connected vehicles. Connected vehicles

happen to be a huge focus, but it does stand for all of ITS, and there are --

MR. SILL: Hey, Bob?

CHAIRMAN DENARO: Yes.

MR. SILL: Steve Sill again. Sorry to be rude, let me interject here.

CHAIRMAN DENARO: Okay, go ahead.

MR. SILL: I'd go back to Teresa's comment. I think the comment is indicative of an omission of fact here in the paragraph.

CHAIRMAN DENARO: Okay.

MR. SILL: I think the authors, and I will admit not to being an author, but I did comment on it, is we presumed that everyone already knew the explicitly stated scope of the JPO's international harmonization program. And, the international standards program is limited to the standards around the vehicle platform, which is V to V, and V to I, and V to P. In other words, it is connected vehicle.

We explicitly have not engaged, for example, in infrastructure standards harmonization. So, although the standards program in the U.S. is responsible for the whole

range of ITS standards, the international program for the moment only addresses those around the vehicle platform. I think that could be interpreted to include automation as it emerges. I certainly think that, especially with the likely very complex and extensive test specifications and certification requirements for automated vehicles that there's a screaming opportunity to harmonize there. But, it isn't all standards.

And then, just also let me briefly address Scott's comment. I have to be a little bit careful here, because I'm trying to put words in the mouths of people who aren't on the phone, but I think the issue in that second bullet is, the concern is that in the EU there is a push toward deployment by date certain, potentially, with, not only immature standards, but standards that will be very difficult to maintain backward compatibility with.

And, I think the concern there is, if you deploy too soon, you end up with something -- you end up with vehicles out in the field that are equipped with to a particular standard that is not reflective of what would be suitable for a longer-term deployment.

So, I think the concern there is one regarding the

maturity of what's being pushed in some regions, and the particular reference here is to Europe.

And, obviously, if they adopt and deploy on something that's technically inferior, or just plain doesn't work very well, or you are going to have a hard time harmonizing with it, because we don't want to harmonize with something that doesn't work.

I'll stop talking now.

CHAIRMAN DENARO: Yes, okay. No, that was my -- well, thanks for clarification on the first paragraph. I did not know that, so that helps.

But, with respect to the one that Scott McCormick was talking about here, we need to figure out some words.

What I attempted to do there was say that you are not going to slow down Europe. That's not being practical maybe, nor desirable. But, what we need to do then is move quickly so that short-term standards developed are harmonized, and are analyzed appropriately.

So, I don't know. I mean -- Steve, I think you described the issue, as I understand it, that's what I've heard also, I think you described it very accurately.

MR. SILL: One way to look at this, I think, from

the U.S. perspective is, ultimately --

CHAIRMAN DENARO: I'm sorry, say that again, please. Yes, just identify yourselves for the transcript.

MR. SILL: Oh, I'm sorry, Steve Sill again.

You know, from, U.S. DOT's perspective, we seek to harmonize standards when it's in the public interest to do so.

Harmonizing with something that's technically immature, or doesn't work, or would be very difficult to maintain long-term backward compatibility with is simply not in the public interest.

That said, that doesn't automatically mean you give up. The opportunity in that case is, I think, to proceed as quickly as you can with getting to sufficient technical maturity to be able to publish a standard that is mature and suitable for deployment.

CHAIRMAN DENARO: Right.

MR. SILL: And, to the extent you can get others to cooperate in the development of that standard, or worse case, seek to analyze after it, more or less, then you do the best you can to demonstrate that to everybody else, and say, hey, this works.

But, if someone is hell bent on going forward with something that doesn't quite work, because they've got a date in mind, there's not a whole lot we can do to stop them.

CHAIRMAN DENARO: Right. Right.

MR. SILL: Nor should -- nor should we try. I mean, we need to respect the fact that in our agreements with Korea, Japan, and the EU, is that these are, indeed, sovereign entities, and we need to recognize when something is just plain not our business.

CHAIRMAN DENARO: So, I'm looking for suggestions on the wording in here. I'm glad to word smith it after, but I need some input.

And, we don't have Scott Belcher, unfortunately, maybe we need to circle back with Scott.

MEMBER McCORMICK: What is that you wanted to achieve with this recommendation at a summary level? Are we saying that there should be, you know, more funding put in, so that members of the JPO and others can attend and participate in the IDU, the ISO, and the other world standards meetings? Are we saying that there is -- what is it that we want -- what is the end effect we want to have

from this recommendation?

MR. SILL: Okay, this is Steve Sill again.

I think responding to that would be inappropriate for me, and I don't know that there's, necessarily, someone who is a Committee member who was on the subcommittee, who is on the call that can respond. But, I'm uncomfortable stepping in.

MEMBER McCORMICK: I understand.

MR. SILL: I'm familiar, but I don't think it's appropriate for me to try to speak for the actual Committee membership there, and my apologies.

MEMBER McCORMICK: Oh, that's okay. I'm asking the larger Committee, I mean, John Capp, or Bob, or Hans, what do you think -- I mean, based on what we've read, and what we've heard, you know, I think we understand what the intent is, but I don't think the intent is characterized properly in this statement.

MEMBER McCORMICK: We really think they need to have more involvement in the standards environment, so that harmonization can move forward.

The first thing you have to do is be aware and participate. Okay. That's the first thing.

MEMBER CAPP: This is John Capp.

I think the real message there was engagement, and engagement is important for the reasons cited here, but I don't think we intended to make it conditional.

MEMBER McCORMICK: Right, okay.

CHAIRMAN DENARO: So, what it says is, the U.S. must fortify and accelerate their standardization participation, period. And, minimize the risk, not eliminate, but minimize the risk to immature technologies. Is that not saying what you are talking about?

MEMBER McCORMICK: Well, I would put a period after the participation, because that's what we are saying they need to do.

Now, if you want to have reasons for why, okay, it's not really to minimize the risk that immature technologies and sub-optimal standards, it's so that you can help guide the program forward. Yes, I would think it would be a positive, rather than saying here's the bad reason if you don't do this. And then, somebody might create some bad standards.

I would say the reason for participation is to increase your familiarity, and help provide the guidance to

go forward to create robust and optimal standards. I would just turn it around as a positive statement as to why you want to participate.

CHAIRMAN DENARO: Well, I hear what you are saying, but I think there's valuable information in people who are not involved in this standards process and what's in here. And, it's what Steve just talked about also, the risk that immature technologies and sub-optimal standards could be adopted locally in Europe.

I mean, shouldn't we say that? I mean, that is the major --

MEMBER CAPP: Actually -- this is John again -- as I reread it, I'm, actually, okay with how it reads, other than the -- I'm not sure the last sentence I quite get. I might ditch that one, but up to where it says difficult in the longer term I think I'm okay with it.

MR. SILL: Steve Sill again.

Just keep in the back of your minds, the document you produce here will be public. And, I would encourage caution in any language that offers comment or evaluation of that which is going on outside the United States, so as not to needlessly upset or offend folks in Europe, or Japan, or

Korea.

MEMBER McCORMICK: Yes. I'm not saying that the statement in there is not true. I'm just saying that I'd rather give them a positive reason to do it, rather than the --

MR. SILL: Oh, no, no. I'm not -- I'm, actually, not referring at all to truth. I'm thinking about how to make sure, you know, even if it is true, to make sure it's not needlessly offensive.

MEMBER CAPP: You are referring to the part about immature and sub-optimal, it does kind of sound negative towards European.

MR. SILL: Yes, and I think -- I think that either the reference to a particular -- I think -- one approach would be, and let me be careful here again, because my role is sort of a semi-participant in the subcommittee -- one option here is to keep the references to sub-optimal and immature, and remove the reference to the specific region.

They know who we are talking about, so maybe just take the reference to Europe out of it, and it may solve that problem.

MEMBER McCORMICK: And, they would, actually, very

much like to have greater participation from North America.

MR. SILL: I think -- I think you would find a wide divergence of answers there, especially, among European SDOs and STO members, as to whether they are interested in harmonizing.

In many cases, harmonization from an SDO's perspective, the first response is harmonization is great, the second response is, harmonize on doing it my way.

(Off the record comments.)

CHAIRMAN DENARO: All right. So, I think that's a good suggestion on removing Europe.

Here's what I recommend, so we can get past this one. Scott Belcher is really important to this discussion, since he's the most vested in this area. So, what I want to do is, I'll make some tweaks to this, but then I'll follow up with Scott, and we'll send around through emails -- well, and maybe Scott McCormick and John Capp will share that with you, and let's see if we can come up with something. And then, we'll put it in the final draft that goes back out for the Committee.

MEMBER McCORMICK: Okay.

CHAIRMAN DENARO: Does that sound good? Okay. All

right. So, we'll do that, and I will follow up with John. Let me make myself a note here.

Okay. The next bullet there, there was a comment from Roger, citing you Steve saying that you may disagree with that statement there.

MEMBER McCORMICK: Okay. Well, I have to run back to the computer screen and read the statement again. My apologies.

CHAIRMAN DENARO: Okay. And, Roger was referring to there are other forums that are working on collaboration, and they are not lacking.

Now, I left it in, because while what Roger said is probably true, the argument is, could there be more.

MR. SILL: I guess, is this -- Roger is on the call, right?

CHAIRMAN DENARO: No.

MR. SILL: There he is. As I look at this it says, essentially, what I'm reading this to say is, don't let the perfect be the enemy of the good.

MEMBER BERG: Exactly.

MR. SILL: Yes, I'm not sure why I would want to agree with that.

Well, I mean, okay, on the second comment, actually, I mean, we've had -- we've made substantial progress in a lot of areas, but that said, have we achieved everything that in an ideal world we would have wanted to achieve? Absolutely not.

But, also keep in mind from our perspective is, this is -- these are, of course, consensus processes, and from the U.S. we are trying very hard to do the best we can here. I'm not sure what else to offer.

But, yes, your observation that we haven't achieved everything we would want to, I think, is a fair one.

CHAIRMAN DENARO: Are we okay with that bullet? Roger, I saw you saying that in terms of what we said earlier about insulting, that we are insulting some of the efforts that are going on, like CAMP and others.

MR. SILL: I mean, this is Steve again, I would say, I mean, from our perspective I think, I'd certainly like to see it characterized in a more positive way.

But that said, you know, the Committee gets to say what the Committee thinks is correct. And, maybe I'll shut up now.

MEMBER McCORMICK: Well, I guess where I'm at with

this is, again, back to what's the purpose of making that statement. There is nothing that, you know -- I mean, standards go forward based upon the participation and the ability, you know, of the entities involved towards the objectives they have, in a random standards organization.

So, you know, the question I'm asking myself is, what is -- and I have to agree with Roger, because I'm sitting there going, what's the purpose of -- what are we adding to this recommendation with that statement.

MR. SILL: And, I don't see that we are adding anything with it.

CHAIRMAN DENARO: All right. Well again, unfortunately, we don't have the Committee here to ask their thinking, and I can't speak for them. So, I guess I'll have to circle back on this whole thing with Scott and the others.

All right. Let's move on.

Recommendation 2 and 3, these are just --

MEMBER McCORMICK: Excuse me, by the way, we are going to globally replace the CnV with connected vehicle, right?

CHAIRMAN DENARO: If you want to, doesn't matter to

me.

MEMBER McCORMICK: Yes, I prefer not to have acronyms, unless we absolutely have to, especially, a new one that no one has seen before.

CHAIRMAN DENARO: Okay. No problem, we'll do that.

So, I'm hoping since this has been reviewed that there are no other objections to recommendations 2, 3, 4, 5, 6.

MEMBER RAJKUMAR: Bob, just a couple of minor comments.

Given the level of discussion on global harmonization, consider moving it beyond the reports and recommendations of other subcommittees. I understand that people have to respond to every recommendation being made, but you really want to start with recommendations that people tend to agree, maybe a stronger recommendation than others.

CHAIRMAN DENARO: Yes, I just made a suggestion, Raj. I don't know how everyone -- I don't have a problem changing the order of things, but the comment was valid about having to respond to everything.

So, I don't know, I prefer to kind of leave it as

it is. Anybody else think that we should change the order? If so, what would that order be?

MEMBER RAJKUMAR: I guess I think of the following. If there are three things that we really want people to react to, what would they be? And, take those subcommittee recommendations and put them at the top. So, go from the most important, to the least important, if you will.

CHAIRMAN DENARO: Yes, but I don't know which are -- how to -- talk with Scott, why don't you ask him to do that. Are you talking about just within the harmonization, to change the order?

MEMBER RAJKUMAR: No, across the Committee -- I mean, within the Committee also, because the global -- this is really a report to the U.S. DOT, talking about global first, it comes across to me the wrong way.

CHAIRMAN DENARO: I see. Okay.

MEMBER RAJKUMAR: I think that's something to think about.

The second comment is that, going back to acronyms, I see ITS JPO, and ITS-JPO, it should be consistent throughout.

CHAIRMAN DENARO: Right. I think it was the

harmonization group that put the hyphen in there, and I just adopted that, and I thought I changed it every place, but I probably missed a few.

MEMBER RAJKUMAR: There are a couple I see.

CHAIRMAN DENARO: All right. So, we'll take a look at the order, Raj, that's fine.

Let's move down, Stephen. It looks like we have a lot on No. 7 there.

Okay. So, Roger had a comment, and Ton had a suggestion in an email earlier, I did reword this to put in pretty much what Ton was saying. So, as it reads now, does this make sense, Roger and Ton?

MEMBER McCORMICK: Can you slide the one on the left over a little bit, overlap the one on the right, because I'm not getting the first word out of the whole recommendation.

There you go, thank you. Oh, now it went back, it's off screen.

MEMBER BERG: This is Roger, I'm on my mobile, I can't see what's on the screen.

CHAIRMAN DENARO: Oh, okay.

MEMBER McCORMICK: I'll read it to you. It says, "The ITS JPO should continue efforts to pursue global

harmonization with 5.9 gigahertz radio spectrum."

I need it to the left, please, not right.

"The idea is, JPO should closely ...," whoever is managing that, yes, can you click there, please, move it left.

Yes, can you click there, please, move it left?

CHAIRMAN DENARO: Read the version on the right, Scott, it's the same.

MEMBER McCORMICK: Oh, sorry. "The ITO -- excuse me, "The ITS JPO should closely monitor and participate in spectrum usage testing to ensure that no changes be made unless true data-driven review testing demonstrates ...," excuse me, "... thorough data-driven review testing demonstrate that no harmful interference would occur to the existing frequency application. The U.S. DOT and the FCC should endeavor to collaborate to reach the right decision in this matter."

MEMBER BERG: Yes, I like that.

CHAIRMAN DENARO: Basically, this is a re-statement of our letter, but now since the letter went just to the FCC this is now appearing as a recommendation that goes through the different channels.

And, it's now -- I think the objection that Ton and Roger had originally is, the way it was stated initially was different than the tone -- then the content that we had in that letter to the FCC.

MEMBER BERG: Exactly.

CHAIRMAN DENARO: Right. Okay.

All right. Any other objections to this? We'll go with what is worded there. Okay. Let's move on.

Okay, and on the version on the right I forgot to take out that bold comment there, the note to myself, "make sure this isn't redundant." So, I've determined that that isn't, because I got comments back on that, that it's fine.

I did some wordsmithing in there, as recommended by various members, and then a couple of people, John recommended, and I think I agree with it, that the additional four paragraphs we had on the left side there that's highlighted in red did not add to the recommendation that followed, so that we could simplify that a bit and remove those, or at least, I guess, remove three of those, the last three.

Scott, I think this was -- was this your contribution?

MEMBER McCORMICK: I'm reading it. I don't believe so.

CHAIRMAN DENARO: Oh, okay. All right, anyway, I removed those last three paragraphs. In my reading it didn't seem to amplify much what came before, and what we had was sufficient.

So, any objection to taking those three paragraphs out? And, you can see the clean version on the right, how it reads now. I'll just give you a minute.

Okay, I think we are okay on that.

Let's move down to recommendation eight. And, let's read recommendation eight. It wasn't clear to me what it was saying.

MEMBER McCORMICK: Well, I guess the problem I have with it, I mean, I don't know that I disagree with deleting all that stuff. My issue is going to be that number eight was regarding who the audience is going to be, which are non-technical, we probably need a little bit more, at least understanding, of what we are talking about before they make that recommendation.

CHAIRMAN DENARO: Well, remember, Scott, that the JPO responded to these also. So --

MEMBER McCORMICK: Oh, that's true, I had forgot that.

CHAIRMAN DENARO: It's a combination recommendation and a response.

So, do we -- is recommendation eight clear enough, or does that -- I don't know who was involved in writing that. Did that come out of your subcommittee, Scott?

MEMBER McCORMICK: No.

CHAIRMAN DENARO: Oh, okay.

MEMBER CAPP: Yes, this is John. I don't really get number eight, in terms of what we are asking them to do, as I read it a couple times.

CHAIRMAN DENARO: Right.

MEMBER CAPP: I don't know that ITS JPO, for example, would be the place to do false detection assessment on something that NHTSA or NCAP may have required through an NCAP protocol.

CHAIRMAN DENARO: Right.

MEMBER CAPP: I guess, I don't know that I need ITS JPO to do that for me, personally.

CHAIRMAN DENARO: I agree, that's a good comment.

MEMBER McCORMICK: Where did this come from? I

mean, it wasn't the security issue, did it come out of one of the technology committees?

CHAIRMAN DENARO: It didn't come out of what I did, because I was on technology.

MEMBER McCORMICK: Roger, do you have any idea where this was from?

MEMBER BERG: No, Scott, I don't.

MEMBER McCORMICK: Or, Raj, do you recognize this? Raj, are you still with us?

MEMBER RAJKUMAR: Yes, I'm sorry, I had stepped away for a second.

Yes, I'm here.

CHAIRMAN DENARO: Raj, I was asking you, this is Bob, do you recognize recommendation eight? Do you know where that came from?

MEMBER RAJKUMAR: I do not, no.

MEMBER McCORMICK: I mean, if we are going to include it, I would just blend it into recommendation nine, because it's talking about, basically, the answer of the earlier question, that what they are saying is that it's possible that, depending on how the vehicles are positioned, okay, that it could be either anomalous or mis-behaviors, in

terms of locating presence, et cetera, et cetera.

I mean, we've got multiple things going on here. We are recommending the NCAP program. We are recommending alleged regulation, you know, or studying it. We are talking about false detection for one particular type of anomaly.

Whereas, recommendation number nine talks about wants detection of any mis-behaving deleted, whether it's an anomaly, or malicious, or, you know, non-intentional, whatever.

I think that that -- recommendation eight, basically, falls under what we are recommending in nine, if we expand it a little bit, or at least generalize it a little bit.

CHAIRMAN DENARO: Yes. You know, Brian, I think you are on here for speaking for Ton Steenman, who couldn't join us. We may have to talk to Ton about this, because maybe this an area that he was involved in.

MEMBER RAJKUMAR: Bob, I do recall a discussion about false positives and false negatives. If you have a positioning error, you might think that it's a colony ahead of yield, and it is not.

I don't know where the NCAP comes in, so maybe Ton was the one who brought it in.

CHAIRMAN DENARO: Yes. Yes.

Okay. We are having a problem here, because we don't have all the authors on the call. So, I'm going to just make a note on recommendation eight, and circle back to the emails on that, try to get that resolved. It may be combined with nine, as you were saying, Scott. We can't resolve it here if we don't know, don't have the author.

Okay. So, the next one, continuing on, so it's up there in front now, and can you scroll on the right also? Okay. Yes, okay.

So, Scott, this is the one that you put in about commercial vehicle?

MEMBER McCORMICK: Right.

CHAIRMAN DENARO: And, there were some comments. John had a comment on dropping some paragraphs, and then there was some discussion about the order of things.

So, anyway, Scott, what do you think about the changes there?

MEMBER McCORMICK: Yes, I'm perfectly fine with the changes.

CHAIRMAN DENARO: Okay. All right.

Basically, it's -- yes, been consolidated there, and then the recommendation simplified. Okay.

All right, let's move down.

So, this is a recommendation then that follows the background, and again, a lot of that information was put in paragraph form and moved up to the overview. And so, now the recommendation is a lot simpler.

Okay with that, Scott?

MEMBER McCORMICK: Yes.

CHAIRMAN DENARO: Good. Okay.

And the next one was a discussion that we had about cost of technology on positioning system, and this was in the Technology Subcommittee, and it was a discussion that Roger and I had about this, and with Raj as well. But, I didn't see any comments, so I think we'll move on from that. Let's go move on.

Okay. Now we are into security framework. And, there was a suggestion to add a little bit more introduction in the top, again, for -- well, just to introduce the topic. So, I'm fine with that.

And then, okay, if we look down then on the left

side was what's recommendation 14. That becomes -- yes, 15, a new one -- a little too far. Back up a little bit. Okay.

(Off the record comments.)

CHAIRMAN DENARO: I'm just reading it myself, reading the comment myself here.

Okay, yes, so what I did here, Scott, is Roger and John talked about public/private partnership as being a specific recommendation. We really hadn't talk about that. There are other things that could be done.

I added that up above, as one of the alternatives, so we captured that idea, but we didn't have an entire recommendation on it. And, instead the recommendation now deals with just the privacy guideline.

MEMBER McCORMICK: Well, I think the public/private partnership should be a separate recommendation, not just for the use of security, but for a variety of things that they may want to study, such as the topic number eight that we just discussed.

CHAIRMAN DENARO: Okay. Well, Roger and John, do you want to comment on that, or not?

MEMBER CAPP: This is John. I'm not sure I followed exactly what was just said there to comment on. Would you

repeat that, Scott?

MEMBER McCORMICK: Well, in terms of the public/private partnership, my comment statement was that I believe that that doesn't, necessarily, need to be inside the security framework, that it ought to be -- the recommendation that they, you know, encourage and develop more public/private partnerships would be very beneficial for a lot of aspects of this space, not just security. That's one example. But, the one they just had on positioning accuracy, the technology one, and the one before -- the one on standards, et cetera, I think there's a lot of opportunity for public/private partnerships. We ought to advocate for that at a higher level across all of the different elements of the program, rather than just within the security framework.

I think it's important within the security framework, but there's a variety of mechanisms that they could use in order to accomplish the same thing, and not be a PPP.

MEMBER CAPP: I'd be okay with that, whether we call out potential areas of public partnership up front, or whether embedded in each one, I'm okay either way.

MEMBER McCORMICK: Okay.

CHAIRMAN DENARO: Okay.

MEMBER CAPP: I'll give Bob an editorial call on that.

CHAIRMAN DENARO: Yes, I'm trying to catch up on these versions here myself. So, hold on just a second.

So, Scott, you are saying you would like to keep 14 as it is?

MEMBER McCORMICK: I'm saying we could do it either way.

CHAIRMAN DENARO: Yes.

MEMBER McCORMICK: I don't have a preference one way or the other.

I think that advocating for public/private partnership, we should be doing at a higher level, but if we want to leave it in here, that's fine, too.

CHAIRMAN DENARO: All right. Let me -- let me take another look at that. I'm struggling to reconstruct what I had changed in there, and I'll follow up with some specific comments on that and a suggestion. And then, we can kind of either, you know, agree with that or not.

Okay. Let's move down then some more, Stephen.

Hold on, we went a little far. We are still on -- go back up, I think to number 15 there. Yes.

Okay. So, this was on privacy, and we eliminated the bullets, just kind of summarized those considerations, because, you know, maybe there are more, and we have a little bit simpler statement of the recommendation there on the privacy guideline.

Any objections to the way it's worded? You can see the clean version on the right. It might be easier to read.

MEMBER McCORMICK: No, I was fine with that.

MEMBER CAPP: I am, too.

CHAIRMAN DENARO: All right. Let's move down to outreach and communications.

All right, so again, there was a request to have a little bit more of an intro into that, which I added. And then, the recommendations that follow are -- and we discussed this in our meeting, about having a communication professional.

And then, the document -- there's recommendation 17 there, which becomes 15 if we eliminate other recommendations, talks about having a document on safety benefits. And, someone pointed out, I think it was John

pointed out, that it's not, necessarily, the JPO who would do that, that's what NHTSA does. And so, we are saying in here, again, in our broader role of advising the DOT, that NHTSA should do that, that's not a JPO thing to do.

MEMBER CAPP: When -- if and when they do come out with whatever type of a document later here in December, it will address safety benefits. It may need to address safety benefits again as they get more data and step through the rulemaking, but they will talk about safety benefits. That's their mission in life.

CHAIRMAN DENARO: Right.

MEMBER McCORMICK: This is why I questioned whether we needed this here, because that's what NHTSA does.

CHAIRMAN DENARO: Well, this is in the context of the outreach communications and promo, and what I think the subcommittee was saying there is, it's going to be really critical to publicly communicate what the benefits are. I think that's all they are saying.

So, and acknowledging that NHTSA is probably the one that does that is fine. So, yes, they do that, but, you know, I mean, maybe this is a simple response then.

Our recommendations don't, necessarily, imply that,

and, in fact, if it's the future, you know, obviously, it's just recommending, making sure something does get done.

MEMBER CALABRESE: I think the key -- this is Joe -- if it's done in a very, very professional way, and a way that, you know, many times government doesn't do it the way Madison Avenue would. And, there's such good long-range potential for this, let's -- you know, it's worth spending a little money to get some great expert help to figure out how we best promote it, market and communicate this stuff.

CHAIRMAN DENARO: Who was that?

MEMBER CALABRESE: Joe Calabrese.

CHAIRMAN DENARO: Oh, okay. Thanks, Joe.

MEMBER CAPP: It sounds like, Joe, the recommendation is to communicate NHTSA's analysis of the safety benefits in a professional way.

MEMBER KISSINGER: Yes, I think that was the gist of the recommendation.

This is Peter, I'm not sure why we need that last sentence. I mean, are you talking about that Volpe study that we heard about?

CHAIRMAN DENARO: I don't know where that came from.

Do you know anything about this, Hans, that

statement there?

MEMBER KLEIN: I don't know on that one.

CHAIRMAN DENARO: Yes, okay.

MEMBER KISSINGER: But, Jim, I think the use for this recommendation is to take, you know, the technical details and rework it into a message that's applicable to the general public.

CHAIRMAN DENARO: Okay. That's a really good suggestion. Let me try some wording on that. I wrote myself a note. I'll try some wording on that, and put it in the next version. I agree with that.

Okay. Why don't we move down then, Stephen. Implementation.

So, the only change in here, the major change that I added, Hans, was the comment that I think John had here, that it's a pretty tall order to attempt to standardize language across the entire industry, but at least within the JPO to have a good glossary and standard terms would be useful.

MEMBER KLEIN: I thought that was an excellent addition.

CHAIRMAN DENARO: Okay. And then, there was a lot

of discussion about the DSRC necessary apps. Are there any objections to the way it's worded now? And again, the version on the right might be easier to read.

MEMBER McCORMICK: So, we want the DOT to develop applications.

CHAIRMAN DENARO: Hans, do you want to --

MEMBER KLEIN: The way it reads, the last alternative recommendation, number 19, which I'm not that enthusiastic about, does say ITS JPO should develop and promote application. That's not part -- I don't think -- I think to me recommendation number 19 is the way to go.

The key thing is, actually, creating this category of app called DSRC necessary apps, because it's really confusing when we get into this discussion DSRC and what does it do. Well, it does everything.

Well, but what of those things can only operate under DSRC? I think that's all to give greater precision to the program, and would highlight why we need DSRC, because these are the whole family of apps that will only work if we have the underlying DSRC media.

So, it would clarify and I think strengthen the program.

MEMBER CAPP: This is John.

My only comment to that was that, I think a lot of the work that the ITS JPO has done, also contracting out things to industry through CAMP and this and that, has identified those safety-related apps that require the latency and the various requirements that can be addressed with DSRC. That's the reason that everybody has gotten behind DSRC over the past two years, versus continuing to say, can we use LTE, can we use 3G, et cetera.

It is that list of critical safety apps that are going to need DSRC. I think it exists.

MEMBER KLEIN: I'm not -- I think -- I think the program will be strengthened by highlighting those apps that really need DSRC. So, I expect it to be a win for DSRC to really highlight what we get from it.

CHAIRMAN DENARO: But, aren't those all -- this is Bob Denaro -- aren't those all just safety apps? I mean, what else.

MEMBER KLEIN: I'm not sure. I think that is not an answerable question, because I've been asking that question a lot, and I've gotten all kinds of different answers. So, I don't think that's an answerable question.

MEMBER CAPP: Let me put it this way. If it wasn't for that set of safety critical type apps, that require a particular low latency, and have a dedicated two-way communication, everybody would have moved on from DSRC a long time ago.

MEMBER KLEIN: Right, sure.

MEMBER CAPP: It's what this whole program, or this whole effort here, is about, is the safety apps that require DSRC.

So, my only point is, I mean, there might be a couple other ones that would come and go, but it's a pretty well-established list that's driving this.

MR. FEHR: This is Walt FEHR from the ITS Joint Program Office, and I'd like to just pinch in one other idea here.

It's true that the crash avoidance types of applications are well suited to DSRC media. And, the other use of the medium isn't, necessarily, identifiable by a specific application, but a particular communication need that you have in moving vehicles.

One of the things that 5.9 gigahertz DSRC was, specifically, tailored to do well, was to communicate over

short distances when the two communicating partners are moving very rapidly relative to each other. That could be a moving vehicle in a fixed point on the side of the road, or two moving vehicles.

So, the ability to conduct internet protocol-based, peer-to-peer data exchanges between two rapidly moving items is something that DSRC is well suited for. And, no other communication medium really has been tailored to work well in those circumstances. Again, short distance, rapidly-moving elements.

Even things like LTE and the other wide area network things work in moving vehicles, because the communication, actually, takes place between the vehicle and a tower, which is widely separated from it, and the effective motion between the two is, actually, relatively small.

But, if you are trying to do a communication with a vehicle inspection point, or some other kind of a thing that's physically located on the side of the road, and you have rapidly-moving vehicles, 5.9 gigahertz DSRC is the only medium right now that's been, specifically, engineered to do that.

So, it's hard to identify applications that are, specifically, tailored for that, but it's the type of communication, and people in the auto industry are starting to view 5.9 gigahertz DSRC as an important component in a portfolio of communication medium that they need to have, in order to accomplish all of their communication tasks.

MS. BRIGGS: Hans, this is Valerie.

I guess I would also jump in that viewing, you know, what's in this recommendation was a real big push in, say, 2009, 2010, when we were sort of re-base lining the program.

And, if we haven't done this successfully, then I think we have failed somewhere. But, maybe the issue is communication of that, because I feel like --we feel like the community we work with directly understands this, and we've moved on to, actually, doing the next step, which you say is prioritized development of those applications.

But, maybe our communications is lacking in continuing to make that point.

I'm not trying to dissuade you. I see there's clearly a problem here. I'm just trying to identify what the problem is.

MEMBER KLEIN: Part of it could be, you know, part of it is the introduction of a category is not really an action item, it's a communications action, really, right?

So, this is borne out, we had these discussions about DSRC, and there was a concern at some of the Committee meetings that DSRC, its benefits were pretty far out there. And yet, its costs were being highlighted immediately, in terms of the alternative uses that could have been made a spectrum, and so on and so forth.

So, part of the thing in here was to make it more comprehensible, that there are near-term benefits of DSRC, which has been -- a number of people have made that claim, and I think it's true. But, those aren't being communicated or identified. And, there is, among a lot of folks there is -- it's not always clear that you need certain media in order to get certain functions and certain applications.

So, by being more clear in communications, it would be easier to recognize the contribution of this medium. And, it has been my understanding, we all know that there are safety apps that has, in my understanding, are more than safety apps, one claim I've heard, and the second one is that some of those other apps work incrementally, so that

you can pursue -- either achieve near-term benefits from DSRC even prior to widespread deployment.

At minimum, by making this category, you know, we would be able to tout those aspects of the program.

And, frankly, I'd like to just better understand what are the apps, the assembly apps out there. I mean, it's probably been done, or maybe you can send me a link and say, hey, this document already exists.

MS. BRIGGS: Yes. The breakdown is that we've done a lot of work, but it may just be internal to groups we were working with. So, that may be the breakdown, that we don't have enough public information out there on this subject.

CHAIRMAN DENARO: Okay. So, this section is about communications and outreach. So, it sounds like, I think Hans and everyone is agreeing that this was an area that needs outreach.

Scott asked briefly, and I would, too, do we really think the JPO should develop apps, or is something like this defining what some of these apps would be that are highly dependent on DSRC, is that sufficient.

MEMBER SCHROMSKY: Bob, it's Brian Schromsky.

First, I'll call -- I'll validate, or I agree with

Walter's comment regarding DSRC being the transmission, not being the carrier involved, right? Because I picture this, it should work if you are in a four-story or bottom basement garage, right, the vehicle should be able to communicate with each other.

I think we talked about this at our last meeting here. When I look at DSRC, that's communication protocol, right? That's not, you know, I don't build an app on that. What I build an app is on the platform, right?

So, I think we get a little hung up on DSRC. I think it's more on a, we can build on a V2V platform, rather than building on DSRC, right, because the majority of the folks, unless they really want to get technical, you know, don't really care to some extent. That makes sense, right?

So, I'm not comfortable by doing DSRC apps. Also, I forget, I don't know if was John or somebody else, I mean, the whole crux of this is more for safety, right? So, let's try to figure out something for safety, build a communication platform to incorporate that, with the possibility of additional benefits being other apps, right, once this dalmatian is created. That makes sense.

I feel, a lot of this stuff I don't -- because

there's going to be apps developed, I don't need DSRC to build smart apps for smart vehicles. And, I don't, I mean, I kind of look at the GPS, Bob, I mean, that's your bread and butter, right? It was designed for one purpose, and then when it was finally opened, it opened up Pandora's Box to a million apps, right?

So, I kind of look at this platform being the same thing. Started with the same theme, system long-term navigation for DOT, and then there is additional benefits once it's open.

CHAIRMAN DENARO: Okay, those are good comments.

This is Bob again. And, I think putting words in Hans' mouth, but I think what Hans is getting at was, again, in terms of the communications and outreach of making sure we are effectively promoting the unique benefits that you get from a DSRC part of that communication suite.

I think the only question is, whether the best way to do that, Hans, is for the JPO to, actually, develop, or have developed, apps, or whether just more wider --

MEMBER McCORMICK: Or, maybe it's -- actually, as Valerie was pointing out, maybe there's some missing communication on why after all these years we've studied it,

why didn't we conclude, let's just say a few years ago, that DSRC is the right technology to do safety V2V. Maybe it's just a matter of putting out some clarification as to why DSRC for these. That's what I was getting at, yes.

CHAIRMAN DENARO: Exactly.

Hans, what do you think?

MEMBER KISSINGER: This is Peter. I can buy that. I mean, my concern that's written here is that, it almost sounded like we were encouraging, you know, the development of apps that went beyond safety critical. And, I thought, if anything, we were trying to preserve that frequency for the safety critical apps.

CHAIRMAN DENARO: Well, I think, Peter, again, speaking for Hans, and he can jump in, but it's -- we know that safety critical, at least from a latency standpoint, is dependent on DSRC. And, the question is, in addition, it is safety critical, but in addition there are other important apps that are going to be really dependent on that.

And, Walt gave us a good idea of why the communications scheme itself, if you've got important data to get from a roadside beacon, DSRC might still be the best way to go.

So, Hans, what are your thoughts on this, about adjustments to this recommendation?

MEMBER KLEIN: Okay. Well, the first is the question of whether this has to be about app development. Is this recommendation about clarity and highlighting the benefits of DSRC, or is it also called to app development. It needn't be called to be app development. I don't know about one way or the other.

What I do think is necessary is to achieve greater clarity about DSRC. That showed, you know, Walt spelled out that DSRC is a platform which offers communications within rapidly-moving vehicles over short distances. That's the unique benefit of this medium.

And, the question then is like, okay, we know it gets us safety, and, you know, some number of years out, I guess 2018, we'll have safety, which giving a lot of people a little concern. I think it would be great to say, hey, not only are we going to have very significant safety benefits quite a ways out, already we have other benefits of this investment in DSRC and here's what they are. These are the apps that you get.

So, in some ways it's a clarifying communication

recommendation.

It could also be, I'm not -- you know, it also could be, and by the way, JPO should develop apps in this area. I think the private sector will develop apps in this area. So, that's less critical.

But, I think we need clarity about the value of DSRC as a platform. What's going to build on this platform?

CHAIRMAN DENARO: Yes. So, we are talking about promoting DSRC apps that are somewhat uniquely served by DSRC.

MEMBER KLEIN: Exactly.

CHAIRMAN DENARO: Not possible with something else.

So, would you consider some rewording in this recommendation, Hans, to capture what we are saying here?

MEMBER KLEIN: Yes, that's fine.

CHAIRMAN DENARO: As opposed to, JPO should develop DSRC necessary apps.

MEMBER KISSINGER: This is also to encourage the development of non-critical safety critical applications for DSRC, is that right?

MEMBER KLEIN: I am trying to highlight them, because the safety critical applications need a very high

level of market penetration, in order to be effective, which pushes out any benefits from DSRC quite a bit.

So, the question, alternative applications might have nearer-term benefits, which would give -- which would improve the cost benefit balance for DSRC.

But, I'd like to know what those other ones are, and I think they should be highlighted.

CHAIRMAN DENARO: So, this is what's being called day one apps. You know, one of the day one apps that are not feasible on other kinds of communication that require DSRC.

MEMBER KLEIN: Yes.

MS. BRIGGS: So -- this is Valerie -- at the risk of arguing this one point, and maybe I should follow with you, Han, because, you know, there are other application categories that can use DSRC, but that doesn't, necessarily, mean that they have to use DSRC.

MEMBER KLEIN: Right.

MS. BRIGGS: So, I think we need to understand what it is you are really looking for. So, I'm happy to talk to you afterwards.

CHAIRMAN DENARO: Valerie, my take on this, and,

Hans, you can correct me if I'm wrong, but was that this was somewhat of a defense of DSRC, given that we have to wait so long to realize the safety benefits, are there other apps that can be highlighted that provide benefit earlier, so that can help maintain the focus and the interest in DSRC. That's the way I saw it.

MS. BRIGGS: I think your report --

MS. BRIGGS: What is those apps, basically, jam up the frequency, and by the time the V2V comes on board, you know, we don't have as much frequency as we need?

CHAIRMAN DENARO: Well, we are just talking about safety critical apps, right? I mean, I agree with what Valerie said, you need DSRC to do a lot of things, but what about the safety critical apps, those are all secondary.

I guess where I'm at is, and I'm not sure, is this the role of the DOT to develop apps? I mean, I can understand if there was -- to have them identify the core functionality required for safety critical apps operating under DSRC, but that's a completely different thing than saying we want them to develop apps.

MEMBER McCORMICK: You are right, Bob, and I would agree -- well, I would agree with what you were implying,

that is not their role to develop apps. This is about communications.

So, what is -- what can the JPO do or have done that improve the communications with respect to DSRC, and help protect it as a vehicle?

CHAIRMAN DENARO: Well --

MEMBER KISSINGER: Does that mean we want them to play a role in overseeing and prioritizing the approval of apps in DSRC?

CHAIRMAN DENARO: No. I don't read this as going in that direction.

MEMBER SCHROMSKY: Maybe, Bob, this is something. Do we have to use the word apps, can we use something else like safety program? I think the word apps --

MEMBER McCORMICK: I like that, Brian. I like that, Brian. Change it to something new, to develop the DSRC necessary criteria, or something that indicates that they are not developing part of the stack.

MEMBER SCHROMSKY: Right.

MEMBER McCORMICK: I mean, their job is going to be, eventually, if they elect to move forward, U.S. DOT, if they elect to move forward, they go through a multi-year

rulemaking, they come back and they say, okay, we are going to require vehicles to be able to have this functionality. They are going to identify a capability, not a hardware, right? Not a software. They are going to say that your car needs to be able to communicate and receive these messages, and react to them in an appropriate manner.

So, knowing that they are going to be using DSRC, complementary to that would be to say that, well, okay, if we are on a path of telling you that you have to have this functionality, then they should be defining what it is those DSRC necessary systems should be communicating, right?

MEMBER SCHROMSKY: And, I think outside of -- you know, absent maybe some specific test procedure type things that may come later, those are known. That's why we are going down this path.

CHAIRMAN DENARO: Right.

MEMBER CAPP: The safety pilot was built up to simulate some of these apps already, the data is being collected on them. So, if we didn't know what those apps were, so to speak, then the data is useless.

So, I don't know, have we talked more on this one? I'm kind of advocating taking this whole section 19 out.

MEMBER KLEIN: We have a lack of clarity, request greater clarity. I don't think there's a down sized greater clarity.

MEMBER CAPP: Unless we take Valerie's suggestion and make it a communication, or a summary of the work that's been done under the umbrella of the ITS JPO that concluded that DSRC is necessary to do certain safety apps, and why some of the things that Walt talked about, maybe a communication document would be helpful.

MEMBER McCORMICK: That's the third paragraph. The third paragraph says we should prioritize, blah, blah, so we can demonstrate it.

I also think that the last paragraph is important, because that came from some of our public sector members, that said, look, you live in an urban area, folks really need to do it in rural areas, because that's where most of the country is, right?

And, I think that maybe is a separate recommendation, or sub-tier to something. But, I think we've got a number of different things in here. Paragraph 3, I think, says what you just said. Paragraph 5 says a different thing, that I think to recognize what the public

entity participants weighed in on at our last meeting, that that is a reasonable thing to ask for.

How, the whole third paragraph I think needs to evaporate, and then, really, we state what we are talking about here, in terms of what we are asking them to develop. I think we ask them to develop and publicize, you know, and educate the world on what's, you know, what DSRC is, and why it's important, and what are the necessary things, even if it's already discovered.

But, I really just had a knee-jerk reaction about appointing the government to develop an application, because when you look at deployment, now what are you going to do? Are you going to send that application out to every auto maker on the planet and say, if you sell a car here it has to have this specific app in with it. Now, you are driving cost, because unless they developed one for each different software protocol that exists in all different cars and models, it's a massive introduction, as opposed to saying, here's the requirements that you have to have, then it becomes incremental for the auto makers and their tiers to add that functionality in, within the coding structure that they have.

MEMBER KISSINGER: Either develop an app, and put it out there and you can see it right from your Android or iPhone. It's not like that.

MEMBER KLEIN: Currently, it's my understanding, yes, the app development in the safety pilot is done by either parties.

I think the app -- the question about the app development is separable, and I think that could be a valid point, because it's not the role of JPO to app develop. There that's fine.

So, there's two questions here. App development of DSRC necessary apps, and creating a category called DSRC necessary apps for communications and reporting that makes it clear what functionalities, what applications, you get from this. We owe you safety applications out of this part. There are more -- there are more of these day one apps. Do we see benefits accruing early, etc., etc. That would be, I think, beneficial to the program, to identify those out and highlight them.

MEMBER McCORMICK: That puts you on a path for saying that now somebody can come forward and say -- and I can test that for you, I can evaluate it, or I can -- that

may become a certifying entity for it. You know, that's a logical step to take. I like that.

CHAIRMAN DENARO: So, let's do that, Hans. If you wouldn't mind, why don't you, you know, rewrite this one, focusing more on the communication aspect, not so much on the -- don't make it sound like we are suggesting they should be in the app business, and let's just capture the comments that we have here. Does that make sense?

MEMBER KLEIN: Yes, that makes sense.

CHAIRMAN DENARO: Okay, great.

MEMBER KLEIN: So, the second question is, we'll drop any language, because somebody had put in that language, or proposed it, that ITS JPO should develop and promote an early short list of apps. I assume we don't want that language then.

CHAIRMAN DENARO: Right. Correct.

MEMBER KLEIN: No develop -- no app development.

CHAIRMAN DENARO: Correct. Okay, great.

All right. So, we'll get a new version of this, and we can discuss it in emails and it will go out for comment. Okay. Let's move on. We are getting close.

No. 20. Let me just catch up here. So, this is

pretty much unchanged, except things are restructured a little bit. I think when I did it I pulled some stuff out of recommendations and put it in the background, and just made it more consistent with the way we were doing things before.

MEMBER McCORMICK: I think it can go either under outreach and communication or under implementation.

CHAIRMAN DENARO: Yes, you know what, I don't think it matters that much. I mean, you know, these are just general categories we had. So --

MEMBER McCORMICK: I would take out the very last partial sentence, that says this is more of a diffusion model.

CHAIRMAN DENARO: Right.

MEMBER McCORMICK: It doesn't add anything, and it's just conversational.

CHAIRMAN DENARO: Do you have a comment on that, Hans?

MEMBER KLEIN: No, I'm sorry. I'm trying to figure out if I'm looking at the right -- I have a paper copy, and if I've got the right document. What was the, Scott, what was the comment, what was it?

MEMBER McCORMICK: The last sentence of recommendation 20 which says, "This is more of a diffusion model."

MEMBER KLEIN: Yes.

MEMBER McCORMICK: I'm just saying it doesn't add anything, it's conversational. I would request just taking it out.

MEMBER KLEIN: Why don't we put it in parentheses or something like that. It's kind of a funny little, you know, thing hanging on the end there. It doesn't even have a dot, period at the end of it.

MEMBER McCORMICK: Well, I think the problem is, I'm not sure what that means, Hans. It has to be clarified if you are going to leave it in.

MEMBER KLEIN: Yes.

MEMBER McCORMICK: We don't care if it's a diffusion model, or an insertion model, or whatever.

MEMBER KLEIN: Yes, we can strike --

CHAIRMAN DENARO: We already said what it was, we don't need to give it a name, yes. Okay.

MEMBER KLEIN: You know, let me tell you something about this. This has been kind of an interesting experience,

that the -- I mean, for what it's worth, we've been talking about implementation, and deployment, and incentives a lot the last two years. And, actually, hey, guess what? There is in the last -- starting like January or something of last year, 2012, there has been significant effort in this area. So, there's a longitudinal study of implementation, started in January 2012, et cetera, et cetera.

So, there's some of this stuff somehow we didn't connect with activities that I guess are underway. It has been a renewed attention to implementation within JPO, am I correct in that, Ken or Valerie, or Steve?

MS. BRIGGS: You are correct that we do have the longitudinal study. We also have some requirements from Congress in MAP-21, to look at implementation issues. And, we have other ongoing implementation activities related to connected vehicles.

So, we do, indeed, have quite a lot of implementation focused activities going on.

MEMBER KLEIN: Yes. So, that was certainly striking for me, and I think, you know, it's an interesting area. Some of the comments here almost become feel good, so we are also reiterating the perception that implementation is an

important issue.

I realize now that there's more going on than we were aware of. So, I found some examples of efforts that kind of match what's being recommended here. I don't think that -- you know, it's pretty generic recommendations.

CHAIRMAN DENARO: I would argue we didn't have any objections to this. All I did, and you are seeing all the red, is because I took things out of recommendation and I moved them into background, just to be more consistent, and to make our recommendations more concise.

But, all the information is still there. We didn't have any objections to this. I don't have a problem -- I don't see it as our job to only make recommendations where we feel things are not being done. If we are making a recommendation that we feel is something that, you know, is really important, and JPO response is yes, we agree, and here's what we are doing in that area, I'm fine with that.

MEMBER KLEIN: Yes.

CHAIRMAN DENARO: I think for our memo to be complete, that some of the comments we are going to make are things that, you know, are potentially being done, but we are just highlighting those.

And, you know, it's kind of like the old management technique of saying, what should we keep doing, what should we stop doing, and what should we change. And so, some of this is what we should keep doing, and I'm okay with that.

MEMBER KLEIN: Yes.

CHAIRMAN DENARO: So, with no other comments on this section, I suggest we move on, unless someone has an objection.

Go ahead and move down, Stephen.

MEMBER McCORMICK: I agree that we need to remove recommendation 22, because it's redundant. I mean, we've already said that.

CHAIRMAN DENARO: Right. So, that is redundant to what we said earlier.

You okay with that?

MEMBER McCORMICK: I'm not clear -- I'm not clear why we are recommending 23.

CHAIRMAN DENARO: Before we go there, let's make sure that we are okay.

MEMBER McCORMICK: All right.

CHAIRMAN DENARO: Hans, do you agree with that?

MEMBER KLEIN: I can't read what's on the screen too

much, so unless something new was just decided I think I was okay with everything we said so far.

CHAIRMAN DENARO: Yes, okay. You should have it on your paper copy. There's no change.

Okay. Let's move to 23 then.

MEMBER McCORMICK: I mean, take the last sentence, the long-term goal sentence, is a useful sentence. But, I mean, how NHTSA works, I mean, this is how they work with everything. You know, they have initial implementation. It leads to oversight, trust issues. They pull in and out of this as they need to.

So, I'm not clear that anything of what we are saying in 23 is useful, except for, you know, if you want to note the fact that the long-term goal should be this. And, I don't have a problem with that long-term goal, okay, I think that's a useful comment.

I'm just not sure that we've led up to that thing correctly.

MEMBER KLEIN: I think the connected vehicle program leads to a different -- it generates an operating organization. I don't think most of NHTSA's regulations create operational organization.

So, this is a little different than what's been the case in the past.

MEMBER CAPP: It is different, but their document that will be coming out in the next 30 days is going to talk a lot about that role. So, I don't know what this recommendation, necessarily, does for NHTSA either.

I mean, they are likely to have 100 pages around this No. 23 already at the printer.

CHAIRMAN DENARO: I don't know if it's at the printer, but they've been working on it, seriously.

Yes, and I don't know that I'm -- I feel comfortable making a recommendation on what we think their role should be. I mean, I did, in my clean copy, put an alternative in there, because there was a lot of discussion about this as an alternative, but I'm not sure I even like the alternative I put in there now.

You know, there's this whole issue about the certificate management system, and NHTSA is not normally in that role, because it's kind of like DFAA, and they don't do that kind of thing.

I mean, that's all being worked on, and we didn't really give that as much discussion. I know it was an issue

that we wanted to address, but we really get to that very much.

MEMBER McCORMICK: I vote we remove it.

CHAIRMAN DENARO: Yes.

MEMBER KLEIN: Yes, I'm not sure it's that. Like you say, this is about to become a very big and heavily intensely studied issue.

So, I think --

CHAIRMAN DENARO: Hans, I think the problem is, we don't have a specific recommendation, you know. We are just saying, gee, you guys need to think about what your role is. And, it's lacking specificity.

MEMBER KLEIN: I think so much is going to happen in the next couple months there, the next six to 12 months, on this. Our early, a little bit ahead of the recommendation might not be that important.

## NEXT STEPS – BOB DENARO

CHAIRMAN DENARO: Okay. All right.

So, we are going to take out 23 in the final version.

All right. With that, we have made it through the entire document. We've still got some more homework in

here, and there are a couple issues. I've got a lot of notes that I'm going to need to circle back with some people. But, other -- and so, my plan would be to circle back to Scott Belcher, I'll work with Hans on some of the changes in his area, and, basically, come up with another draft final version for comment, and, hopefully, we're a lot closer now.

Are there any other overall comments, something we are missing, or any concerns from anybody?

MEMBER McCORMICK: Well, I guess I would like to just say to the Committee that I very much appreciate having worked with all of you. I've learned a great deal, and understand and have a better perspective.

I certainly, on behalf of all of us, would like to thank both Hans and Bob for all the work you have, and are continuing, to do to pull this all together in a cohesive manner.

Thank you very much.

CHAIRMAN DENARO: Thanks for your comment, Scott.

All right. Well, thank you, everyone, for the call today. We are ending quite a bit earlier.

We didn't have anything else on the agenda, am I

right, Stephen?

MR. GLASSCOCK: Yes, that's it.

MEMBER SCHROMSKY: Bob, before we go, just for point of clarification here on next steps, we need some edits here, we'll get that document. So, when do we owe everything back to DOT for final send off?

CHAIRMAN DENARO: Well, we are almost overdue now, because we really wanted to get something to JPO in November, so this had enough time to get through their process, and, you know, all the submittals and so forth.

So, we need a pretty rapid turnaround now, and I was just going to address that. I think what we need to do is spend some time, I'll follow up with some emails, but I would like to have this all finalized in the next week or two weeks maximum, because then we move into the holiday period already. So, it really would be better if we could get this to JPO by the first week in December, at the very latest.

MEMBER SCHROMSKY: Okay.

CHAIRMAN DENARO: So, I want it to turnaround pretty quick. So, we'll do another version here, get some comments, and we'll attempt to get consensus in the emails

on the final draft.

Ken, do you have any other comments for us, or anybody else from JPO?

MR. AUGUSTINE: This is John Augustine, Ken just stepped out of the room for a moment.

CHAIRMAN DENARO: Okay.

MR. AUGUSTINE: But, I think this has been very helpful. I think we benefitted just by hearing this conversation, in addition to what we'll actually get in a formal memo. So, I thank everybody for their time and thoughtfulness, and really trying to come up with some substantive and helpful comments. So, we do appreciate it.

CHAIRMAN DENARO: Thank you.

All right. And, I'll just summarize for myself. I have enjoyed very much working with each one of you. I think we had a really interesting Committee for the last two years, and I mean that in a positive way.

I think we had some of the most diversity that we've ever had, in terms of input, all from some pretty deep technical stuff, to the standards harmonization, and we really covered a wide breadth of issues. And, you know, that was a lot of work to bring that altogether, and I just

want to say for myself, thank you to every one of you for the contributions you made in pulling this together.

I know a lot of work went on in the subcommittees. Some of the subcommittees were very busy, and that work is very much appreciated.

So, again, thank you all from me.

MEMBER KLEIN: Thanks, Bob.

CHAIRMAN DENARO: All right. We are adjourned, thank you.

(Whereupon, the above-entitled matter was concluded at 3:23 p.m.)