

*FDOT Change Management Board Teleconference Notes
Thursday, November 2, 2006 — 8:00 a.m. – 11:30 a.m.*

DOCUMENT CONTROL PANEL		
File Name:	<i>Florida Department of Transportation – Change Management Board Teleconference Notes – Thursday, November 2, 2006, 8:00 a.m. – 4:30 p.m.</i>	
File Location:	W:\ITS Program\ITS GC\060305 NEW ITS GC Contract\Assign 41 - CMB Meeting Support\061102 CMB Teleconf Notes Final v2.doc	
Deliverable Number:		
Version Number:	1	
Name		
Date		
Created By:	Dave Hodges, PBS&J	November 6, 2006
Reviewed By:	David Chang, PBS&J	November 10, 2006
	Trey Tillander, FDOT TEOO	November 13, 2006
Modified By:	Pam Hoke, PBS&J	November 13, 2006
Completed By:	Pam Hoke, PBS&J	December 13, 2006

List of Acronyms

ADUS	Archived Data User Service
AVL	Automatic Vehicle Location
CCTV	Closed-circuit Television
CDW	Central Data Warehouse
CMB	Change Management Board
COTS	Commercial Off-the-Shelf
EM / PM	Event Manager / Performance Measure
FDOT	Florida Department of Transportation
GUI	Graphical User Interface
HAZMAT	Hazardous Materials
ID	Identification
ITB	Invitation to Bid
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation System
IV&V	Independent Verification and Validation
OIS	Office of Information Systems
SwRI	Southwest Research Institute
STEWARD	Statewide Traffic Engineering Warehouse for Archived Regional Data
TEOO	Traffic Engineering and Operations Office
TERL	Traffic Engineering Research Laboratory
TMC	Transportation Management Center
WsDOT	Washington State Department of Transportation
XML	Extensible Markup Language

Florida Department of Transportation
CHANGE MANAGEMENT BOARD
TELECONFERENCE NOTES

Thursday, November 2, 2006
8:00 a.m. – 11:30 a.m.

**Traffic Engineering and Operations Office Intelligent Transportation
Systems Section (Tallahassee, Florida) and District Locations Statewide**

Purpose:

This Change Management Board (CMB) teleconference was held to review the Central Data Warehouse (CDW) project and the development of the SunGuideSM software ramp metering firmware, and to vote on software enhancements relating to camera preset scheduling and the automatic vehicle location (AVL) functions.¹

Attendees:

Chris Birosak, FDOT District 1	Jesus Martinez, FDOT District 6
John Bonds, PBS&J / ITS General Consultant	Elizabeth McCrary, FDOT District 7
David Chang, PBS&J / ITS General Consultant	Rory Santana, FDOT District 6
Steve Corbin, FDOT District 4	Mike Smith, FDOT District 5
Ken Courage, University of Florida	Jason Summerfield, SmartRoute Systems
Steve Dellenback, SwRI	Trey Tillander, FDOT TEOO
John Easterling, Florida's Turnpike Enterprise	Walt Townsend, Siemens ITS
Robert Heller, SwRI	Peter Vega, FDOT District 2
Dave Hodges, PBS&J / ITS General Consultant	Chad Williams, FDOT District 3
Liang Hsia, FDOT TEOO	Bill Wilshire, FDOT District 7

Board Chairman Steve Corbin opened the meeting and everyone introduced themselves. A recap of the August 29, 2006, CMB meeting was provided and the action items from that meeting were reviewed as noted below:

- 1) David Chang completed the review of the CDW Road Ranger extensible markup language (XML) schema versus the Road Ranger procedure and SunGuide requirements to ensure consistency among all three. They were also crosschecked against the AVL requirements being voted on today.

¹ SunGuide is a service mark of the Florida Department of Transportation.

- 2) Trey Tillander and Southwest Research Institute (SwRI) completed a review of the CDW global device numbering proposal. Trey said it was SwRI's opinion that the proposal would not have a big impact on the SunGuide software. Trey indicated that Ken Courage would provide more information to the CMB later in the meeting.
- 3) Regarding the distribution of Invitation to Bid (ITB) for the statewide intelligent transportation system (ITS) procurement, Liang Hsia said Jeff Morgan will provide a status update to the CMB members on ITB items approved to date by staff at the Traffic Engineering Research Laboratory (TERL).
- 4) John Bonds updated the camera preset scheduling requirements that will be voted on later in the meeting based on input received.
- 5) Trey Tillander coordinated with SwRI and Paul Clark to obtain costs for geofencing. Trey indicated that these requirements will be voted on later in the meeting.
- 6) Walt Townsend updated the AVL requirements based on previous discussion.
- 7) John Bonds provided the final AVL requirements specification for review. The CMB will vote on the requirements later in the meeting.
- 8) Steve Corbin scheduled the November meeting as planned. The CMB members discussed having the next meeting on December 1, 2006, at the conclusion of the ITS Working Group Meeting during the week of Transpo in Palm Harbor.

Trey Tillander presented the next agenda item regarding the annual cost of commercial off-the-shelf (COTS) software used in conjunction with SunGuide. Oracle® 10g costs \$10,000 (\$5,000 per processor license) and Tele Atlas Dynamap® v8.0 costs \$4,000.^{2, 3} Trey said the transportation management centers (TMCs) need to make sure these costs are included in their budgets. David Chang noted that District 5 has four Oracle licenses, so their cost would be \$20,000 annually.

The FDOT Office of Information Systems (OIS) has covered these expenses before, but it is not known whether that will be the case this time. Liang Hsia said that he has not heard who will be responsible for the expenses.

Steve Corbin asked how these costs should be paid. Trey Tillander responded to Steve Corbin's question and indicated that he would try to find out how the funding transfer takes place for COTS software.

² Oracle is a registered trademark of Oracle Corporation.

³ Dynamap is a registered trademark of Tele Atlas.

An update for the ramp metering software was provided next. Steve Dellenback (SwRI) explained that the Washington State Department of Transportation (WsDOT) and the FDOT could not consent on a license agreement for the FDOT's use of the WsDOT ramp metering software, so the FDOT opted to produce its own firmware that consists of three operational modules and is burned on an erasable programmable read-only memory (EPROM) disk. There is continuous integration testing of the data and metering modules, and full integration testing will be performed once all modules are developed. Steve Dellenback said the modules are written in C language, which is better than the older Assembly language. The C language is easier to update because it is easier to find a C programmer. He also explained features of the metering module that calculate the time of day metering rate, among other things. There will be a side-by-side ramp metering comparison test with the WsDOT software on one controller and the FDOT software on another to see how the new code functions. The independent verification and validation (IV&V) is scheduled to begin on December 1, 2006, followed by delivery of the firmware to the FDOT on December 15, 2006. Steve Dellenback said he is pleased with the project's progress and its direction.

Bill Wilshire asked Rory Santana when the ramp metering deployment will occur in District 6. Rory responded that it will be December 2007 because District 6 needs to get the equipment installed and take care of other tasks in the interim. His staff will need that amount of time for the roll-out. Bill says he will be waiting on his launch in District 7.

Ken Courage presented the global device numbering scheme update, which is part of the CDW project. The first format (i.e., the raw SunGuide archived data format) has 30 characters, whereas the Statewide Traffic Engineering Warehouse for Archived Regional Data (STEWARD) has 7 — a difference of about 40 megabytes (MB) of data per day, which is a concern. Ken said that neither the lane type (i.e., lane versus ramp) nor lane direction is factored in. Ken also said the format needs to distinguish between an on-ramp and an off-ramp. The STEWARD format has an Observations column for a quality check, along with a seven-letter lane identification (ID).

Ken Courage said that the Archived Data User Service (ADUS) standard for lane ID will be coming out soon, but the FDOT will not be able to conform to that the standard without reformatting its data. Ken noted that the Districts can use the existing format. The FDOT can convert to the national standard, but the CMB needs to make that decision. Walt Townsend asked about the quality of incoming SunGuide data. Ken said his job at the CDW is to verify the quality of data and to detect bad detectors. Some detectors are prone to miscounts under certain conditions. The question is whether the SunGuide data is suspect or the problem is traceable to the detector in the field. Ken explained that the CDW sends reports back to the TMCs regularly that indicate where problems were noted in the data.

Trey Tillander asked about the use of an agency code and whether that would be feasible. Ken Courage said that the CMB should discuss the subject. Steve Corbin said there is no way to tell. Pete Vega said the subject arose over how to tell District 6 from the Miami-Dade Expressway Authority (MDX) in Miami-Dade data. Ken noted that a character can be added to identify the facility. It would be built into the lane numbering because the portion of the lane in one jurisdiction would be different from a portion in another agency's area. Ken said problems occur when labeling with alphanumeric codes. First, this would not conform to the format of the emerging national data standard (the shaded area of Table 3 in the handout) and, secondly, there is too big a potential for typographical errors, which would mislabel the entry. Steve Corbin recommended using the road number.

Ken Courage said he would send the table that shows the IDs after the meeting. He will also do a comparison of the Institute of Transportation Engineers (ITE) standards for the center-to-center global device numbering system and come up with something. Mike Smith found the citation and will copy it to Trey Tillander. Ken Courage will also send the metadata spreadsheet that was discussed.

Trey Tillander asked Steve Corbin whether device numbering ought to be a topic for further CMB review and consideration at a later time. They agreed to discuss this next week.

During the SunGuide software update, Rory Santana said that Release 2.2 began operating last night in District 6 and has had no incidents, but he would verify. Steve Corbin discussed the event management (EM) and performance measurement (PM) features, as well as the event management graphical user interface (GUI). The GUI gives the TMC operator the benefit of automated detection alerts and the ability to use a camera blocking feature, which is a manual process that keeps images from being displayed externally, such as on a public Web site, when need be.

The Road Ranger administrative GUI was also discussed. The Event Data Entry Screen now includes a congestion field to record the impact of an incident on traffic movement. Steve Corbin said that secondary events can be logged when the incident causes other impacts. One big advantage is that operators can have multiple event windows open simultaneously, which was not possible before. For Road Ranger data entry, there are five processes that can be recorded in the Dispatch section using the drop-down list provided. It is a tool for showing the status and location of all Road Rangers assigned to a beat or zone. Steve Corbin said that one enhancement would be a way to indicate which truck is closest to an incident for purposes of dispatching.

Text alert messaging allows bulletins to emergency medical or hazardous materials (HAZMAT) personnel so they know in advance what to expect when they arrive on the incident scene. Responder Management consists of a table used to record when an agency is notified, when its personnel arrive, how much time they are on scene, and when they leave. Using the performance measure and general reporting forms, a manager or administrator can pick either a weekly or a monthly report by clicking on a calendar prompt. Lastly, the audit function is a section used to modify event details that can be changed, such as Road Ranger status, time reported to the TMC, notifying agency/contact, or event location. Only supervisors, managers, and others with proper access privileges can use the Audit function.

Trey Tillander asked if this could be demonstrated at Transpo. Steve Corbin said District 4 will have a booth at Transpo and will handle the demonstration.

In response to a question from Trey Tillander, Steve Dellenback indicated that the training and users' manual will be ready in a couple of weeks, along with other documentation.

Steve Dellenback presented the SunGuide GUI performance enhancement. He explained that the SunGuide log-in process has been extended somewhat and is taking longer, which affects performance. SunGuide must load the system-level map, which takes about one-third of the startup time. The other two-thirds is the function of authenticating subsystems. Steve Dellenback said this is becoming more involved as the FDOT ITS network grows and map data expands. It can take anywhere from 10 seconds to several minutes, depending on the environment and the user's characteristics, such as the amount of equipment on the system and the size of the message library, which is the biggest factor.

Internet Explorer™ is the root of the problem.⁴ The XML parsing accounts for the bulk of the processing demand. At present, SunGuide exchanges many XML messages to exchange data. ActiveX® is a solution to this, but the FDOT must allow this to be enabled.⁵ The trouble with ActiveX is that it is a significant security portal for networks like the FDOT's and, hence, a risk. Message parsing can be greatly reduced (down to a couple of seconds). Steve Dellenback recommended converting to ActiveX to gain this processing advantage. This would cost \$81,000.

Trey Tillander thinks this is a good idea. He said he will get back to SwRI to provide direction. This necessitates no change in the requirements, just how the software functions. It could be incorporated in future versions, so Trey needs to provide guidance to SwRI.

The CMB took a 15-minute break.

⁴ Internet Explorer is a trademark of Microsoft Corporation.

⁵ ActiveX is a registered trademark of Microsoft Corporation.

Peter Vega introduced Jason Summerfield, who discussed the dynamic message sign (DMS) spell-check enhancement feature. Jason accidentally discovered that the DMS subsystem, not the message arbitration system (MAS), spell checks the message. Consequently, it is completely possible to have an incorrect message displayed on MAS, but not actually on the sign itself, which means that the MAS dialogue box that shows the message is not as useful as it could be, Jason noted. Is the accuracy of the MAS queue display a concern?

Steve Dellenback said the reason this is being brought before the CMB is because there are operational considerations involved. For instance, how should the spell check function be performed? Southwest Research Institute needs to ensure that the CMB is comfortable with the operational scenarios, such as the responsibility for correcting messages.

Peter Vega will conduct a test by queuing a message that is misspelled and corrected through the spell checker. It will be a low-priority message and when it comes back up in the queue, Peter and Jason will see if the spell-check response comes back. Steve Dellenback said the SunGuide DMS subsystem will definitely run the message through spell check. Southwest Research Institute will send the CMB the three options available for this function.

John Bonds discussed the added/modified video control requirements. Chris Birosak asked what a north-facing closed-circuit television (CCTV) camera that is locked does when a scheduled direction change occurs. Would the camera move to the scheduled position when it is unlocked later? John responded that he did not know, but that this would be tested. Steve Dellenback said the unlocked camera would not move. The operator would have to reposition the previously locked camera manually.

Steve Dellenback said not to confuse suspending a schedule with locking a particular camera. He also felt that suspending a schedule would be a rare event. The camera would stay where it is until the next scheduled event occurs. There was discussion of whether Item 1 and Item 5 on the requirements list contradict each other, and how to have the operator's manual control of the camera override the automatic scheduling. John Bonds said he would remove Item 5. Trey Tillander reiterated that the cost for this feature, including the new requirements being voted on today, is \$135,000. He indicated that the CMB could vote on everything except Item 3, which requires a change. John said to make Item 5 subject to a change in wording.

It was agreed that SwRI will provide a very high-level design review session at the next CMB meeting for the CCTV preset scheduling module in SunGuide.

The requirements below were edited by the CMB:

- TV007C — “currently” added after the word “action”
- TV007C3 — “for a specific camera or cameras” added after “resume the schedule”
- TV007C5 — This item was deleted.

The requirements along with the above changes were approved by a unanimous CMB vote.

John Bonds will send out the corrected versions of these requirements.

Regarding the AVL subsystem requirements in Release 3.X of the SunGuide software, John Bonds said he would respond to any questions on the individual items. He noted that a user needs to utilize the EM/PM subsystem in SunGuide to get the AVL functions. There were no questions on slides 42 and 43. Steve Corbin asked about Requirement AV001L's AVL data acquisition component. (Refer to Slide 44.) Steve indicated that the FDOT owns District 4's Road Ranger XML interface and that it is available to other Districts.

Regarding Requirement AV004L, Rory Santana asked what kind of event? John Bonds said this is when a Road Ranger is dispatched. If the Road Ranger is roving, then he is considered to be on patrol.

There was discussion of whether a screen icon shape and color should be configurable. Steve Dellenback asked what that meant and added that making them configurable has big implications for the software. SunGuide allows an operator to change colors at present. Trey Tillander said he favors a few icons established that the operator can select and change in color. John Bonds replied that would be easier.

The CMB consensus was to stick with four status indications for Requirement AV010V1: patrolling, dispatched, assisting, and out-of-service.

Trey Tillander said that SwRI had an earlier estimate (i.e., \$32,000) for geofencing requirements. However, the other requirements have just been finalized for voting and SwRI did not have any time to prepare a cost estimate. Steve Dellenback responded that he did not have a good estimate to provide at this time. Trey said the requirements should be voted on, subject to the cost estimate, and then on December 1, the CMB could vote on the cost estimate.

Steve Dellenback said he would be sure to break out the expenses for Trey Tillander and Steve Corbin to review and forward to the CMB.

All the AVL requirements were approved in a unanimous vote.

John Bonds said this will be a major addition to the software and that there should be a design review.

It was agreed that the next CMB meeting will be held on Friday, December 1, 2006, at end of the Transpo conference, following the 511 Working Group session.

The teleconference was adjourned at 11:05 a.m.

ACTION ITEMS

1. Trey Tillander will find out how the funding transfer takes place to cover the cost of COTS software that is used in conjunction with SunGuide.
2. Liang Hsia will find out whether the annual cost of TeleAtlas' software will be covered by the Chief Engineer's Office for the next fiscal year.
3. Concerning global ITS device numbering, Ken Courage will distribute a table that shows the device IDs. He will also do a comparison with the ITE standards for the center-to-center global device numbering system and make a recommendation. Ken will also send the metadata spreadsheet that was discussed.
4. Trey Tillander will provide direction to SwRI on whether to utilize ActiveX software in future SunGuide versions to gain a processing advantage during the SunGuide log-in process.
5. Peter Vega will conduct a test in which a posted message is misspelled and corrected through the DMS subsystem spell checker. It will be a low-priority message and, when it comes back up in the queue, he and Jason Summerfield will see if the spell-check response comes back.
6. Steve Dellenback will provide Trey Tillander and Steve Corbin with three options that are available for the SunGuide DMS subsystem spell check function.
7. Southwest Research Institute will provide a high-level design review session at the next CMB meeting for the CCTV preset scheduling module in SunGuide.
8. John Bonds will provide Steve Corbin with the corrected versions of the camera preset scheduling requirements that were edited during the meeting and approved in a voice vote. Steve Corbin will distribute to the CMB.
9. Steve Dellenback will develop and break out the AVL requirements' cost estimate for Trey Tillander and Steve Corbin to review and forward to the CMB.