Meeting Notes

Change Management Board

March 13, 2018 – 1:30 to 3:30 p.m.

Version 0.1





Prepared for: Florida Department of Transportation Traffic Engineering and Operations Office Transportation Systems Management and Operations Program 650 Suwannee Street, M.S. 90 Tallahassee, Florida 32399-0450 (850) 410-5600

List of Acronyms and Abbreviations

C2C	Center-to-Center
CFX	Central Florida Expressway Authority
СМВ	Change Management Board
CO	Central Office
ConOps	Concept of Operations
СоТ	City of Tallahassee
D(number)	
DMS	Dynamic Message Sign
DTOE	District Traffic Operations Engineer
EM	Event Management
FDOT	Florida Department of Transportation
FHP	Florida Highway Patrol
FTE	Florida's Turnpike Enterprise
ITS	Intelligent Transportation Systems
IV&V	Independent Verification and Validation
MDX	Miami-Dade Expressway Authority
R-ICMS	Regional Integrated Corridor Management System
SSUG	SunGuide® Software Users Group
SwRI	Southwest Research Institute®
TERL	Traffic Engineering Research Laboratory
TSM&O	Transportation Systems Management and Operations

Florida Department of Transportation CHANGE MANAGEMENT BOARD MEETING NOTES Tuesday, March 13, 2018 1:30 to 3:30 P.M Rhyne Building, 330 Conference Room, Tallahassee, Florida

Attendees:

Bryan Homayouni, CFX	
John Hope, CFX	
Tucker Brown, SwRI	
Mark Dunthorn, CO	
Frances Ijeoma, CO	
Karthik Devarakonda, CO	
James Whitley, CO	
Jennifer Rich, CO	
Mark Mathes, D1	
Luis Ruiz, D1	
Justin Merritt, D1	
Robbie Brown, D1	
Vincent Lee, D1	
Pete Vega, D2	
Ryan Crist, D2	
Edwardo Gomez, D2	

Alex Valera, D2 Jason Summerfield, D2 Aven Morgan, D3 Mark Nallick. D3 John McFadden, CoT Daniel Smith, D4 Dee Mctague, D4 Dong Chen, D4 Neena Soans, IBI Tushar Patel, D5 Clay Packard, D5 Josh Sibley, D5 Jeremy Dilmore, D5 Nathan Mozeleski, D5 Shannon Waterson, D5 Alex Mirones, D6

Javier Rodriguez, D6 Mark Laird, D6 Rodney Carrero-Vila, D6 Don Avery, D6 Ramona Burke, D7 Jared Roso, D7 Charles Keasler, D7 Eric Gordin, FTE John Easterling, FTE Karla Smith, FTE Wang Lee, MDX

Purpose: The purpose of this meeting is to review and vote on statewide issues and requirements, and review footprint issues.

Welcome: CMB Chairman B. Homayouni opened the meeting at 1:30 p.m.

Call for Quorum and Review of Agenda: A quorum was established for this CMB meeting. B. Homayouni reviewed the meeting agenda there were seven agenda items and three are voting items.

Previous Meeting Recap and Action Item Review

First, did everyone receive the meeting minutes from the last meeting? Does anyone have any questions or concerns from the meeting minutes? We will review the previous meeting action items.

Action Items:

- Footprint 1685 older footprint, D6 issues integrating MDX links into travel times, we
 were trying to trouble shoot something that doesn't exist. We need to update the travel
 time document that is out there. It does not contain up to date information on how our
 travel times are calculated. Mark, correct me if I am wrong, but you are able to do what
 you need to from using C2C times and the footprint has been closed.
 - **Mark L.:** We want speed limits to be included because our understanding was that information would be used when there was not valid speed data. It is not

clear that it even works that way and the speed limit data is available in the C2C. So yes, this can be closed.

- Mark D.: This footprint has been closed.
- **Bryan:** We will also close this Action item and open one for updating the travel time document.
- Action Item update travel time document.
- 2. Add RWIS to SSUG Meeting The last I heard this had not been completed, we will leave this item open and have it added to a future SSUG meeting.
- 3. **ConOps for Executive Notifications** have been sent out for review. Did everyone receive it? Please provide feedback so we can move to the next step.
- 4. **Provide Dates for the next release of SunGuide** I believe that was sent out to the group and it will be discussed later in the slides. We can close it after this meeting.
- 5. Update CMB process document with the voting requirements section We did receive additional feedback and we made the changes and sent out the final document. Did anyone not receive the document? Hearing none, we welcome additional feedback regarding the document but for now this is an up to date and accurate reference.
- 6. **Architecture update process** still working on cost estimate and discussing an FPID number for the project. Mark do you have any other updates for this item?
 - **Mark D.:** No, that is the information I have also.
 - Bryan: This will remain open.
- 7. **Send Eric Gordin screen captures of the event headers** Screenshots were sent. Eric, is there anything on your end that needs following up on?
 - **Eric:** Everything is fine, I just wanted a screenshot to see the changes.
 - **Bryan:** This can be closed.
- 8. Send out the online vote for event headers this was completed and will be closed.
- 9. Send information to Derek on Roadway naming after receiving DTOE feedback -Did receive feedback from DTOEs. Tushar, are you waiting on anything on your end for this item?
 - **Tushar:** I don't think so but I will double check with Jeremy. This item was confirmed to be closed in follow up correspondence.
- 10. Reach out to Alan El-Urfali about the RWIS developmental specification Leaving open, follow up within the District to see if someone else can reach out to Alan about the specification since Chester will be out of the office.
 - Romona will email Vinny.

AGENDA ITEMS

SunGuide Software Update – Mark Dunthorn

Release of 7.1. – It has been delivered and is in the Statewide Shared, we are awaiting the final approval from Derek. 7.1. has been released in the sense that it is available for download. Developing training slides that will be available later this week.

District 2 installed 7.1. There were a few issues but nothing serious and all of them have been addressed.

Tucker: It went smoothly, if District 2 is online they can comment on anything important to other Districts.

Jason: The biggest issue had to do with the auto-merge feature, the travel time part of the message was not always triggering a DMS refresh. A lot of things that came up while SwRI was there were operator suggestions. They helped us mainly with the user interface. No questions about 7.1.

7.1.1. This is the first of the smaller releases to get more out there over the year with one large release included. We have two smaller releases this year 7.1.1. and 7.1.2. and a larger release 7.2. 7.1.1 we don't have an IV&V build yet, but we are expecting one later this week. 7.1.1. has 3808 lane-by-lane detector data on C2C, 2736 links on map enhancement which will give us better control of which links are visible, 3873 traffic signal malfunctions – new way to record those types of events, 3849 roadway type flag, and 3984 Bluetooth reads between all makes/models. We will be testing the Bluetooth reads with BlueMAC and Iteris. It will be an interesting deployment. We expect a CA build this week and to do a dry run later this week. Assuming everything goes well, we are thinking it will be out by early May (conservative estimate).

7.1.2 – The second of the small releases. Will include 3855 travel time destination in DMS message report, 2507 display coordinates vs actual coordinates which will get us more accurate device locations, we will be updating the CV protocol. We are looking into testing this and we need to find out what hardware we have available and what software versions they have. We are looking for a way to test this at the TERL. Then we have the 3881 toggles between multiple video streams in VOD. We are thinking it will be released in the August 2018 timeframe.

7.2.0 – The bigger release for this year.

3848 Change how roadways are handled – primary and secondary roadways and associate them together. being able to run a report for primary roadways and get secondary roadways as well. We also have 3860 planned events, 2963 case insensitivity, 1422 audit chronology, 3568 monitor and regulate DMS fonts and 2736 links on map (hover spread). These enhancements are scheduled and we are confident they will be included in this release. There are two large features that we would like in this release which are executive notifications and intersections. They will both be large changes and it may end up pushing the release out beyond February 2019. We will start with the 6 above and the executive notifications we will try to get into the February 2019 release.

Mark L.: Request for 3986 – sending messages to color and non-color signs to be included in 7.2.0.

Mark D.: Has this been brought up in the SSUG?

Mark L.: It was brought up a while ago but I am not sure.

Mark D.: I will get with Derek on that. Any other questions?

Mark L.: There was another recent one due to FHP changes, adding the VIN field for vehicles 4183. It is a new request from FHP.

Mark D.: We will look into both of them.

• Action Item: Look into adding 3986 and 4183 into the 7.2.0. release.

Intersections in SunGuide: Mark Dunthorn

District 2 request, we want a way to record events at intersections. Right now, you would have to open a separate event for each location (assuming you have a location), and you have multiple EM locations. We want a brand-new type of EM location which is an intersection. That

way it is only recorded at one location but you can record lane blockage in all directions. We would record all of that information and send it out to FL511. In a simpler way, it is a way to record complex geometries. We are looking for a way to pre-populate the EM location database by extracting the information from HERE. SwRI has done some analysis using Philips Highway in District 2 and it looked good. We were able to identify most of the signalized intersections. Assuming we can extract that data from HERE, we will be able to get that information into SunGuide without having to manually enter the intersections into SunGuide. We will be recording it in a lot of detail and then it will be sent to FL511 and DIVAS. The motorists would only see something a lot simpler from FL511. We have discussed a lot at the SSUG mtgs. **Mark L.:** Has it been coordinated with FLATIS?

Mark D.: Yes, they are aware but we haven't gotten into the details. They know it is coming. **Mark L.:** We will also want to use this with the bridge preemption.

Executive Notifications: ConOps is available for review and comment on the external SharePoint site, we have already received some comments.

There are two different directions the ConOps is going.

- Improving the automation and added more to the automation overtime and we have taken it as far as it can go. We want to propose a manual trigger. We are not tracking the number of fatalities in an event and for that reason we thought we would ask the operator to manually trigger the Executive notifications.
 - District 2 commented to add "greater than 5 fatalities" injury type to help automate it. We are discussing that possibility.
 - Another fatally type trigger was the FDOT employee/contractor and we decided it would be too difficult to automate.
 - Multi-vehicle crash with smoke involved we don't have the ability to record smoke as a contributing factor. The consensus from the SSUG meeting was that we didn't want to add smoke. District 2 had an idea to associate a visibility event to a crash and we can trigger an executive notification from that.

• Bottom line is that we will still have some triggers that will have to be done manually. **Mark L.:** The biggest concern for the manual trigger is it we only do it for extremely rare events, the likelihood of the operator remembering to do something is low. I think it is less likely to happen manually.

Mark D.: That is a concern that has come up and it is tricky place to draw the line. We have made improvements in this proposed enhancement and that doesn't have to be the end, we can continue automating as we learn more about the system.

One of the other issues that came up, was the requirement that we generate an Executive Notification for any bridge closure. We were thinking bridges overwater that are off the State Highway System would generate an Executive Notification. One concern is that an overpass on the freeway is considered a bridge. We would not typically send bridge closed for an over pass, we would send road closed. We were proposing we continue to send road closed to FL511 instead of bridge closed. We will have a bridge closed event type (new addition coming out of the ConOps) and use it for bridge over water being closed but do we need to send the bridge closed SAE code that or should we just say road closed?

Mark L.: Bridge closure is good when it comes to closures due to wind.

Mark D.: We haven't considered that as a use case here. We were thinking structural damage to a bridge causing the closure but certainly wind would work. The bridge closed event type would make sense in both cases. I also think the SAE code for bridge closed would also be appropriate for wind. I think with this case you would get a better FLATIS message. I think we will need both the new event type and the SAE code.

Bryan: Let's bring it up at the SSUG again so we can have a discussion.

• Action Item: Bring up bridge closures and executive notifications up at the SSUG meeting.

Mark D.: District 7 is proposing adding images to the executive notifications, Central Office wanted to see how the District feels about doing this. How does it impact the public records request? Derek wanted us to poll the Districts and get your feedback on if you are interested on having images on Executive Notifications.

Bryan: If any District or Agency would like more time to discuss we can send this out as an online voting item.

Jeremy: Would the generation of the images be automated or would it be something the operator would do?

Mark D.: This would be done by the Operator. Basically, the Operators would have the video on desktop open, they could right click and save a frame and associate that to an existing Executive Notification. It would be manual.

Pete: I am opposed to it because of the records retention issue. Let the minutes show that District 2 does not want this to happen. If we do images for this, we would have to do it for everything.

Mark L.: How would the Operators know that they would have to do this?

Mark D.: We talked about that and we were thinking that is we limit it to Executive Notifications OIT is already copied on those. So OIT could have the responsibility of maintaining those records. I hear the concern and that is why we wanted to bring it up to get opinions. I don't think this is needed for a vote but a poll.

Bryan: I think we should take this back to the SSUG for more discussion. Instead of the polling or voting right now.

• Action Item: Take the idea of adding images to the executive notifications to the SSUG meetings.

Truck Parking: Mark Dunthorn

Drivers tested for SENSIT and Sensys and on the Statewide Shared file. Derek will send an official notification. We are developing a driver for a third. We are already identifying new needs and we will be enhancing the drivers to include new features for truck parking.

SunGuide and ICMS Integration (VOTE) – Clay Packard

ConOps was sent out and I hope that you have had a chance to review it. Today we will go over the highlights. As an overview, this is similar to District 2's Signals in SunGuide. We found a couple of ways to take advantage of additional data inputs. We want to make it a computer decision accuracy via real-time analytics. We are seeing more real-time traffic data available including real-time turning movement counts with newer technologies we plan to deploy. We also know there is an online simulation capability that would give us real-time forecasting of outcomes for multiple signal timing scenarios. We scoped this project out to an external system, Regional Integrated Corridor Management System (R-ICM) that collects the data and will perform the analytics and simulation and it will coordinate the real-time agency approval as needed. It depends on the agencies that have jurisdiction over the signals and their preference on how their approval is obtained. We are talking about the changes needed in the SunGuide system to make this R-ICMS possible. We are going to utilize the event management functionality, and we will have SunGuide active the diversion route, so SunGuide will be taking the action.

Why R-ICMS? We can predict the measure of effectiveness for very different response plan actions for 30 minutes into the future real-time. With this we will be able to help quantify the benefits prior to making the change. It allows us and the computer system to compare the alternative scenarios so the computer can give us the best alternative to use. We can select the alternative that has the highest level of effectiveness. It can also tell us when we can return to normal operations.

Why SunGuide? We want to integrate with SunGuide because that's how we do operations. SunGuide already effectively manages traffic events and the response plans for those events. We can suggest an amendment to the response plan for SunGuide to then activate. SunGuide already manages and is integrated with traffic control devices, so we want to keep that architecture consistent. The R-ICMS is the most efficient approach to pass the recommendation to SunGuide. The R-ICMS will do incident detection and will collect SunGuide data and turning counts on the roadway then using that data, it will detect an incident. It will select a candidate of the response plans that include diversion routes and simulate those for 30 minutes forecasting the benefits and pick the best one and select the signal timing plan. It will also have a background process that helps with signal timing optimization and will look at how it can improve the signal timing itself.

There are a lot of users and stakeholders involved in this system. The full list is available in the slide deck.

ICMS work flow: detect event \rightarrow recommend a diversion route \rightarrow ICMS operator will review and initiate the agency approval. At that point, the recommendation will go out to all of the agencies who have jurisdiction along that diversion route. The plan is to have it available to them via a smartphone app. Once that approval is received from all agencies it will send the ICMS response plan recommendation to SunGuide.

SunGuide work flow: Operator alert that there is a recommendation response plan from the ICMS system \rightarrow Operator will then accept that recommendation as a SunGuide Event (create a new event or add to existing event) \rightarrow SunGuide event and response plan will have the diversion route with all of the signal changes as well as DMS and other response plan items \rightarrow it will go out to the traffic signal controller software. We are working with the signal vendors to get that protocol defined and worked out.

Detailed diversion route recommendation – during the design time, we are building repository of response plans for diversion routes and we will have a rules engine that map event attributes to response plans. When the incident occurs, we will have the rules engine and the pre-configured response plan available so that we can select the appropriate set of response plans for an active incident. We can take that set and perform the mesoscopic simulation so we can predict which ones would be the most effective.

SunGuide Software changes that are needed:

- Accept the incoming R-ICMS Response Plan Recommendation
- Then that will have to be presented to the operator.
- Incorporate that into the EM response plan (similar to District 2 signals in SunGuide)
- Interface with traffic signal ATMS and enhance the protocol with ATMS.now
- Return back to normal operations
- Status and performance monitoring and reporting

Cost: \$105 k **Schedule:** included in 7.2 (February 2019)

Any Questions?

Mark L.: What additional training do you think the SunGuide operator would need to handle this properly?

Clay: The R-ICMS training which is covered in the R-ICMS contract. The SunGuide workflow to cover ICMS would also need to be covered in training.

Bryan: R-ICMS will that be available to other Districts?

Clay: Yes, the long-term plan is to make it available to the other Districts.

Bryan: Do you have a schedule for that?

Clay: We have a 2-year development schedule for it but we can work with Derek to get it available for the rest of the state after its developed.

Bryan: So, you are saying it is two years away from being developed for District 5 use and then from there it could be rolled out to the rest of the state? Does it make sense to have it in the 7.2 release if the R-ICMS is not even going to be available?

Clay: Yes, it would be helpful to have SunGuide able to integrate with R-ICMS because after those two years we want it ready to operate.

Tucker: If it is not pushed into this next major release it will be looking like mid-late 2020 which might be too late.

Bryan: Mark, from your perspective, fitting it into the 7.2 was not an issue, correct?

Mark: That is what we are looking at right now. There are still some design discussions, we are a little concerned about complexity but it could work. We just need to look at the details.

Bryan: I want all the voters to know the \$105k is not a hard number it might fluctuate based on the complexity. Any other questions? Hearing none let's vote.

Vote: D1: yes, D2: yes, D3: yes, D4: yes, D5: yes, D6: yes, D7: yes, FTE: yes, CO (Mark Dunthorn): yes, MDX: yes, and CFX: yes. Measure passes and will be incorporated into 7.2.

Action item: Clay to get a schedule for R-ICMS deployment to be shared with everyone.

RPG to Remove Error and Out of Service DMS (VOTE) – Tucker Brown

This topic has been discussed at the SSUG meetings. The goal to get faster activation and better visibility of the chronology that didn't post due to Error or Out of Service. The proposal for this is to leave them in the response plan but allow the EM to post them as normal. Change would be the chronology entry, there is going to be a new one that indicates the sign was in error or out of service and not posted. You will be able to quickly look at the chronology and

know immediately that while it was deployed as part of the response plan, the message could not have gone up due to the error state.

Estimated Cost: \$1.5k, just updating chronology. **SunGuide Release:** 7.1.2 minor release; timeframe August.

Vote: D1: yes, D2: yes, D3: yes, D4: yes, D5: yes, D6: yes, D7: yes, FTE: yes, CO (Mark Dunthorn): yes, MDX: yes, and CFX: yes. Measure passes and enhancement will be in 7.1.2.

Cloned Disable Vehicle Created as Abandoned Vehicle (VOTE) – Tucker Brown

The initial request was to have the disabled vehicle show up as a different event type. The goal is to change event type of a cloned event before creating the new event. Proposed changes:

- Allow a configuration in the config file that allows the user to set up event type transition for cloned events.
- Create a dialog pop up when cloning an event that would allow you to change the event type to something else.

One part that I want your feedback on is instead of creating a new dialog, we could repurpose the "add new event" dialog which would contain the event type, event status, agency/contact and location. All the fields would pop up and be pre-configured with exactly what the pre-defined events are or give you the option to change or set those things automatically. Something that would be good is a direction field and we could change the location right at the start as opposed to after the event.

It gives more options on what types of things can be changed before cloning or immediately cloning it.

Cost Estimate: \$6k Scheduled Release: 7.1.2

Vote: yes, D3: yes, D4: yes, D5: yes, D6: yes, D7: yes, FTE: yes, CO (Mark Dunthorn): yes, MDX: yes, and CFX: yes. Measure passes and the enhancement will be in release 7.1.2.

Update Probe Detector Specifications – James Whitley

This pertains to unifying the Bluetooth traffic data. Want to see if we can modify Specification 660 vehicle detection specification to have the vendors provide the raw MAC address. We determined that statewide there are so many different Bluetooth silos and data. People are not able to share data due to the different types of equipment. 660-2.1.2.5.3 this section is small and only having 2 sentences. Specification 660-2.1.2.5.1 is configuration and management for AVI which applies to all AVI not just Bluetooth. Specification 660-2.1.1.3 is the probe data detection systems says, "the identifier is then transmitted to a central site and then matched". Not much is required for probe data detection systems, there is not a lot in Specification 660 and is vague when discussing performance requirements. The Transportation Data Analytics Office needs to be able to match the unique identifiers Statewide. Which would help on a different number of reasons. We are trying to create a layered data set on our sites, one would be Bluetooth, it would be used by multiple offices in the Department.

We can use travel time algorithm that can be used to tag the matches. Some vendors provide tags that are encrypted and truncated. Vendors encrypt and truncate the information differently and the Districts can't compare the data that's collected. SunGuide Software needs are the tag needs to be either full MAC address or the lower three bytes of the MAC address. SunGuide will has the lower three bytes using 64bit MD5 hash before storing the data.

Bryan: Those are enhancements that were previously voted through so they are happening. James: If we purchase a service for Bluetooth information, is the data stored on cloud servers considered public record?

Pete: Have we ran this through our legal office?

James: We are in the process.

Clay: Have we done any analysis at the TERL of what is passed through the Bluetooth devices?

James: Not yet, we have two vendors we are trying out now, we have not done any analysis on the devices that are at TERL.

Clay: That was part of the CMB item that was passed, so it should be happening from the SunGuide team.

Bryan: Would the data be handled the same way through the two enhancements? **James:** Correct, information would be consistent no matter what District collected the data.

Clay: I think the specification change would be helpful.

James: Need to focus on changing the specification first and we need to make sure that it is the correct specification. We want the vendors to be compliant with the change in the specification. **Pete:** Talk to Derek and have it brought up in the ITS Working Group meeting, have a

roundtable discussion. I want to see what impact it would have to our program.

Action Item: Add Bluetooth specifications 660-2 update to ITS Working Group Meeting; Derek Vollmer

Open Discussion – Bryan Homayouni

Bryan: Coordination with a vendor and use of FLIR application doing a pilot project. We have been talking to FLIR as well and FLIR has a thermal detection camera that can detect Wrong Way driving. We have tested it out on the mainline of 417 and it has been operating effectively and have not received any false alerts. I want to get feedback on if anyone else is using or testing this device. Currently, it only sends an email and a thermal image of the vehicle and event – it is not best to be used by the operators or first responders it would not be helpful. We want to consider possibly getting a driver for the third device.

Pete: What model number? Send it to us, we have FLIR cameras on 75 and have continued issues with rebooting.

Bryan: I will get that model number and send it over to you. District 6 do you have any feedback on the ramp metering?

Javier: We are working with the vendor to install a FLIR camera at one of our locations here and we will be developing a driver for that device within the next couple of weeks. Proof of concept went well with FIU, and other than performance measures we want to see what day-today operations and if they are good we will replace our system with the FLIR. We will share the results with the rest of the team. **Bryan:** In talking to Derek, he said it wouldn't be too hard to continue to develop the driver further to handle Wrong Way driving. If there are any other agencies working with this product for wrong way application please reach out to me.

Daniel Smith: Executive Notifications have mile posts and everything we do in District 4 has mile marker. Do you know if that was intentional to have mile post in that notification?

Mark Dunthorn: That has been brought up before, and I will work on getting a definitive answer on why that is.

Review Action Items

- Chester Chandler / Romona Burke: (still open from previous meeting) Reach out to Alan EI-Urfali about the RWIS developmental specification.
- Mark Dunthorn: Update Travel Time Document to reflect how travel times are currently handled within SunGuide
- Derek Vollmer: Add RWIS to the SSUG meetings
- Derek Vollmer: Keep Districts in the loop on the Architecture update process
- Derek Vollmer: Look into adding 3986 and 4183 into the 7.2.0. release.
- Derek Vollmer: Bring up bridge closures and executive notifications up at the SSUG meeting.
 - Derek Vollmer: Take the idea of adding images to the executive notifications to the SSUG meetings. *Follow up conversations have led to the development of a polling item which will be sent for TSM&O review and feedback.
- Clay Packard: To get a schedule for R-ICMS deployment to be shared with everyone.
- Derek Vollmer: Add Bluetooth (probe vehicle) specifications 660-2 update to ITS Working Group Meeting

Tushar Patel: Just a heads-up Jeremy is working on a ConOps for highway rail and parking management system so it will be coming soon.

Meeting adjourned at 3:22 p.m.