

## Meeting Notes

# Change Management Board

March 5, 2013 – 1:30 to 4:30 p.m.

**Draft - Version 0.1**



Prepared for:  
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### List of Acronyms

C2C	Center-to-Center
CMB	Change Management Board
CO	Central Office
DMS	Dynamic Message Sign
FDOT	Florida Department of Transportation
FHP	Florida Highway Patrol
FL511	Florida Advanced Traveler Information System
FTE	Florida Turnpike Enterprise
GUI	Graphical User Interface
HD	High Definition
ITS	Intelligent Transportation Systems
IV&V	Independent Verification and Validation
MDX	Miami-Dade Expressway Authority
NTCIP	National Transportation Communications for ITS Protocol
OIS	Office of Information Systems
OOCEA	Orlando-Orange County Expressway Authority
RITIS	Regional Integrated Transportation Information System
SAA	Software Administration Application
SwRI	Southwest Research Institute
TERL	Traffic Engineering Research Laboratory
TMC	Transportation Management Center
TxDOT	Texas Department of Transportation
VAS	Video Aggregation System
WAN	Wide Area Network
WWD	Wrong-Way Driver

**Florida Department of Transportation**  
**CHANGE MANAGEMENT BOARD MEETING NOTES**  
**Tuesday, March 5, 2013**  
**1:30 P.M. to 4:30 P.M**  
**Rhyne Building, Room 330 Tallahassee, Florida**

**Attendees:**

Aelon Suskey, CO/Atkins	Ryan Crist, D2/Metric	Jarod Roso, D7/Lucent
Arun Krishnamurthy, CO	Cliff Johnson, D3	Matt Moletto, D7/Lucent
Clay Packard, CO/Atkins	Dee MacTague, D4/AECOM	Terry Hensley, D7
David Chang, CO/Atkins	Dong Chen, D4	Kris Milster, FHWA
Frank Deasy, CO/Telvent	Jeremy Dilmore, D5	Eric Gordin, FTE
Gene Glotzbach, CO	Nathan Ruckert, D5	Ivan Del Campo, MDX
Randy Pierce, CO	Alejandro Lopez, D6	Wang Lee, MDX
Chris Birozak, D1	Alex Motta, D6	Corey Quinn, OOCEA
Scott Robbins, D1/HNTB	Javier Rodriguez, D6	Jessica Baker, OOCEA/MCG
Tom Watts, D1	Joe Snyder, D6/AECOM	John Hope, OOCEA/Atkins
Vincent Lee, D1/Lucent	Mark Laird, D6/AECOM	Robert Heller, SwRI
Craig Carnes, D2/Metric	Cathie McKenzie, D7/Gannett	Tucker Brown, SwRI
Donna Danson, D2	Charlie Keeter, D7/HNTB	
Jason Summerfield, D2/Metric	David Howell, D7/HNTB	

**Purpose:** The purpose of this meeting was to review and vote on statewide issues and requirements, and review footprints issues.

**Welcome and Call for Quorum:** Change Management Board (CMB) Chairman Javier Rodriguez opened the meeting at 1:35 p.m. A quorum was established. He briefly introduced the objectives of the meeting.

**Previous Meeting Recap and Action Item Review**

- *Central Office (CO) to follow up on highway advisory radio vendor. Vendor needed to talk to management and CO is still waiting for response.*
- *CO to evaluate the 2,000 remaining alerts. Atkins finalized document on remaining alerts and A. Krishnamurthy will forward results.*
- *CO to continue research on PostgreSQL and cloud computing. Research is still ongoing, possibly a presentation in next Change Management Board (CMB) meeting on research.*
- *CO to further investigate SunGuide® software installer improvement. CO receiving good comments from all Districts regarding installer improvement.*
- *CO to further develop the concept/solution to the multiple agency Road Ranger coordination. CO is working with Orlando-Orange County Expressway Authority (OOCEA) and hopes to make progress in the upcoming months.*

- CO to provide list of functional report changes. C. Packard coordinated with M. Laird to satisfy D6's need regarding functional report changes.
- Southwest Research Institute (SwRI) to help Districts send up historical event and gap detector data to the Regional Integrated Transportation Information System (RITIS). All Districts have provided historical and traffic data to RITIS.
- SwRI to look into hot fix for FP 1559 for 5.1.1. 1559 was repaired. It was actually 1591 that needed to be addressed (bulk updates for automated vehicle location Road Ranger).
- CO to provide P. Vega with two BlueTOAD® plugins. CO provided a plugin and D2 is in the process of getting it configured.
- CO to coordinate a concept discussion for a low visibility warning system. D2 is deploying devices on I-75 and D1 is deploying on I-4. A. Krishnamurthy asked SwRI for a rough estimate of costs, but no formal concept document as of yet. D2 system will work with the current SunGuide software release. D1 concepts are unique and may need to make modifications to SunGuide software to accommodate and will coordinate at a later date.

## **AGENDA ITEMS**

### **ITS WAN Update**

F. Deasy presented the most recent work conducted by their team. D1 and D7 have established connectivity for data and UniCast video and are still working with MultiCast video. In D3, big transition getting fiber optic connections made. The City of Tallahassee is working on moving into their new transportation management center (TMC). There's still work to do in Pompano; there's no final schedule with Florida's Turnpike Enterprise (FTE), but will work with J. Easterling to restart the effort. E. Gordin stated fiber outage has been repaired. Florida Highway Patrol (FHP) computer-aided dispatch is available and so far, no issues. He noted there is still a need to focus on MultiCast readdressing. D4 has completed readdressing, and D5 and D6 have committed to readdressing and are in the process. No status for other Districts at this time. Video aggregation system (VAS) can then receive MultiCast video without the need for further re-addressing. Regarding Florida's advanced traveler information system (FL511) and VAS, dedicated circuits have been replaced with intelligent transportation systems (ITS) wide area network (WAN) connectivity. D2 stated as part of the SR 23 project to connect FTE and central Florida to SR 23, there is a preliminary schedule to begin fiber work in September 2013 through St. John's County; that would connect D2 to D5's fiber at US 1. F. Deasy asked when the project would be completed and D2 stated within a year.

R. Pierce stated they have two ground tracking stations for the GOES East Weather Satellites, one in Lake City and one at the Traffic Engineering Research Laboratory (TERL). The 22 bridges currently being captured by those stations will start into the next phase with Microcom coming in and provisioning the software to get that out on the ITS WAN. R. Pierce will keep A. Krishnamurthy updated as things progress. Stations are in acceptance phase and working. We are seeing all 22 bridges and all Districts will be able to view the data through the ITS network.

### **Release 6.0 Schedule**

A. Krishnamurthy introduced slides and talked about SunGuide software release 6.0 and what to do to prepare for release. Currently, SunGuide software is only compatible with Oracle, but with this change it will be compatible with both Oracle and Microsoft SQL server. With numeric identifiers, the database becomes more flexible. Color dynamic message sign (DMS) work will also be included in the release. Another integral part is the scheduling feature, which allows one to schedule travel times and cameras. Multiple footprints will be resolved. The release will be available around June 25, 2013. The software development and dry run are scheduled for April 19, 2013. Factory acceptance testing will be conducted on April 22-25, 2013 in San Antonio, Texas. Independent verification and validation (IV&V) will be from May 13 to June 21, 2013. Both software events are open to all Districts. M. Laird asked if the test suites for IV&V will serve as basis for future regression test suites. A. Krishnamurthy stated yes and noted the documents are available on the web site. The factory acceptance test will take place during ITS America. A. Krishnamurthy stated if anyone has a conflict, please let him know and someone could possibly send a representative in their place. If one does plan on purchasing SQL server, it is highly recommended to be purchased before the end of June so that it can run SunGuide with SQL server for a few months prior to September 30, when the Oracle support agreements for most Districts expire. He said he will need advance notice for those not planning on using Oracle in order for the licenses to be transitioned to the Office of Information Systems (OIS) or other departments. Districts should coordinate with A. Krishnamurthy if they plan on not using Oracle and moving to SQL server. Any Districts concerned about SQL server capability should note there will be a demo by Microsoft on March 19, 2013. T Hensley asked where the demo would be held. A. Krishnamurthy stated it would be a GoToMeeting invitation. J. Rodriguez asked if SQL license purchases would go through CO. A. Krishnamurthy said he will check on getting a discount for a large quantity of SQL server licenses and talk to Microsoft. He noted that he's been working with OIS to see if they can find use for the Oracle licenses and transition those licenses not being used. A. Krishnamurthy asked that everyone please coordinate with him on Oracle licenses. T. Brown asked if he will get a list of the actual licensing requirements so everyone is on the same page and get the final word out to the Districts. C. Packard stated we are working with Districts to describe our operating environment and find out from Microsoft how many licenses we will need. A. Krishnamurthy stated that all Districts need to determine how many licenses they need. If unsure, determine deployment configuration and he will help figure it out. A. Krishnamurthy stated that through an OIS enterprise agreement, the cost is \$15,360 for two cores of SQL licenses with three years of support. T. Hensley asked when Oracle was last renewed and A. Krishnamurthy stated it was purchased in September. J. Rodriguez asked if the system was supported by both databases and A. Krishnamurthy stated that was correct. Oracle support ends in September and he stated the importance of getting SunGuide software on SQL server and run Oracle as a backup. A. Krishnamurthy asked if anyone was interested in PostgreSQL. He stated that PostgreSQL is free and functionally equivalent to Oracle and SQL server. A lot of systems use it, such as RITIS. N. Rucker asked if PostgreSQL would work with SunGuide software 6.0 and A. Krishnamurthy stated that when 6.0 comes out, it wouldn't be an option. After 6.0 is released, he would need to see if modifications are needed before it's compatible.

### **Architecture Update/ D5**

J. Dilmore stated there are several projects that have large impacts to ITS: Sunrail, Parkway, and I-4; additionally, the rail connection between D5 and D6. J. Dilmore asked how we are

going to share data. J. Dilmore stated he has seen an explosion of local area projects in the past year and a half within the District. He looked at stakeholder inventory to see what needs to be modified. He suggested a review with local agencies and to require architecture updates for each project. For instance, the City of Orlando has parking management they are seeking funds for that need to be reflected in our architecture. He also stated looking at consultant resources, we don't want to fall into a situation of major changes in data flow. Older projects to be retired within our system are still showing up in architecture; they were removed offline, but are still in the architecture. The connections to local agencies made outside of projects were missing, such as Flagler County/City of Palm Coast. More recent projects missing were I-4 Ultimate/I-4 Ultimate extensions. There were some projects where data was duplicated such as Lynx, Florida Department of Transportation (FDOT) /Lynx. Project responsibilities have shifted such as Sunrail. There were connections shown that we weren't aware of and many connections noted in architecture as being in place were not found. The connection was not intended to be in place. There was a need for training; project managers are not familiar with D5 architecture and how to utilize it and local agencies depend on our project managers for guidance. So, there needs to be training within D5 and also local agencies. Several changes proposed; very few are from new deployments. We need to update current configurations and those in project development and environment. There will be more to come in terms of details as we work with local agencies and work on data flow continues. A process needs to be created for project deployment (LAP and DOT) as well as in-house work to update the architecture regularly.

A. Krishnamurthy stated he thinks what J. Dilmore said is that we want to see whether it's a state or federal project, and would like that ITS architecture be reviewed and updated if needed. For federal projects, it is mandatory. For state projects we don't have a policy that states it is mandatory. If ITS architecture is not up to date, one cannot check on federal compliance. Make sure ITS architecture is constantly reviewed and make sure you are consistent with the architecture. It's important to look at architecture regularly and make appropriate updates if needed. A Krishnamurthy would like to schedule meetings with each District to go through its architecture and to ensure it's up to date and modifications are made if needed. CO is preparing a document to address ITS architecture/systems engineering procedures, what agencies are doing as well as their roles. K. Milster stated that from a national perspective, we're doing preliminary surveys and hope to get into assessments as process moves along.

### **SunGuide Software and Lonestar**

A. Krishnamurthy stated the idea is to make SunGuide software and Lonestar more alike than different; to customize software to meet our needs. There is a general need to make the two software identical. It is common practice in the industry is to share software so updates go in faster and any issues get resolved by multiple parties. The key reason is to be able to develop and support software at a lower cost. The two states have similar needs and there is no reason to have two different softwares if the starting point was the same. If you have the same software, it will reduce developmental costs. Both states would tackle issues and issue resolution would be split between the states. We are spending \$125,000 to use the Texas Department of Transportation's (TxDOT) version of enhanced user permissions. We spent \$300,000 for SQL server that TxDOT already had and plan to spend \$500,000 to move Admin Editor into SunGuide software. How to harmonize the two softwares; we want to take low level software and try to harmonize those pieces of software first and then tackle subsystems such as

DMS, closed-circuit television cameras, and transportation sensor subsystem. FDOT and TxDOT are reviewing each other's software to gain a better understanding. We can start the shared services first if approved by CMB today. What is the impact to the state? No impact to us, any functional changes and enhancements go through CMB and will have to be agreed upon at the state level. The cost of FDOT's annual software development expense is \$0.8 million and TxDOT's is \$1 million. If money is spent to integrate, it will still make a good cost-benefit ratio. J. Rodriguez stated it definitely makes sense. J. Baker really likes the idea as well and asked if there are any component differences between our system and theirs so we can review and see the benefits/drawbacks. A Krishnamurthy said Atkins is finalizing a document and integrating the software will allow us to take the best of both. The document talks about major differences and several functionalities. J. Dilmore asked the cost of this effort and if Texas is sharing the cost. A. Krishnamurthy said the cost will be equally split. CO does not have a cost estimate at this time and will tackle it as a phased approach. We will try to merge with the enhancements/features of TxDOT's software. When looking at the amount of money both states spend annually from a cost benefit standpoint, the integration makes a lot of sense. J. Dilmore asked what the CMB is approving today. We want to harmonize low-level software and tackle subsystems as well. J. Dilmore said we can schedule and establish a budget for this low-level harmonization, but do we have a ball park of how much the software will cost. A. Krishnamurthy said he will work on numbers and get back to the Districts. T. Hensley asked has there been any effort to look at the process to ensure doing this doesn't delay the projects because, essentially, you will be going to two CMBs, one here and one in Texas. A. Krishnamurthy stated it was discussed briefly and because we are doing a modification, we'll need to talk to both states. He said given that we're motivated, we will work through the process soon so that the project is not delayed. D2 asked, with SwRI currently being the developer and maintainer of software for both agencies, what would happen if the contract was not renewed; how would that affect the new software. A. Krishnamurthy does not believe it would be affected. FDOT wanted to be vendor neutral. FDOT owns the software so it can be provided to another vendor if need be. J. Dilmore asked what kind of percentage of annual expenses will be used toward this effort. A. Krishnamurthy stated CO will make sure all District enhancements are met and that project-specific needs are accommodated. R. Heller stated the CMB has talked about changing the permissions model on devices moving forward, a single user may have full access to one set of DMSs, but read-only access to another set of DMSs. That model is already supported by the TxDOT Software Administration Application (SAA). One of the things we have talked about is moving over the SAA application; it would almost be free if the two software were same. J. Rodriguez said there is interest from Districts, but they want to see cost estimates before making decisions.

### **Video on Desktop**

C. Packard showed the video on desktop component and demonstrated the software. C. Packard noted that with the software, the user is able to launch multiple windows from the camera icon. The user can also drag and drop cameras on their window. There is a lot of flexibility in how windows are arranged. All functionality the operator would need is built right into video on desktop. C. Packard stated he is really excited about it and thinks SwRI did a great job building the software. J. Rodriguez asked if it can support mpeg 4 and mpeg 2 videos with no problem. C. Packard stated it's about as flexible as any decoder we have and will do mpeg 4, mpeg 2, H.264, and all kinds of streams. J. Summerfield stated they put it on their test system

and it's handled all of their active cameras and anything they have basically thrown at it, including the H.264 coming straight off a Bosch camera and all of our mpeg 2 encoders. A. Krishnamurthy stated the software is easier to use. The software enables the user to view everything in one window instead of opening up several at a time.

### **Traffic Signals**

A. Krishnamurthy said SwRI has done an internal research project on integrating traffic control systems with SunGuide software to help with incident management. A. Krishnamurthy stated D2 is planning on using it. T. Brown stated current advanced traffic management systems have the traffic signals built in. In most installations, if you use traffic signal systems, there is vendor master software communicating to the controllers directly. Most of the time it is National Transportation Communications for ITS Protocol (NTCIP) 1202, which is the master to signal or 1210, which is the master software to another master software. SwRI first considered implementing a NTCIP driver that would do 1202 directly to signal controllers, but the driver would have been costly. The SwRI internal research project uses a new interface or a new traffic control subsystem that could be used across multiple vendors. The changes to operator map are the icons. All of the information from the signal controllers in SunGuide software would be coming through a web service interface. Users would still do all configuration and plans with the ability to retrieve and display in SunGuide software. T. Brown listed the available timing plans, affected controllers, and plan descriptions. SwRI has a custom vendor master software that communicates NTCIP directly to the controller, bypassing the vendor master. T. Brown showed screen shots coming from vendor master system and said he is still waiting on the Naztec interface to be completed. A. Krishnamurthy asked D2 if they know when they will be integrating this with signal system. D2 stated it depends on Naztec's schedule. J Hope asked if there is any plan to integrate operator control over signals when managing certain traffic events into the response plan. SwRI said it would not be too difficult, but would require the person doing the response plan to have explicit permission to assess a traffic signal plan. SwRI did not have the time or money to complete the internal research. This is a basic proof of concept ability to make these changes and expand from there. A. Krishnamurthy stated it would become part of SunGuide software and added to the next release, and the Districts should let him know if they are planning on using it.

### **Wrong Way Detection**

A. Krishnamurthy stated per a request from Secretary Prasad, CO formed a task team to determine actions the state would take to counter wrong-way driving events. The scope of this effort included: conducting a literature review of existing wrong-way driver (WWD) studies in the nation, evaluating WWD vendor products, reviewing FDOT plans package, improving WWD plans for future projects, enhancing SunGuide software to include response for WWD events, and conducting field test with FTE. There is a comprehensive effort underway for tackling WWD issues. Fatalities are very few with WWD events, but they are far more severe. The fatality rate is 12 times higher than other crashes due to head-on collisions. Some characteristics include impairment and tendency for late night driving. A. Krishnamurthy presented statistics for WWD from 2009-2011. It is possible to have more than one fatality associated with a crash. Pensacola implemented a WWD system on one of their bridges, which includes a few signs with beacons and a radar detector. The literature reviewed includes a WWD report published recently by the National Transportation Safety Board and reports from Texas as they are active in WWD

detection with ITS technologies. OOCEA is currently conducting research with the University of Central Florida. The TERL is currently evaluating products, such as the Wavetronix high definition (HD) device, which detects wrong-way vehicles with the purchase of the Click 512 module. The ramp offering consists of a blank out sign or static sign with event driven beacon actuation. The vendors include: Tapco, Information Display, and Unipart Dorman. The team is looking at traditional and innovative signing and pavement marking techniques as well as the *Manual on Uniform Traffic Control Devices* recommended signage, such as wrong way or one way signs. Others include pavement markings such as using through lane arrow, retro-reflective raised pavement markers for wrong way, and use of a stop bar where permissible. Interchange types will have to be examined. Full cloverleaf interchanges typically have the least WWD events, whereas the Partial interchanges typically have twice the possibility of WWD events. Some geometric modifications will be looked at including raised curb medians for partial interchanges, use of channelized medians or islands, separate on and off ramps, and use straight arrow instead of round ball on traffic signals. Innovative signage on ramps would include static signs with flashing beacons, flashing beacons that are triggered by a WWD event, or a blank out sign that is triggered by a WWD event. Some ITS solutions for WWD would be to use Wavetronix HD detectors on freeways. By enabling detectors, wrong-way events would automatically be posted on DMSs and law enforcement would be notified of wrong-way events as well. Another ITS solution is to identify cost-effective solutions for deployment on freeways and to deploy ITS on ramps to detect and notify TMC and law enforcement officers. Some possibilities for future incorporation into SunGuide software are modifications to SunGuide software, automated response on DMSs, notification to law enforcement, email dissemination to preconfigured list, launch the video on the computer screen, and integration with connected vehicle technology. Regarding field demo/testing at FTE, CO is working with J. Easterling to determine locations for WWD field testing as well as the Safety Office to map WWD prone areas on the Turnpike. C. Quinn noted the expressway is examining the legal perspective to ensure that if the system somehow fails and there's an incident, there are no legal ramifications from said incident. They are also surveying first responders concluding that WWD events appear to happen more frequently than first realized. He also said they are looking into how to document from an operator's standpoint in SunGuide software and search data. C. Quinn said he will share results when the survey is concluded.

### **Construction Events in SunGuide and 511**

C. Packard stated there needs to be a way to send construction events to FL511 for an affected area, not a single point location. D2 also suggested applying the same concept to special events, bridge work, visibility, weather, or flooding. C. Packard showed the current event congestion fields and described the proposed change. He noted it would be a small change to the user interface. It would be a label only change, no change to user controls. Congestion would now be labeled "affected area" and would apply to the following event types: construction, special event, bridge work, visibility, weather, and flooding. C. Packard stated there would be no change to protocols or schemas. Currently, the event's location is sent as the primary location in center-to-center (C2C) data. This enhancement would use the affected area's head as the primary location in the C2C. The tail will continue to be used as the secondary location. Operators will need to be aware of the change and set the head and tail of the affected area accordingly for these event types and publish them to FL511. Two requirements necessary for construction events are the graphical user interface (GUI) and C2C. As previously mentioned,

the user will have the ability to set the head and tail of the affected area and once the affected area is selected, the user has the ability to set the head and tail of the event. The head of the event shall be sent as the primary location and the tail as the secondary location. J. Snyder asked if this fix would prevent them from putting congestion events in their roadway events. C Packard said you should still be able to because congestion is handled by Society of Automotive Engineers codes and the tail would still go through as the secondary location. J. Snyder asked if it automatically switched to an area based on event type and C. Packard stated, yes it is automatic. A. Krishnamurthy asked if you can move an event, location, and affected area and C. Packard stated you can move all three.

### **Priority Items by District**

D1- none

D2- completing the Naztec work

D3- none

D4- none

D5- N. Rucker asked opinions on incident detection software and if Districts were using anything different. A. Krishnamurthy stated most of the state uses the FHP data. He said we also have Citilog, which processes the camera feeds. N. Rucker stated they stopped service on Citilog.

N. Rucker stated many local agencies are trying to get a version of SunGuide software. A. Krishnamurthy said there is talk of putting SunGuide software on the Cloud; it is currently on multiple servers. The purpose is to try to reduce the upfront cost to local agencies who would like to use the software; the Cloud is a possible solution in that multiple servers don't have to be deployed. Having a central SunGuide software deployment would help reduce costs.

D6- none

D7- the video aggregation servers installed do not have tags on them. G. Glotzbach said he will address the issue.

FTE- look forward to working with A. Krishnamurthy on WWD.

Miami-Dade Expressway Authority (MDX) - schedule color DMS software

OOCEA - J. Baker said there was a project that is requiring them to add multiple devices in Admin Editor. J. Baker had two recommendations: when adding roadway sensors or cameras, it's done at a high volume and should be an integrated as part of the software system instead of relying on a third party module. . R. Heller stated it's an issue of moving configuration of devices out of the Admin Editor and back in the GUI. He stated TxDOT already does this and it is part of the GUI update. He said, for example, refer to the connected vehicle GUIs.

It would also be great to pull the reporting side of SunGuide software to connect to a secondary database. Move reporting directly to the secondary would help system resources. N. Rucker asked if running reports would cause it to slow down or miss information from primary. J. Baker stated they have Dataguard, which synchronizes data and it may consume resources, but running reports off this system would not interrupt synchronization. Run on the primary system for SunGuide operations and run a separate system for reports.

### **Review Action Items**

- Continue working on outstanding action items from November 2012 meeting.
- Districts to provide deployment configuration for number of SQL server licenses needed.
- CO will be conducting meetings with the Districts to identify any needed changes and also any training necessary to support the Districts with the ITS architecture.
- CO to provide cost estimate for proposed low-level SunGuide software/Lonestar harmonization.
- G. Glotzbach to coordinate inventory / NH Tags for the FL511 server infrastructure in D7.

Meeting adjourned 4:20 p.m.