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Florida Department of Transportation

CHANGE MANAGEMENT BOARD MEETING

Wednesday, December 7, 2005 Florida Mall Hotel Orlando, Florida

Purpose

This meeting was held to perform a final review and to vote on various outstanding issues relating to the requirements in Engineering Change Proposal (ECP) 2.0 for the SunGuideSM software. Report presentations on District SunGuideSM deployments and a demonstration of Release 2.0 of the SunGuideSM software were also reviewed.

Peter Vega, District 2*

Attendees¹

Chris Birosak, District 1* Dong Chen, District 4* Bill Wilshire, District 7* Ingrid Birenbaum, FTE* Robert Heller, SwRI Elizabeth Birriel, TEOO ITS Erik Gaarder, PBS&J John Bonds, PBS&J Aaron Jackson Chester Chandler Steve Novosad Steffani Stephens Enrique Zelaya Bo Oian Bill Lueck, PB Farradyne Girish Kumar

Jerry Woods, District 5*
Bijan Behzadi, District 7
Ivan del Campo, MDX
John Easterling, FTE
Liang Hsia, TEOO TES*
Frank Deasy, PB Farradyne
Tahira Faquir, PBS&J
Stephanie Kolb, Transcore
Ron Meyer, PBS&J
Richard Easley, E-Squared
Ken Vorce
Dan Baxter
Penny Kanish, SmartRoute
Harry R. Rydstrom
Mike Ouelletta

Chad Williams, District 3* Javier Rodriguez, District 6* Elizabeth McCrary, District 7 Russell Allen, RCC Ranzy Whiticker, FTE Gene Glotzbach, TEOO ITS Bob Bebee, Daktronics David Chang, PBS&J Walt Townsend, Siemens ITS Dave Hodges, PBS&J Erika Ridlehoover Paul Watson, PBS&J Ian Cardozo Derrick Odom, SmartRoute Scott Silva Ron Wolcott

Gene Glotzbach gave the meeting introduction and called roll for the board members. Liang Hsia presented a review of ECP 2.0 requirements, and noted that ballots had been sent to the Districts and Florida's Turnpike Enterprise (FTE). The preliminary results had been received from voting members. Requirement clarifications and voting results are needed.

¹ Attendees marked with an asterisk (*) are voting members of the Change Management Board.

John Bonds introduced and explained ECP 2.0 requirements for SunGuide. Several CMB items were tabled at the July 20, 2005, meeting in St. Petersburg, including the issue on Requirement Identification (ID) No. TV006S regarding incident management through center-to-center (C2C) communications utilizing video capabilities. The requirement contains a direct reference to the Barco video wall in the transportation management center (TMC). Chung Tran indicated concern that mentioning Barco's wall by name would unduly favor the company. John Bonds and Walt Townsend responded that making a proprietary specification was not the intent. Barco's Argus video controller actually has a universal video decoder that handles any digitized input. Any firm that produces a driver for their controller for SunGuide compatibility (based on the applicable interface control document published) can be included. Barco was just the first company to do so.

Gene Glotzbach and John Bonds opened a discussion regarding the summary pages, and providing the change items and a summary of the vote. Ranzy Whiticker posed a question regarding dynamic message sign (DMS) devices for incident management outside a native District.

A vote was taken and the change item passed unanimously.

Robert Heller discussed the inclusion of a response plan for an adjacent District's signs. He said there were two stipulations: 1) A TMC must connect for control; and 2) the TMC must have permission to post messages on another District's DMS devices. This permission is granted per message, on a "trusted District" basis.

Regarding Road Rangers, Peter Vega felt the interface cumbersome in keeping track of incidents, and he asked Robert Heller to explain that. Mr. Heller responded that SunGuide provides a way to pull data from Road Ranger devices in a standard format. Mr. Vega felt it may be cumbersome to integrate data into SunGuide and thought reporting was better accomplished at the end of a Ranger's shift. That way, keeping track of incidents would be easier. Mr. Vega decided to vote yes on the change.

Next was a discussion regarding Florida Transportation Commission (FTC) reporting. It was noted that Paul Clark has produced statewide data requirements. Regional Road Ranger information is to be compiled to construct a statewide database. After further explanation, the Board members indicated a unanimous yes vote.

The tag reader item was discussed. There is no estimate on its cost yet. Tag readers are used by the Miami-Dade Expressway Authority (MDX) for travel-time reporting. District 6 has an 18-mile stretch of highway for test purposes. It was mentioned that the software driver for this function should be inclusive of the next generation of tag readers. This item was deferred for future consideration by the Board, though one action item was proposed by Ingrid Birenbaum – ensure that any requirements adopted include support for the next generation of tag readers.

For the emergency evacuation item, a motion to reduce the scope of work was submitted. This will generate a cost savings of \$42,340. The vote to reduce the scope was unanimous.

Proportional fonts were discussed in regard to DMS messages. Liang Hsia briefed attendees regarding the requirement that relates to fixed spacing of letters versus proportional spacing. District 4 expressed willingness to possibly provide funding for the development of a software driver for this function. Robert Heller explained that font spacing for DMS devices can be defined any way the user wishes. The expected cost for this is \$174,631. SunGuide was originally designed for fixed character spacing. Center-to-center communications will probably rely solely on fixed width, regardless of the software. There was continued discussion on the impact of this font spacing and the limitations it may have. Dong Chen remarked that the cost would actually be a small investment compared to replacing sign hardware or reconfiguring the message database. The proposed change passed.

Lastly, it was discussed that for all desired changes, excluding estimates for readers and the performance measures, there is a cost overrun of \$75,627. Gene Glotzbach said the ITS Section needs to come up with the necessary dollars to offset this additional expense. However, MDX said they were joining the effort, too, so that would mean more money for the development. Elizabeth Birriel indicated that the Board should prioritize the software needs during the meeting and rank the ones that need to be done. Future needs include the development of a portable version of SunGuide with limited capability that does not rely on having an Oracle database component, which is often cost prohibitive. Preliminarily, SwRI feels that a Microsoft structured query language (SQL) database would be the primary alternative that would support a version of SunGuide capable of being used in a stand-alone fashion on a single laptop or desktop computer. It would be used for limited control of ITS devices, such as where a city or county installs a few cameras and DMS devices for local traffic.

Another need is the long-term support and maintenance of SunGuide. The cost from fiscal year (FY) 2006 to FY 2012 is \$1,585,413., though the Board previously approved the FY 2006 amount of \$237,192 at its July 2005 meeting. Performance measures are necessary, as well as the drivers for the tag reader plan.

Liang Hsia asked for input from everyone regarding SunGuide needs so that the money can be spent wisely.

Afterward, Liang Hsia gave a briefing on the renovations at the Traffic Engineering Research Laboratory (TERL) and its preparations for ITS device testing in the new facilities. He presented a series of slides that showed the various lab spaces. Elizabeth Birriel remarked that there could be tours offered of the refurbished TERL at a future working group meeting.

Robert Heller gave a SunGuide development update. He explained that SunGuide Release 2.0 provides connectivity across centers. Traffic data is collected automatically and could be used to display highway conditions all over the state. He said that all of the function, along with traveltime templates.

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SunGuide was deployed in Fort Lauderdale in June 2005, in Jacksonville in October 2005, and in Miami in November 2005. There have also been inquiries and interest expressed by other state departments of transportation (DOTs), including Mississippi, New Hampshire, Illinois, Nebraska, and Oregon.

SunGuide software deployment reports were scheduled from Districts 2 and 6, but Gene Glotzbach recommended postponing those reports until the next day. The meeting ended at approximately 5:00 p.m.

The voting results are identified in Table 1.

Table 1 – CMB Voting Table

Item	Category	Original Request	Associated Detail Requirements	Cost	Source	Notes	CMB Vote (Yes/No/ Future)
IM Through C2C Communications	IM	Provide an algorithm to determine the operations concept when an incident occurs at the jurisdictional boundary.	 TV006S: The CCTV switching function shall support the switching of C2C video source to Barco video wall. DM016M: SunGuide shall provide a mechanism to include DMS devices from available from the C2C interface when generating a IM response plan. DM010D: If SunGuide receives a DMS request from another center, a configurable parameter shall be provided as to whether an operator has to approve the posting of DMS request to the MAS subsystem. Dm001M: Device requests received via the C2C interface shall be validated. 	\$121,275.00	Concept of Operations for Incident Management through C2C Communications	The Concept of Operations for Incident Management through C2C Communications final version was distributed June 21.	Yes
Road Ranger Subsystem	IM	PDA or tablet with wireless capability to communicate with TMC.	 TM001D: SunGuide shall acquire and store the following data that is collected at the beginning of the Road Ranger Service Patrol Vehicle Operator's shift: A. Date B. Shift start time C. Operator name D. Truck number E. Route F. Beginning vehicle mileage This data shall be available to support the generation of reports on Road Ranger operations. TM002D: The following data collected at each stop shall be stored by SunGuide and made available for report generation and reviewing through the SunGuide GUI: A. Dispatch time B. Arrival time C. License number D. State E. Vehicle type F. Direction of travel (NB, SB, EB, WB) G. Mile marker H. How discovered I. Lanes/shoulder blocked J. Cause for stop K. Services provided L. Depart time M. Comment card (Y/N) 	\$122,916.00	Statewide ITS Architecture Meeting Road Ranger and Traffic Incident Management Program Manager		Yes Postpone to FY 07

Item	Category	Original Request	Associated Detail Requirements	Cost	Source	Notes	CMB Vote (Yes/No/ Future)
			TM002D1: The following data collected about the vehicle type at each stop shall be stored and linked to the Road Ranger report containing the data: a. Passenger b. Pickup or van c. RV or bus d. Single-unit truck e. Tractor trailer f. Motorcycle				
			 g. N/A subsystem TM002D2: The following data collected by the Road Ranger about how it was discovered at each stop shall be stored and linked to the Road Ranger report containing the data: a. Drive up b. Saw and changed route c. Road Ranger dispatch d. Notified by other Road Ranger operator/supervisor e. FHP dispatch/officer f. Other 				
			TM002D3: The following data collected about the cause for the stop shall be stored and linked to the Road Ranger report containing the data: a Accident (crash) b. Vehicle fire c. Disabled d. Abandoned e. Debris f. Pedestrian g. Other				
			TM002D4: The following data collected about what services were provided at each stop shall be stored and linked to the Road Ranger report containing the data: a. Extinguish fire b. First aid c. Absorbent d. Remove debris e. Relocate (to safer location)(> 250 feet) f. Tire g. Fuel				
			h. Fluids i. Mechanical j. Jump start k. Called wrecker l. Secure load m. Mobile phone call n. Directions				

Item	Category	Original Request	Associated Detail Requirements	Cost	Source	Notes	CMB Vote (Yes/No/ Future)
			 o. Transported p. Unable to locate q. Blocked lane/traffic control r. Tagged abandoned vehicle s. Relocate vehicle from travel lane (< 250 feet) t. Notify FDOT for road repair u. Other – describe v. No service – occupied w. No service – abandoned TM002D5: The following data collected at the end of each Road Ranger shift shall be stored by SunGuide and linked to the Road Ranger reporting the data. A. Shift end time B. Ending vehicle mileage TM003D: The Road Ranger operator data shall be collected monthly and be able to be exported to Microsoft Excel or other compatible format. TM004D: SunGuide shall support the compilation and report generation quarterly. TM005D: SunGuide shall store the Road Ranger data for a minimum of 12 months and have it available for review and report generation within 120 seconds of when a specific piece of data is requested. TM006D: SunGuide shall interface with and be able to download Road Ranger data collected by Road Rangers using a portable device. The data shall be exported from the portable device in comma delimitated text format (CSV) as a flat file and transfer shall be through a RS-232 serial interface. 				
Support and Maintenance	Support	 24/7 support for TMC On-site Support Continuous Development 	 24/7 coverage (answering service would be the initial contact point – the service would contact the appropriate SwRI representative). Specific response times identified. One full-time SwRI staff member (developer) located in San Antonio. One part-time SwRI staff member to provide project management. Florida-based SwRI staff member as approved by FDOT. 	\$1,585,413 from FY 06 to FY 12 * (Renewable annually)	 SunGuide General and Onsite Support Agreement Support Summary Sheet 	The SunGuide General and Onsite Support Agreement and Support Summary Sheet were distributed July 1.	Yes: Voting members approved the cost of \$237,192.32 for FY 06. Cost from FY 07 to FY12 will be voted in the future.

Create a graphical editor to specify travel time links. Create a "DMS TVT Subsystem" to display travel times. Massage will be queued through MAS (i.e., priority based). Thought Tavel time computation shall be based on the Texas Department of Transportation Transportation. Thought Travel time computation method. Thought Travel time computation Transportation Transportation Transportation Transportation. Thought Travel time computation Method. Thought Travel time computation Method. Thought Travel time computation Method. Thought Transportation Transportation Transportation. Transportation Transportation Transportation. Thought Travel Time Computation method. Thought Travel time Computation fravel time for travel time deportance of travel time for travel time deportance. Thought Travel time for trav	Item	Category	Original Request	Associated Detail Requirements	Cost	Source	Notes	CMB Vote (Yes/No/ Future)
Performance Measures New New Measures Meas	Travel Time	T∨T	Message Template" that can be edited by a SunGuide Administrator. Create a graphical editor to specify travel time links. Create a "DMS TvT Subsystem" to display travel times. Message will be queued through	 Add Frequently Asked Questions (FAQ) to support Web site. A018: The SunGuide Software System shall provide software for traffic and delay prediction to support. S031: SunGuide shall compose and be able to send messages to a DMS that inform travelers of the average travel time between two points on the instrumented and monitored roadway system defined by each District. TM001T: Travel time message shall be automatically generated. TM002T: SunGuide shall include a "Travel Time Message Template" that is editable by operators with SunGuide Administrator privileges. TM003T: Travel time message shall have a SunGuide Administrator configurable priority that can be modified by operators with appropriate SunGuide privileges. TM016: Travel time computations shall be based on the Texas Department of Transportation TransGuide Travel Time Computation Method. TM017: SunGuide shall provide a graphical way for each District to specify which links in their instrumented 	\$80,942.00		Message Analysis for Florida's SunGuide Software was distributed July 6. Committee member suggests using GDOT travel time algorithm. Refer to July 19 SunGuide Status	Yes: Use TxDOT TransGuide algorithm. This needs to be included in Release 2.0
Req. ID TBD sub2: SunGuide shall support the creation of reports summarizing the performance measurements over a variable length of time from 1 day to 1 year in the increments of days or calendar months.	Measures			 Req. ID TBDsub1: Performance measures shall include but not be limited to: Incident Detection Time Incident Verification Time Incident Response Time Incident Clearance Time Traffic Queue Clearance Time Req. ID TBD sub2: SunGuide shall support the creation of reports summarizing the performance measurements over a variable length of time from 1 day to 1 year in increments of days or calendar months. 			DOD	Future: SwRI will provide available SunGuide software incident management data. D6 suggested including the Road Ranger subsystem data requirement in the performance measures.

Item Categ	ory Original Request	Associated Detail Requirements	Cost	Source	Notes	CMB Vote (Yes/No/ Future)
Item Categorial Catego	apply tag reader instead of detectors.	and use that data to calculate the elapsed time of travel between the geographic location where the tag was initially read and the geographic location where the tag was read again. TM010S: Processing associated with collection, fusion, and dissemination of real-time toll tag data feeds shall introduce a latency of no more than 2 minutes. TM002S: SunGuide shall allow users to perform system configuration activities without introducing latency greater than 2 minutes in the real-time processing of the toll tag with the exception of the addition, removal, or modifications to AVI collection. TM003S: The toll tag reader function shall be operational 99.9% the time, measured annually. TM003S1: Operational shall be defined as that the system is running and that no internal errors have occurred. TM004S: The toll tag reader function shall report and archive speed and travel time calculations to three decimal places of precision. TM005S: The toll tag reader function shall include an AVI data collection function. TM005S1: The AVI data collection system shall be able to process AVI tag data from Amtech Type II and Type III AVI tags, including "E-PASS", "OPASS", "SunPass", and "LeeWay" AVI Tags. TM005S2: The AVI data collection system shall receive AVI tag data from the toll collection agency AVI data collection sensors, or alternatively poll the data collection sensors. TM005S3: Users shall be able to add AVI data collection sensors to the SunGuide system. Changes will take effect when the system is restarted.	Cost	Source	may meet the requirements. The proposed requirements have been presented in October 4, 2005, status teleconference.	
		 TM005S4: Users shall be able to modify AVI data collection sensors that have already been added to the SunGuide system. Changes will take effect when the system is restarted. TM005S5: The SunGuide system shall interface with 				

Item	Category	Original Request	Associated Detail Requirements	Cost	Source	Notes	CMB Vote (Yes/No/ Future)
			data collection modules using a standardized interface that is documented and approved by FDOT.				
			 TM005S6: Raw AVI data collected by SunGuide shall include the following: Transponder ID - unique AVI tag identifier. Reader ID - Data collection sensor that made the tag read. Lane ID - lane in which the tag was read. Time stamp - time when the tag was read. Fault Information - fault information from the data 				
			source.				
			TM006S: The SunGuide system shall gather external AVI collection device status data.				
			TM006S1: The SunGuide system shall determine the status of the toll collection agency's AVI data collection sensors.				
			TM006S2: The AVI data collection system shall report errors in AVI data collection sensors.				
			TM007S: SunGuide shall ensure that toll tag customers remain anonymous in the system.				
			TM007S1: The SunGuide system shall encrypt AVI transponder IDs.				
			TM008S: The data server shall filter out duplicate tag reads (i.e. reads of the same AVI transponder, at the same data collection site, in a given time.)				
			TM009S: SunGuide shall archive AVI tag read data.				
			TM009S1: AVI tag read data shall be archived with encrypted transponder IDs.				
			TM009S2: Raw AVI tag read data shall be archived in the same format in which it was received, except that the transponder ID shall be encrypted.				

Item	Category	Original Request	Associated Detail Requirements	Cost	Source	Notes	CMB Vote (Yes/No/ Future)
Enhancements during FAT 1.1	New	 "Find on Map" button should have a flashing indicator or notification for assigned operator (D6). Limit DMS message to two phases and a specific character count (D6). "Date Picker" rather than dropdown lists for date fields (D6). Use "mile marker" rather than "cross street" in recommended response plans (D6). Add "close" button to windows rather than the Window's "x" (MDX). Highlight an individual sign from a response plan on the map (MDX). Restrict field lengths in the editor (MDX). 					Complete
HAR WAV file	HAR	 Provide Spanish WAV file. Operator creation of WAV file based on operator privileges. 	Req. ID TBD: SunGuide shall provide the ability to use externally generated WAV files in the broadcast of messages to HAR devices.	\$48,730		Refer to July 19 SunGuide Status Meeting Slides	No
DynaMap Update	GUI / Map	Using DynaMap V7.0					Yes: CO will distribute the CD sets to Districts for SunGuide deployment.
Emergency Evacuation	EG	Several Web sites have been developed by a number of agencies that provide the functionality specified; suggest providing links to these sites.	 EC001: The evacuation coordination subsystem shall provide the capability to provide evacuees with information they need during the evacuation, as well as the reentry. EC001G: The evacuation guidance component shall provide the capability to determine and display those evacuation zones under specific government orders to evacuate during an emergency condition. 	-\$42,340.00		The proposed EG requirements have been presented in August 17, 2005, status meeting.	Yes

Item	Category	Original Request	Associated Detail Requirements	Cost	Source	Notes	CMB Vote (Yes/No/ Future)
			EC004G: The evacuation guidance component shall provide a means to obtain evacuation zone locations and status.				
			 EC007G: The evacuation guidance component shall provide a display of actual traffic conditions on instrumented evacuation routes. This information shall include: Travel times and speeds. Current construction and detours information. 				
			EC009G: The EG shall provide a means of determining evacuation zone and category information.				
			 Remove the requirement EC005: The evacuation coordination subsystem shall provide manual data entry screens to support evacuation planning. 				
			FEAT9.11: SunGuide shall allow a user to define a font using the following characteristics: Name of font, character height in pixels, default character width in pixels, and width in pixels for any characters whose width differs from the default.				
Proportional Fonts	IM		FEAT9.12: SunGuide shall require that a font be assigned to each DMS device. Note: The DMS hardware must be configured to have the assigned font as the default font.	\$174,631.00			Yes
			FEAT5.3.33: The incident management function shall use each DMS' font characteristics to determine response plan messages.				
			 FEAT9.13: DMS shall use each device's font characteristics to determine whether a message can be displayed. 				