



FEDERAL MOTOR CARRIER SAFETY ADMINISTRATION OFFICE OF ANALYSIS, RESEARCH, AND TECHNOLOGY

Addressing CVISN Data Quality Deployment Issues January 22, 2008

Webinar Transcript

Presenters

- **Julie Lane**, FMCSA Office of Analysis, Research, and Technology
- **Jingfei Wu**, Volpe Center
- **Sandra Boys**, Johns Hopkins University Applied Physics Lab
- **Andrew Wilson**, Volpe Center

[0:00]

SUMMARY PRESENTATION TITLE SLIDE—*Addressing CVISN Deployment Issues Webinar*

PHONE OPERATOR:

Welcome, and thank you for standing by. At this time you are all participants are in listen only mode. After the presentation we will conduct a question and answer session. This conference is being recorded and if you have any objections you may disconnect at this time. I would now like to introduce Julie Lane. You may begin.

JULIE LANE (FMCSA OFFICE OF ANALYSIS, RESEARCH, AND TECHNOLOGY):

Hi. This webinar, which is called “Addressing CVISN Deployment Issues,” is part of a series that is put on by FMCSA’s Office of Analysis, Research, and Technology. I would like to thank everyone for being on today and participating in our CVISN webinar. As was mentioned, I am Julie Lane, your web conference coordinator, and I will kick off the first presentation. Questions will be answered at the end of the call and you will be able to ask questions at that time or you will be able to submit questions in the question and answer block at the left-hand side of your screen. And please note that you will be given the opportunity to receive a copy of this presentation at the end of the webinar. Are there any other directions?

KIRSE KELLY:

Just to mention that you can type in questions throughout the webinar and those questions will also be addressed at the end of the webinar. So if you think of them while we are going along, feel free to type them in.

JULIE LANE:

Okay, I will go ahead and get started with the first presentation. As I mentioned, FMCSA's Office of Analysis, Research, and Technology is pleased to welcome you to our January webinar, which is entitled CVISN Deployment Issues.

SLIDE 1

On December 11th of last year, FMCSA met with CVISN stakeholders, Volpe staff as well as the Applied Physics Lab (APL) staff at the Volpe Center in Cambridge Massachusetts. CVISN stakeholders were represented by program managers and developers from Nebraska, New York, and Washington, in addition, Volpe FMCSA technical support staff, as well as developers and quality assurance staff, participated. The discussion was focused on data issues and quality assurance. This webinar reports on the briefings and discussions that occurred at the meeting. Presentations have been updated since that meeting to reflect the current status.

SLIDE 2—*Agenda*

I will begin with an overview of today's webinar. Jingfei Wu of Volpe will summarize recent and planned SAFER releases, including the SAFER deployment plan for the remainder of Fiscal Year 2008, and to also address Volpe technical support for CVISN. The next part of the webinar will focus on monitoring. Sandra Boys of the Johns Hopkins University Applied Physics Lab will introduce the topic of performance monitoring as it applies at the operational level. And finally, we have Andrew Wilson who will describe our current and future approaches to monitoring SAFER processes.

SLIDE 3—*Overview of Webinar*

Now let me set start the overview portion of today's webinar.

SLIDE 4—*Background*

The background to this webinar—we have made significant process progress with the list of action items and list of follow-up issues from our March 2007 CVISN Deployment Workshop. Recent SAFER releases have addressed a number of these significant issues. These included:

- Timeliness and reliability of the MCMIS carrier data,
- Implementation of PRISM CVISN business rules,
- The report of the transponder opt-out process, and
- Tracking of a non-authoritative source that submits vehicle registration data to SAFER.

However, issues with SAFER 7.3 prevented some States from uploading data to SAFER between September and December of last year (2007). States have expressed concerns that law enforcement officers do not find the quality or timeliness of data adequate enough to make their

CVIEW a useful tool. These concerns prompted FMCSA to meet with stakeholders at Volpe in December 2007.

SLIDE 5—Participants Noted these Critical Needs

Participants noted these critical needs:

- More timely communication from FMCSA Technical Support when a problem affects the CVISN community—alerts on the SharePoint site have been implemented as an adjunct to the emails,
- Data checking at the record level,
- Regression testing,
- Better follow-up from FMCSA Technical Support on open trouble tickets,
- Establishment of an independent quality assurance team. Quality assurance should not come at the expense of bug fixes and enhancements, and
- Ongoing data integrity is necessary and should be pursued.

[5:12]

SLIDE 6—Current Data Quality Issues

Some of the current data quality issues:

- The need for all States to upload data to SAFER. This is very big and very important issue. This is a discussion topic on the December CVISN Program Manager call. Kentucky summarized the issues and made the point that each State needs to make uploading of data to SAFER an urgent priority. FMCSA supports the interim solution of States such as Washington and Kentucky of uploading data for States that cannot yet do so themselves.
- Certification and decertification criteria need to be identified with CVISN stakeholder input.
- Regular PRISM and CVISN meetings need to be resumed.
- We have bug versus enhancement priority. In general, certain bugs do not go through a lengthy prioritization. However, if bug resolution requires major development, the work must be prioritized and scheduled.
- Nebraska noted that recent data quality problems that were of the same type reported at the March 2007 workshop still exist.
- Volpe also requested the need for a roadmap that would guide SAFER development. The approach used in the past has been to address isolated change request rather than to develop a strategic plan.

SLIDE 7—Post Meeting Actions

In the next briefing today, Volpe will present the Fiscal Year 2008 SAFER deployment plan that was unveiled at the December ACCB meeting. Part of the post meeting action: the Proactive

Data Quality and Operational Issues Focus Group reviewed the document titled CVISN Proposed Operational Performance and Data Quality Measurements, and it was presented by Washington at the December ACCB meeting. The document is posted on the CVISN SharePoint site and States are to please review and comment on that document.

SLIDE 8—*How to ‘Stay Tuned In’ on CVISN Issues*

This is a list of ways in which you can participate in addressing these CVISN issues:

- We have monthly CVISN ACCB, which is Architectural Configuration Control Board, meetings, which are held on the third Thursday of the month.
- We have monthly Program Manager teleconferences, which are the third Tuesday and Wednesday, expanded CVISN ad hoc team meetings, which included Roadside Identification and the COMPASS collaboration meetings as well as ACCB focus group activities. This includes a proactive data quality and operational issues focus group which works with Volpe to establish operational performance measures and develop monitoring plans.
- Finally, there is the CVISN collaboration SharePoint site, where you can set an alert so you can receive an e-mail when a document has been added or a meeting has been scheduled in an area of interest to you. And for anyone who does not have access to the SharePoint site, or that has difficulty accessing the site or perhaps needs help navigating the site; you can contact Nancy which is nancy.magnusson@jhuapl.edu.

SLIDE 9—*Future Activities*

FMCSA is currently planning the 2008 CVISN Deployment Workshop, which is intended to be a three day workshop that will be held in Washington D.C. More information on this workshop will be available in the February Program Manager’s call as well as in the upcoming months. Volpe will be scheduling a teleconference to obtain input on certification and decertification criteria. The SAFER ICD will be made available on the SharePoint site for States to review. And States are strongly requested to make uploading data to SAFER an urgent priority. This is very important. A report that shows who is and who is not a uploading data will be posted on SharePoint and updated quarterly.

And that is it for my portion of the presentation. I would now like to turn it over to Jingfei Wu with Volpe.

[10:03]

PRESENTATION 2—TITLE SLIDE (1)—*SAFER Releases and CVISN Support*

JINGFEI WU (PROJECT MANAGER OF THE SAFER PROJECT, VOLPE CENTER):

Thank you, Julie. Good afternoon everyone. For those of you who do not know me, I am Jingfei Wu, the project manager of the SAFER project at the Volpe center.

SLIDE 2—*Agenda*

My part of the presentation this afternoon is going to cover SAFER releases that we have made in Fiscal Year '07, our current focus of the SAFER development team, and what is our Fiscal Year 2008 SAFER development plan. So that is our agenda.

SLIDE 3—*SAFER Releases*

Starting with the SAFER releases, all SAFER releases made in FY07 happened after the March workshop in 2007. So what you see is that starting with the April release, we made it through the end of December '07. We did actually have some patch releases happen in early '07 that are not listed here. So the first SAFER release in April, 7.2, we corrected some defects in the MCMIS snapshot component that have constant failures when certain data fields on MCMIS are not being populated. And also, we took the opportunity to enhance the application, to properly handle empty data files that we receive from the State and generate into the output transaction file. In that release we also implemented some new query functionality that we have put on the SAFER website. Those functions have allowed CVISN users to track the upload information at each record level and by each transaction. So the user can also create their own summary report by each transaction to show how many records SAFER has for each State within a specific time frame. In that release we also corrected a defect in the T0031 transaction file creation. The T0030 transaction is the transaction that contains vehicle inspection summary data. So these are the enhancements and bug fixes that we made in the SAFER release 7.2 of April 2007.

SLIDE 4—*SAFER Releases*

The next major release in '07 was in the September timeframe. In that release, we enhanced the T0022 the IRP, Registration Input Transaction, the business rule part, and also we factored those changes into the T0028 output transaction to support the registration rule changes that we have discussed several years—CR50. We also enabled a tracking capability for a non-authoritative source to send the corrected registration data to the SAFER system. This was to lay out the groundwork for the future if it becomes required that every State send vehicle data to SAFER, so it will be able to track whether the State is sending their own data or the State is sending another State's data to SAFER.

Another major change we made was to the e-Screening transaction. We implemented the opt-out functionality, and also we removed the T0023 E-Screening Enrollment transaction as requested by the stakeholder. Another change we made was to the XML subscription functionality. We implemented a new data file name convention to the T0031 transaction. So, if you are not using the subscription functionality, you probably will not see it. But, for the subscription user, the T0031 transaction has a new data file name convention.

We also added a target indicator to the T0028 transaction. It was requested at the March workshop last year. It is in the T0020 transaction now. Whether and how the State is going to use it is still to be determined by the CVISN and PRISM stakeholders, but the information is there.

[15:00]

SLIDE 5—*SAFER Releases*

The next release we made in '07 was 8.1, so it was made towards the end of November. You may know that we have talked about the timeliness of the T0031 transaction and we tracked the whole timeliness issue with the T0031 transaction primarily in two steps. One is to look at how SAFER gets data from MCMIS and to see how we can improve that process. In this release, 8.1, that we released in November, is to implement a modernization process which SAFER uses to obtain the company data from MCMIS.

What we did is to obsolete the old technology, and replace it with Oracle Stream Technology. The goal is to improve the timeliness of the data, particularly the carrier safety and census data to SAFER. And in the meantime, we also fixed the ISS core algorithm in SAFER so that it is consistent with what 8.9 MCMIS is using and particularly developed for the carrier with insufficient data.

So that release has completed Phase 1.

SLIDE 6—*SAFER Releases*

In the next phase, we applied some other interfaces—that users see in the SAFER census and safety data from MCMIS—to other applications services. We applied that technology to the ISS web services. We continue to work on that, to apply the same data sources to SAFETYNET and ICC, and I forgot to mention in the previous slide that in the November release, we have already applied the T0031 transaction to use the carrier data source via the Oracle Stream Technology.

Mid-January, we released the patch for a performance issue, and some minor bug fixes in the T0022 Version 3 transaction. Especially that transaction has a major issue when processing a large file; this is the issue that Julie just mentioned in her presentation, that we had released as a result of the release in September '07. So far, after the release—it has been a week or so—performance-wise it is satisfactory. We have seen large files—5,000 records—in the T0022 v3. The processing time is anytime between 7 minutes to 30 minutes. It depends on how the States construct their data. We do continue to correct one specific business case defined in the CR50 to complete the T0022 v3 patches. And so far that business rule correction is, the changes have been made in the development team and been QC'd and we have a plan that looks like we can release sometime this weekend. So just keep in tune. We're going to send out some technical message about the second patch release for that one specific business rule, number 1.12, sometime midweek or Thursday. So if you are not getting any messages from Tech Support, please let us know. If you are getting it, you will still want to get a message from January.

SLIDE 7—Future Development Focus

In the next few slides, you are going to see what the development focus is right now and what they are going to be for the rest of FY08. Right now, our focus is to continue to address the timeliness of the T0031 transaction and we think this is a major concern for the stakeholder/user that is getting data from SAFER applications. What is going to happen is Step 2—after we improve the process of how SAFER gets data from MCMIS, the next step is to see how SAFER generates the updates of the carrier information and packages them into the T0031 transaction. We have a particular CR that is going to improve the performance and accuracy of that T0031 transaction. We are also going to build a process to close monitoring the key steps of what kind of changes the MCMIS receives and what kind of changes that SAFER receives from MCMIS and whether SAFER has correctly put the information into the T0031 transaction. So that is the monitoring process that we are going to build on top of the whole carrier data exchange process from MCMIS/SAFER to CVIEW States.

We are also going to continue to resolve the discrepancy that the users sometimes see in the ISS-D score—you know, from a different source, whether they see that data on the L&I website is different from what they get from the T0031 transactions. We are going to have the SAFER website display the ISS data, so when they are getting that data from the T0031 transactions, they will also see the same data on the website. The SAFER website is also a public website. We are going to coordinate with the L&I website team to take that information off their site.

[21:38]

SLIDE 8—Future Development Focus

Another major effort that we are going to address is also continuing as the CR50 business revision. We did have a Business Rule #3. Although that rule is not enforced in the sort code of the T0022 transaction, we do recognize that the rule is pretty important for the quality of the IRP side of the code for the vehicle registration transactions. So what we're going to do also, as a request of the stakeholder and after discussing with the Board, SAFER is to have a mechanism to select the records in event that the registration that is sent to SAFER is no longer active. We're going to select those records and send a report to the States, so the States can look at these motor vehicles and follow up with some new information to correct the IRP Status Code.

SLIDE 9—Future Development Focus

Another main focus is kind of already ongoing, and we are going to continue to support that, It is to improve the data quality of the data that SAFER has in the system. This is a major concern to everyone using the data from SAFER. We have to look at all of the calls and issues reported and analyze what kind of issues people reported, and it is very interesting that we have noted that a lot of the time, those data quality issues reside in the source system. For example, MCMIS is the

sole source for the carrier safety and census data. The States' CVIEW is the sole source for credentialing information like IFTA and IRP. Just looking at all of those issues and what is the underlying problem, we thought that the solution to correct them is really everybody's job; because they are quality issues, it relates to, "Can we try to export it from or (have it) reside in SAFER?" But if you really understand what SAFER does, SAFER is a federal system that facilitates data exchange between Federal and States, and among the States. SAFER usually doesn't change your data. SAFER basically stores data that the sources have sent to SAFER, unless there is a specific request by a stakeholder to implement some data validation and changes. Otherwise, SAFER just takes the data as it is. For that reason, we thought everybody needed to take full responsibility to improve the data quality and correct issues if they are from the source systems.

Whenever there is a need for SAFER to implement in terms of data added tracks and validation at a federal level to some key data fields—for example, MC number, DOT number, license plate, SAFER could implement those validations at the system level. Also, we do have other CR already created to implement in SAFER to enforce the data integrity tracks across different input transactions from the States. For example, the RIP transaction—we could check whether the RIP account exists in the T0020 transactions, and see if they're the same as the T0021 and T0022 transactions.

[25:58]

SLIDE 10—*Future Development Focus*

These two efforts were actually requested at the March workshop last year. It was safer to explore the features using digital signatures and other security features in CVIEW input to SAFER, and also to find out with Nlets to verify registration and transponder information for the non-authoritative source. These two are going to be our research and prototype effort that sometime in '08 the development team is going to start to look at.

SLIDE 11—*Technical Support*

Tech Support. We do provide technical support to the CVISN user and primarily this function is performed in the technical support group that is led by Chris Flynn; I am actually speaking for him on this part today. What you are going to see in the next few slides are the issues and concerns raised at the March workshop last year. These are just the status updates that have to be made and what is going on in the Tech Support group.

One thing is how Technical Support is going to provide proactive communication with the CVISN stakeholders. If you're not aware of it, the technical support group does provide weekly call log information and that information is posted to the CVISN Collaboration SharePoint site. Technical Support also has a representative participate in the monthly CVISN ACCB meeting. We also updated and are going to stick to the communication plan. Whenever there are changes to the file baseline and any issues found with the system, the Tech Support group is going to

send out the announcement to the CVIEW users to let them know what kind of issue it has found and what the impact of that issue is in production systems and, if possible, when the fix will be ready for the deployment in production system. The technical support group is also thinking about setting up a separate email group for CVISN users for close monitoring as to what kind of issues are coming into the HEAT system. There is an ongoing weekly meeting between the operations group and the development group here at Volpe to go through the CVIEW issues and calls that are received by the technical support group. The technical support group also handles the account creation and communication process, so if you go through that process, we advise you to contact Technical Support for various support activities and to get certified.

[29:34]

SLIDE 12—*Technical Support*

We also have a daily solution, kind of a sanity checklist, that is currently manually checked by the operation group here to make sure that the services are running and that all of the input folders are emptied and the input and output transaction files are exchanged and created as normal. There was also a suggestion to improve the visibility of the status of the call created in the HEAT system. One of the efforts that has been going on here in our technical support group is to provide the HEAT self-service to the CVISN users so the CVISN user can open the ticket online and you can also check the status and create the ticket online. I think this capability is almost there in production, but the group is doing the post release monitoring up to a point that the technical support group is to make an official announcement to everyone using that HEAT self-service. Another thing that Chris told me the other day is that they are also thinking about providing another functionality called IHEAT to a selected division user group. Because of the cost of a license, only a limited number of users can have that access. That will kind of be like a web version of the HEAT system—it will allow you to search and do a lot of things that the HEAT self-service doesn't do.

SLIDE 13—*FY 2008 SAFER Development Plan*

This is the last side of my presentation. It is a glance of the FY development plan. If you look at the color code, the green usually marks the item that is already completed by the development team. Those are the ones that relate to the missing T0029 output transactions—the modernization of how SAFER gets data from MCMIS Phase I and Phase II. Also, in the fifth row, the CR number 1981. This is to enhance the error reporting and the transaction log reporting in the CVISN info transaction log file so that right now, if you take a look at the log file, you will be able to see a transaction ID in the log file. This is the enhancement we brought in when we released the performance enhancement; that was a week ago, and that is already in place, so we didn't have a chance to change it to green.

The next one, 2029, is the performance defect we found with the T0022B transaction and that performance part is already addressed and was released on January 12th. We are going to change

it to green this weekend, actually, for the business case—the correction is released into production.

The next two in yellow are related to the update of the SAFER ICD. One particular is specific for the data dictionary part of the ICD and the other is for the interface specification part of ICD. The data dictionary actually is available for review, and the specification ICD is going to be available for review at the end of the month, so this is still on track. When those are available there will be on the Share Point website under the General Document section.

The three in purple are the ones that we have identified for the March release in '08. You are going to see that it is going to continue the effort to address the timeliness of the T0031 transaction. One is going to be addressed by the CR33 to take a look at the creation of the T0031 transaction, and the other is the monitoring process of the T0031 transaction data from beginning to end. The other is to enhance the SAFER website to display the ISS score. The next seven items that are marked in green are the ones that we selected for the September release in '08, and those are ones that should address some of the added text that are identified for SAFER to implement in order to improve the data quality of the data for 20, 21 and 22 transactions. Also, there are specific data fields that we need to find out how MCMIS is using and how SAFER is going to use it. And we are also going to take a look at the design level how SAFER is going to handle the errors it found in the input transaction file. So we are going to implement the capability that the system can only reject the record containing the error instead of reject the whole load of the data file.

We are going to continue to work on the SAFERMON enhancements. This is a tool that the SAFER team is using internally to monitor the healthiness of the system, and all components and applications that SAFER supports. We also are going to make a change in a field of the T0031 transaction that is reported by the ACS folks, and we are also going to start the functionality and feasibility research part of the digital signature functionality and the analyst and all that stuff we just talked about. Also, another major effort that we are going to work on pretty soon with everybody is to define the certification criteria and the decertification criteria for the States. We are going to work that with the PRISM folks together as a team.

These are the overall development plans for the SAFER project in FY08, and I am ready to take any questions you might have regarding my presentation.

Julie Lane:

All right, Jingfei, thanks. Actually, we are going to hold off on questions until the end of every ones presentations. So thank you very much for yours; and the next speaker we are going to have is Sandra Boys from APL.

[37:25]

PRESENTATION 3—TITLE SLIDE—*Operational Performance Monitoring Work Plan*

SANDRA BOYS (JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LAB):

Good afternoon. The next presentation is on operational performance monitoring.

SLIDE 1—Defining the Problem—Levels of Performance Monitoring

I would like to begin by defining what we mean by performance monitoring. We have actually identified three different levels. First, the functional level, which is the performance of States in complying with CVISN goals and objectives, or the performance of FMCSA in providing support to States. At this level we address questions such as:

- What States have achieved core CVISN and at what level? and
- Are States continuing to perform all core CVISN functions?

Next is the management level, and that is an assessment of how FMCSA does in awarding grants and how the States do with funds awarded. So here we are addressing questions like

- How many States received grants in Fiscal Year 2007?
- How much grant funding was awarded in FY 2007? and
- For any particular State, how many grant milestones have been met?

And finally, the operational level, which can also be called the data level, addresses the three primary functional areas of the CVISN, not just SAFER. It is also looking at safety information sharing. Examples of processes to be monitored are States uploading data to SAFER and timeliness and accuracy of SAFER download to States. But we are also looking at the other two areas. Electronic screening—for example, addressing questions such as

- How many hours is the system available each month?

and for credentials administration, addressing questions such as

- How many vehicles are enrolled?

– that is, electronic screening, addressing questions like

- How many vehicles are enrolled?
- How many screening events?
- How many vehicles pulled in? and
- How many vehicles have been put OOS?

SLIDE 2—What Is Involved with Performance Monitoring?

Today we are going to focus on the operational level of performance monitoring. For any level of performance monitoring, there are a number of things involved. For outreach, identifying the customers and the stakeholders for the monitoring information. Next, identifying the scope. And requirements, what are the business needs of the customers and stakeholders? Next, we look at establishing performance measures, and by measures we mean something concrete or objective—something that can be measured, like the number of records transferred. That is opposed to metrics, which are abstract or subjective, like high-quality, timeliness or accuracy. So the concrete measures help approximate those less tangible metrics. Next we will look at

collecting performance data and, as part of that, we want to identify what tools are needed to collect the performance data. And finally, what are we going to do with the data after it is collected. We will look at reporting out and evaluating the data.

[41:01]

SLIDE 3—*Outreach*

Okay, so looking at each one of those six aspects one by one, for outreach, our primary customers for operational performance monitoring are the CVISN system architects and CVISN system users, and this can include a number of different types of users. It can be State agencies, motor carriers, law enforcement, for example, and for other stakeholders it could be Volpe and FMCSA, currently primary stakeholders.

SLIDE 4—*Scope*

For the scope, as I mentioned, we want to look at the performance of both federal and State CVISN systems, and we want to consider all three of the primary functional areas of core CVISN. And at some point, we will add Expanded CVISN, so we will identify processes that should be monitored and measured.

SLIDE 5—*Scope—Examples*

So let's look at some examples for scope. In the area of safety information sharing, some examples of the processes to be monitored are the transfer of data between two systems, data quality checks—for example, States uploading data to SAFER and downloading information to States.

Some characteristics you may look at are completeness of records being shared—are all required fields always provided in the records that are sent up? Correctness—do the fields contain the right information? And also be looking at timeliness and system availability.

SLIDE 6—*Scope—Examples*

For examples of scope, when we are looking at the electronic screening area, the processes we will look at are vehicle enrollment, roadside screening, and others. The characteristics include completeness, how many vehicles are enrolled, effectiveness, how many screening events, how many vehicles pre-cleared, how many vehicles called in and how many vehicles placed out of service, and availability. For example, how many hours per week is this station open?

SLIDE 7—*Scope—Examples*

In the third area, credentials administrations, you could look at any of these processes listed here related to registration, permitting, and tax return and filing. And again, look at characteristics like availability, how many hours are the systems available each month, and completeness. Do we have electronic submission for all forms? Do we have e-payment?

SLIDE 8—*Requirements*

Moving on to requirements. A major step in the process of gathering requirements occurred last March when FMCSA held the CVISN Deployment Workshop, and CVISN stakeholders participating in that meeting defined the 24-hour rules. To summarize that—it was agreed that CVISN stakeholders had a need for data to be available in a timely manner; that there should be requirements to address how frequently data should be sent from both sides—from the States and to the States. These rules were referred to as the 24-Hour Rules and they are listed here. Within 24 hours of the authoritative source deeming a record to be valid, the data should be transferred to SAFER. SAFER should transfer the data back within 24 hours, and new data within MCMIS should be transferred to SAFER in 24 hours.

[45:12]

SLIDE 9—*Establishing performance measures*

So that is the start of requirements. Again, there are other requirements that need to be defined. In establishing performance measures related to these requirements, we could come up with these measures:

- The number of records or the percent of records not transferred back to SAFER within the 24 hours that the authoritative source has deemed to be valid,
- The number or percent of records not transferred from SAFER within 24 hours, and
- The number or percent of new MCMIS records that are not transferred to SAFER within 24 hours.

Some of these measures are going to apply to the SAFER system, and States will have a responsibility in making sure that they transferred data to SAFER within 24 hours, as well.

SLIDE 10—*Establishing performance measures*

The Proactive Data Quality /Operational Issues focus group is the focus group that was spun off from the CVISN Architecture Configuration Control Board or ACCB, this focus group is chaired by Washington State, and they have drafted a document that is called, “CVISN and Proposed Operational Performance and Data Quality Measurements.” This document defines a number of measures related mostly to Safety Data Exchange, and it addresses timeliness, these 24-hour rules, and also addresses currency and accuracy. This document has been discussed in several meetings recently and it is available on the CVISN SharePoint site for further comments.

Additional performance measures will be defined by CVISN stakeholders in the other areas of core CVISN, electronic screening and credentials administration.

SLIDE 11—*Collecting performance data*

For collecting performance data—that involves monitoring processes and tracking problems.

Looking at tools:

- What tools does Volpe have? Our next presentation will be on SAFERMON, one of the tools that Volpe has and will be using for development.
- What other tools are needed on the federal side, and what tools do States have? We know from preparations for the workshop last year, Nebraska had a presentation on the monitoring tools that they use, and Washington has proposals for monitoring as discussed in their document.
- What other tools are needed by States?
- What other States have tools that they can share?
- Who should be involved in collection, monitoring?
- What resources are required?
- How often does the monitoring process happen?
- Monitoring could be a load on a system, so is this something that will be done continuously or would it be turned on and off periodically, because it is a drain on system resources?
- And is the monitoring process totally automated, or is a human analyst involved?

SLIDE 12—*Evaluation and reporting*

For evaluation and reporting:

- What processes need to be instituted to ensure that States' problems are tracked?
- What reports are needed in the three functional areas?

We want to make sure that there is a process to ensure that the States' problems are tracked and recorded according to the decisions that are made and action items assigned at the CVISN workshop last spring and other meetings like the ACCB or focus group meetings. And for reporting, we want to ensure that we are not just collecting data for the sake of collecting data.

- What do the stakeholders really need and what reports would be useful to them?

SLIDE 13—*Next Steps: Near Term (next 3 months)*

The next steps in the near term, which is the next few months, are to start with the focus group, including Volpe, and address the start that they have already made on the paper on operational performance monitoring. The focus group needs to meet regularly and report back to the ACCB regularly. They need a work plan that should include addressing other areas of CVISN besides safety data exchange. What monitoring is already in place or what could be put into place now, and what could be phased in over time? We also need to look at other standards and measures of

other FMCSA programs so we avoid duplication of efforts, and for example, involve program representatives from other FMCSA programs like SaDIP to ensure there is no overlap.

SLIDE 14—*Future Steps*

Finally, on my last slide, future steps to establish performance measures and develop monitoring plans, and then, to put those plans into practice, and provide tools as needed federal level and State level.

JULIE LANE:

Thank you, Sandy. Then we have our final speaker, Andrew Wilson of the Volpe Center.

[51:02]

PRESENTATION 4—TITLE SLIDE (1)—*SAFER Operational Monitoring—Current Capabilities and Proposed Enhancements*

SLIDE 2—*Overview*

ANDREW WILSON (VOLPE CENTER):

Hello. Basically, our approach here is to make sure that the monitoring of the SAFER system is providing sufficient information for the support root cause analysis of failures when they occur, and that we are compliant with what CFC is using at the Volpe center, called the IT Infrastructure Library Standards, that includes processes templates for service monitoring and such. Also, relating to what Sandy just presented, it is sufficient to meet service level obligations, both set by GSA and the CVISN ACCB, which adopted the 24-hour rule as the rule the CVISN ACCB. Currently, we're doing monitoring of the infrastructure and the application, and in the future, we would like to be monitoring the Oracle Streams Data Transfer process, to have an operational dashboard where the operations staff can see at a glance what the status of the system is, integrate the infrastructure application level and business process monitoring, and finally, provide automated test and restart capabilities.

SLIDE 3—*Current SAFER Operational Monitoring*

Right now, the operational monitoring that does occur in SAFER has two components. There is the infrastructure component, which is handled by the Infrastructure Group, and they monitor the network connectivity, database availability, server memory, CPU and disk usage, web server availability, and FTP server availability. Then there is the application level monitoring, which is done by the Operations Group led by Ken Mertz. There is a tool called SAFERMON that

- Scans the log files from input and output, as well as XML transactions, and

- Records the total number of new files, and the total number of new records, and the total number of files with error conditions, and
- Lists the files with error conditions.

SLIDE 4—*Future SAFER Operational Monitoring*

For future operational monitoring, the Oracle streams process that transfers data from MICMS to SAFER needs to be monitored. Also, we would like to have this operational dashboard and the automated test and restart capabilities, and then integrate all the different levels of monitoring.

SLIDE 5—*SAFERMON Proposed Enhancements: Oracle Streams Monitoring*

In terms of the Oracle streams monitoring, what we would like to do is basically, for each record that changes in MICMS, track

- Where it changes in the MICMS census audit trail, and
- When that record is accepted in the materialized view refresh in SAFER, at which point it is available to the SAFER website and can then be generated into the T0031 output files, and finally,
- The amount time that the record shows up in T0031 version one or version two subscription output file.

We also would like to create what is called a heartbeat table, which tests the functionality of the of the Oracle Streams process independently of the SAFER application, so if there is a failure at that level, it gets caught at that level and does not get confused with an application issue.

[55:19]

SLIDE 6—*SAFERMON Proposed Enhancements: Operations Dashboard*

The operations dashboard is basically reusing other software that is used to provide a similar service for the FAA at the Volpe Center, so basically, this is stuff that we don't have to reinvent. We would also like to integrate it with other monitoring tools, which, for the COMPASS program, FMCSA is using a tool called Hyperion, and we would like to have that be integrated with the rest of the SAFER monitoring. The high level dashboard view provides the ability to see the status of the system at a glance and also can be seen as a report card for making improvements to reliability, timeliness and data quality. Another component is to have application-specific checks and risk triggers, including input file counts, database table counts, and output file counts.

SLIDE 7—*Operations Dashboard: Example Dashboard Display*

What you're seeing here is an example of what the monitor operations dashboard might look like. Each one of these boxes represents a server, and each one of the smaller boxes in the box is representing a service that is hosted on the server. So, for example, if just one service was down on one server, you would see the one red box appear on the second box to the left—or on the second row you can see there is a whole box that is red. That would be if the server was down.

SLIDE 8—*Operations Dashboard: Example Key Explaining Color Scheme*

And this is just explaining the color scheme, where basically, green means everything is up. Red means it is down and requires action, and the light green means it is down because of some other things, which, for example, if one server that was down that all the other services depended on, it would be red so people would know to go to that server.

SLIDE 9—*Operations Dashboard Check Points*

This is just kind of a high level design concept here of how we would like to monitor the CVISN transactions. At the top, we would like to have a monitor that verifies that the counts all match from the different sources, and then, to have a monitor at each location for the data, for example, for the T0022, there would be some monitoring the input FTP folder, and then there would be a database monitor that is monitoring the database and an output monitor that is monitoring the output FTP folder.

SLIDE 10—*Operations Dashboard: Application Monitor View*

This is just an example of the application monitor view, where the application-specific things would be tracked—a typical thing to be tracked would be, if a particular file should be generated, and however many records were expected. This is just kind of summary here; we would like to take the best of breed approach here to leverage the existing SAFERMON, and leverage the other Volpe-created tools and harmonize with the tools used for COMPASS.

[59:27]

[END]