



Change Management Board Meeting



Welcome and Introductions

Steve Corbin, CMB Chairman



Change Management Board



Time	Item	Lead	Supporting Materials
8:30 – 8:35	Welcome and Introductions	Corbin	
8:35 – 8:45	Previous Meeting Recap and Action Item Review	Corbin	July 9, 2007 Meeting Notes
8:45 – 9:00	CMB Process Revisions	Corbin	<i>Change Management Process for the Deployment of ITS in the State of Florida</i>
9:00 – 9:10	SunGuide™ Logo Trademark and Software Copyright	Tillander	E. Birriel's 7/31/07 email, CMB.ppt
9:10 – 9:20	SunGuide™ Software Operator Training	Chang	CMB.ppt
9:20 – 9:50	SunGuide™ Footprints Issues Review	Issue No. 101	CMB.ppt
		Issue No. 222	<i>NTCIP Naming Convention.pdf</i>
		Issue No. 249 <i>(Vote)</i>	CMB.ppt
9:50 – 10:00	SITSA Update Process	Faquir	<i>070806 SITSA Update Process Memo v2.doc</i>
10:00 – 10:15	BREAK		



Change Management Board



Time	Item	Lead	Supporting Materials
10:15 – 10:45	SunGuide™ Software Support Environment	Internet Explorer – <i>(Vote)</i>	Tillander CMB.ppt
		Clustering	Vahle <i>Server Options – April 13, 2005.pdf</i>
10:45 – 11:15	SunGuide™ Software Release 3.1	D-2 Additional Travel Time Subsystem Requirements	Vega <i>SunGuide™ Travel Time COV.doc, Pete Response to 070705 Comments on D2 TvT ConOps.doc</i>
11:15-11:25	SunGuide™ Software Release 4.0	Modified ATIS Data Fusion Subsystem Requirements <i>(Vote)</i>	Gaarder Requirements Specification, Ballot
11:25-11:35	DMS Messaging for Multiple Lane Blockage Events		Corbin CMB.ppt
11:35- 11:45	Closing and Action Item Review		Corbin



Change Management Board



Previous Meeting Recap and Action Item Review



ACTION ITEMS

- Gene Glotzbach, Trey Tillander, and Steve Corbin will review the CMB charter and send the revised version to CMB member to review and discuss it in Aug/14/2007 CMB meeting.
- Trey Tillander will coordinate the FHP CAD ConOps for SunGuide R 4.1.
- Districts will do research on the issue of IE 6 vs IE7, and vote on Aug/14/2007 CMB.
- Manny Fontan will discuss the MicroSoft Cluster service and Oracle cluster manager in July 31, 2007 SSUG meeting and provide suggestion to CMB by August 7, 2007 to vote on August 14, 2007.
- James Bitting will document comments regarding District 2's Travel Time Enhancement and send it to Trey Tillander.
- SwRI will do further research and cost estimate of DFS requirement DF016G and send it to Gene Glotzbach and Trey Tillander. Steve Corbin will send the updated information out for voting.
- John Bonds will do further research of DF016G regarding the issue of slot and Floodgate, and provide it back to SwRI.



Change Management Board



CMB Process Revisions

Steve Corbin



Change Management Board



SunGuide™ Logo Trademark and Software copyright

Trey Tillander



SunGuide™ Logo Trademark and Software copyright



- SunGuide™ Logo filed with U.S. Patent and Trademark Office on May 16, 2007
 - Until Logo is registered use “TM”
 - Registration (®) may take several years
- SunGuide™ Software Release 2.2 also filed on May 16, 2007
 - Registration anticipated by Fall 2007
 - Each software release requires new, separate registration



Change Management Board



SunGuide™ Software Operator Training

David Chang



SunGuide™ Software Operator Training



- May 1, 2007 Provided Operator Training at D5 DeLand
- July 12, 2007 Provided Operator Training at D7 RTMC
 - D1 also participated
- R 3.0 Operator Training will be provided after R 3.0 Deployment.
- R 3.0 Admin Training will be provided by SwRI





SunGuide™ Software Operator Training



- **SunGuide™ Operator Trainer: John R. Hope**
 - B.S. Computer Engineering, UCF
 - iFlorida Model Deployment
 - OOCEA Data Server



Change Management Board



Review SunGuide™ Footprints issues

Robert Heller



Change Management Board



SunGuideSM Software Footprints Issues Review

Robert Heller



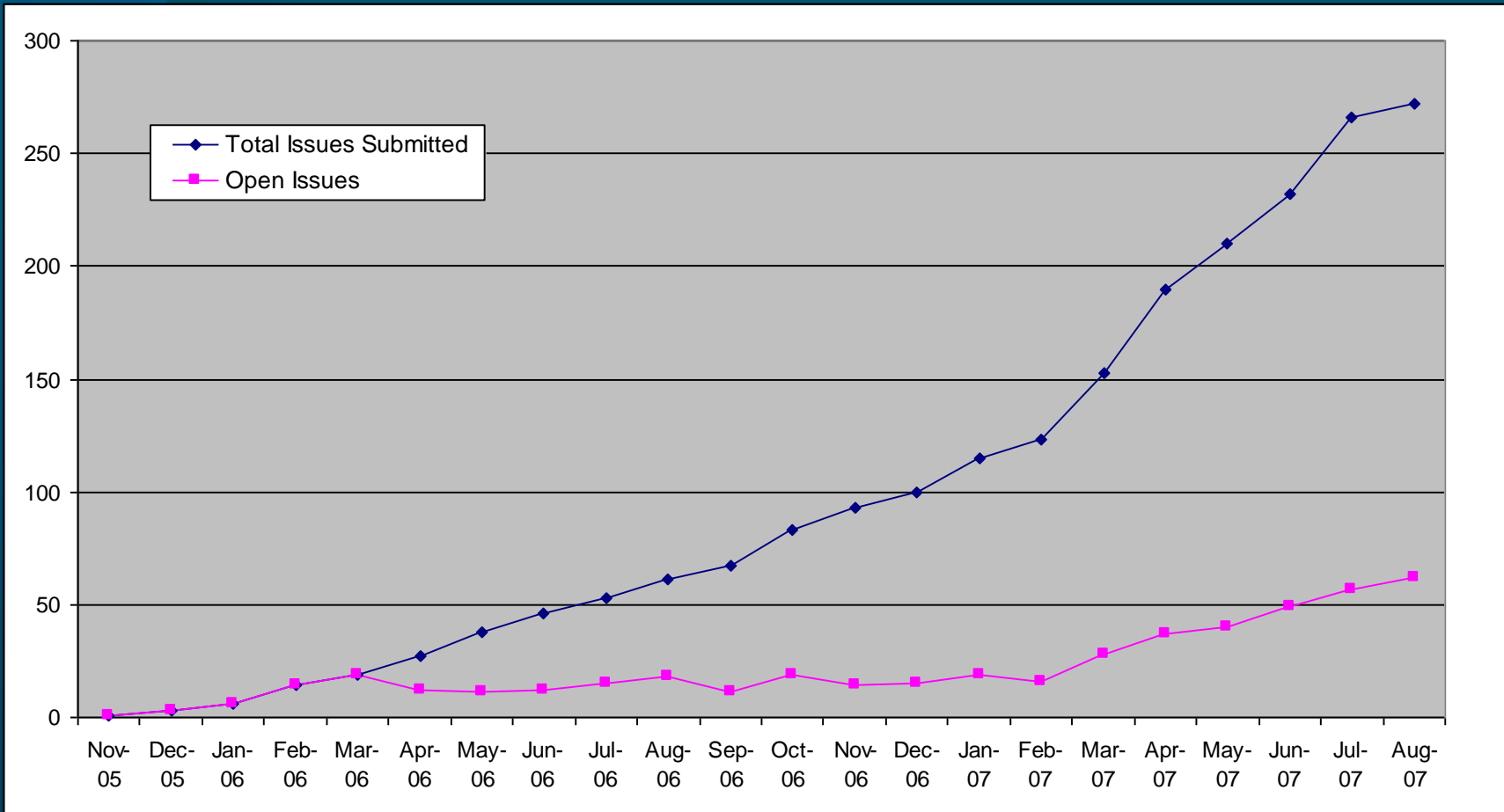
Footprints Issues Status



	New	Open	Closed	Total
Jul 31, 07	34	57	209	266
Jun 30, 07	22	49	183	232
May 31, 07	20	40	170	210
Apr 30, 07	37	37	153	190
Mar 31, 07	26	28	125	153
Feb 28, 07	19	16	107	123
Jan 31, 07	11	19	96	115
Dec 31, 06		15	85	100



All Open Issues





Old Footprints Issues



Issue Number	Date Submitted	Status	Last Edit Date	Title
<u>51</u>	6/6/2006	SwRI Addressing	7/9/2007	TVT messages with multiple destinations but missing data
<u>101</u>	11/30/2006	More Information Requested	12/12/2006	Detectors reporting 0-0-0 for both no vehicles (empty roadway), and stopped vehicles (congestion)
<u>102</u>	11/30/2006	SwRI Reviewing	12/11/2006	Allow 'failed' devices to still periodically poll
<u>107</u>	12/22/2006	SwRI Reviewing	6/1/2007	MCP / Joystick issue
<u>110</u>	1/3/2007	SwRI Reviewing	3/6/2007	MAS subsystem locks up
<u>116</u>	1/18/2007	SwRI Reviewing	1/22/2007	Improvement to Admin Editor device pages
<u>134</u>	3/1/2007	SwRI Reviewing	3/1/2007	Ability to convert NonTSS link to TSS link
<u>148</u>	3/20/2007	SwRI Reviewing	3/20/2007	Data Archive / TSS logs have inconsistent timestamps
<u>157</u>	3/22/2007	Needs FDOT Approval	7/9/2007	Lat & Long for SunGuide in Admin Editor
<u>163</u>	3/30/2007	SwRI Addressing	4/27/2007	DMS/MAS failing to post messages
<u>174</u>	4/5/2007	SwRI Reviewing	4/11/2007	CCTV Status does not start as active
<u>176</u>	4/5/2007	SwRI Reviewing	4/6/2007	Databus does not stop gracefully
<u>177</u>	4/5/2007	SwRI Reviewing	4/6/2007	C2C Client Service does not stop gracefully
<u>179</u>	4/6/2007	Needs FDOT Approval	6/12/2007	Video tours using VBrick 6000 Series Decoder
<u>183</u>	4/11/2007	Needs FDOT Approval	6/11/2007	Admin Editor/IM/Device Templates/Road Closed Template



New Footprints Issues



Issue Number	Date Submitted	Status	Last Edit Date	Title
<u>185</u>	4/12/2007	SwRI Reviewing	6/1/2007	CCTV or MCP drops leading zeros
<u>186</u>	4/13/2007	More Information Requested	6/13/2007	NIML Detector Recommended Configuration
<u>189</u>	4/19/2007	Issue Submitted	4/24/2007	Cannot Edit Message Database
<u>193</u>	4/23/2007	SwRI Reviewing	6/12/2007	IIS Admin Editor Permissions
<u>196</u>	4/24/2007	SwRI Reviewing	6/1/2007	MCP stops switching video
<u>206</u>	5/4/2007	More Information Requested	7/16/2007	Script Error using Device Linking Editor
<u>212</u>	5/11/2007	More Information Requested	8/6/2007	SAS Continued
<u>214</u>	5/16/2007	Needs FDOT Approval	5/30/2007	Running SunGuide GUI without opening the map
<u>215</u>	5/17/2007	SwRI Reviewing	7/13/2007	Video switching of VBrick stream on iMPath decoder
<u>216</u>	5/17/2007	Needs FDOT Approval	6/11/2007	Allow events to specify multiple directions
<u>217</u>	5/17/2007	Needs FDOT Approval	6/11/2007	Add "Diversion" capability to Event Management
<u>222</u>	6/4/2007	Needs FDOT Approval	6/7/2007	Need character limitation increased from 30 to 50
<u>225</u>	6/13/2007	SwRI Addressing	7/28/2007	SAS Subsystem Requires Restart
<u>232</u>	6/27/2007	SwRI Reviewing	7/20/2007	Admin Editor manufacturer pick lists
<u>233</u>	6/27/2007	SwRI Reviewing	7/20/2007	SunGuide Keeps Connections to CCTV Cameras Open when not in use



New Footprints Issues



Issue Number	Date Submitted	Status	Last Edit Date	Title
244	7/2/2007	SwRI Addressing	8/6/2007	General System Failures causing loss of DMS control and affecting several subsystems
250	7/3/2007	SwRI Addressing	7/3/2007	SG 2.2 Install on new laptop
252	7/3/2007	SwRI Reviewing	7/11/2007	Not able to move camera's in an angle
254	7/10/2007	SwRI Reviewing	7/10/2007	Refresh Geometry button on Video Wall Control Dialog not working
264	7/19/2007	Issue Submitted	7/19/2007	Incident Management will not save if all vehicles involved are Upright
266	7/20/2007	Issue Submitted	7/20/2007	DMS Temp Error
267	7/20/2007	SwRI Addressing	7/23/2007	Response plans not generated for d5
270	7/24/2007	SwRI Reviewing	7/24/2007	Wavetronix HD working in SunGuide
272	7/25/2007	SwRI Reviewing	7/25/2007	CCTV reports "no driver exists" if started after driver
273	7/28/2007	More Information Requested	7/28/2007	Notify Manager won't start in D6
274	7/29/2007	Issue Submitted	7/29/2007	Cameras spinning uncontrolled
278	8/1/2007	SwRI Addressing	8/1/2007	MCP Keyboard / Digi Port Server not connecting to MCP Manager in D7
280	8/1/2007	Issue Submitted	8/1/2007	DMS support of new Daktronics brand sign with a 9X5 font
281	8/2/2007	SwRI Addressing	8/2/2007	TSS won't start
282	8/2/2007	SwRI Addressing	8/2/2007	C2C WebServer configuration



Footprints Issue #101



- **Travel times are reported high at night**
 - District 4 originally reported this issue
 - District 5 recently reported the same
- **Travel times are computed by averaging speeds across lanes**
 - No vehicles (no traffic, closed lane, etc.)
 - Stopped traffic (incident)
- **SWAM # 12, TM004T2: Travel time computations shall use speed values greater than zero (0).**
- **How does FDOT want travel times reported when detectors report zero speed?**
 - Not available?
 - Free flow traffic?
 - Operator interaction?



Footprints Issue #222



- Increase character limit beyond 30 characters
- NTCIP 1104: Center to Center Naming Convention Specification
 - {CountryID}"/"{StateID}"/"{OwnerID}"/"{CenterID}"/"{ObjectKind}"/"{ObjectType}"/"{ObjectInstance}
 - Example: "US/FL-D5/District 5/Device/DMS/Kepler @ SR 44 W"
- SunGuide impact
 - Appearance in drop down lists
 - Affects many subsystems
 - Could implement as part of C2C



Footprints Issue #222 (cont)



- **SunGuide impact**
 - Admin editors need to be all modified
 - GUIs would need to have wider fields
 - C2C identifiers all at 36 - would need to be expanded
 - C2C test client would need updating
 - SUM would need all new GUI snapshots
 - Variety of documents would need to be updated
 - Have to "adjust" all existing operational databases



Footprints Issue #249



- **Upgrade SunGuide Map to DynaMap Version 9.1**
 - Version 9.1 received
 - Converted to XML fragments
 - Will be part of Release 3.0 installation



Change Management Board



SITSA Update Process

Tahira Faquir



Change Management Board



BREAK



Change Management Board



SunGuide™ Software Supported Environment – Internet Explorer

Trey Tillander



IE 6 vs IE 7



- District 2 and 4 running IE 6
- District 5, 6, and 7 running IE 7
- All Districts (with exception of Turnpike) have indicated that transition to IE 7 is OK.



IE 6 vs IE 7



- **Operator interface standard is IE 6**
 - Develop with IE 6 and IE 7 in lab
 - Test with IE 6
- **Anecdotal evidence is IE 7 25% faster rendering engine**
- **Recommend transition to IE 7 for performance**



IE 6 vs IE 7



- CMB Vote



Change Management Board



SunGuide™ Software Supported Environment – Clustering

Craig Vahle



SSUG comments re: Clustering



- **Craig Vahle, IT Manager for District 4**
 - Microsoft Certified System Engineer (MCSE) since 1998
 - Proficient with HP servers and SANs
 - Installed first SAN in 2001 while working for an HP Reseller
- **FDOT District 4**
 - First District to install SunGuide
 - Activated SunGuide on Cluster one week after initial installation
 - Running both Oracle and Application Servers in Cluster mode



Document Cluster Deployment



- **VDD needs to include instructions for cluster deployment**
 - Release 2.2.2 VDD (Steve Corbin, D4)
 - D4, D6 are utilizing MSCS and Oracle Cluster
- **SwRI provided ROM to central office (6/27/2007)**
 - Described the effort (next slide)
 - Time to complete: 8 weeks
 - Budgetary estimate: \$53,337



Microsoft Cluster Services

Oracle Cluster Manager



- Database Cluster documentation: describe how to utilize / configure a cluster to support the Oracle database
- Process Evaluation: the inter-relationships between the SunGuideSM processes will be evaluated to create a table / discussion of splitting processes across a cluster
- Standards setup: using an FDOT provided number of clustered computers, create a “standard” deployment scenario
- Create documentation: create a single document that describes the above activities, (assuming knowledge of MSCS and OCM)
- Build a site: using the documentation build a site from scratch to assure that the documentation is accurate
- Rework based on FDOT comments



Why use Clustering?



- **High Availability**
 - All components of hardware and software have redundancy
 - Redundancy activates automatically, even when administrator is not available
 - Standards Based, vendors such as Microsoft, Oracle, HP and Dell have support for clustering
 - Minimal knowledge needed to keep SAN running after initial installation
 - Feature of Windows 2003 Enterprise server (i.e. not a separate product)



Without Clustering....



- **Hardware failures will likely result in downtime of critical systems**
- **Software Upgrade Processes requires scheduled downtime:**
 - **Shut down SunGuide**
 - **Install new version of SunGuide on servers (can take hours)**
 - **Reactivate SunGuide on servers**
 - **Test SunGuide**
 - **If there are problems, shut down SunGuide and reinstall the original version (can take hours again)**
- **Issues with this process:**
 - **Too much downtime**
 - **Temptation to leave upgrade in place even if there are problems**



Using Clustering to minimize downtime



- Hardware problems do not translate into downtime
- New versions of software and patches can be installed with less downtime to the operations group and with more options for recovery if the installation goes poorly
- Operations can continue to use SunGuide during the installation process, which can be a several hour process with multiple servers and new versions of SunGuide
- Installation can span more than one day
 - Operations continues to work
 - SwRI and IT staff have time to properly troubleshoot issues without slamming in quick fixes
 - Operations is less likely to have to deal with “work arounds” to problems



Clustering: The Rolling Upgrade



- **Before: Sub-systems distributed between servers**



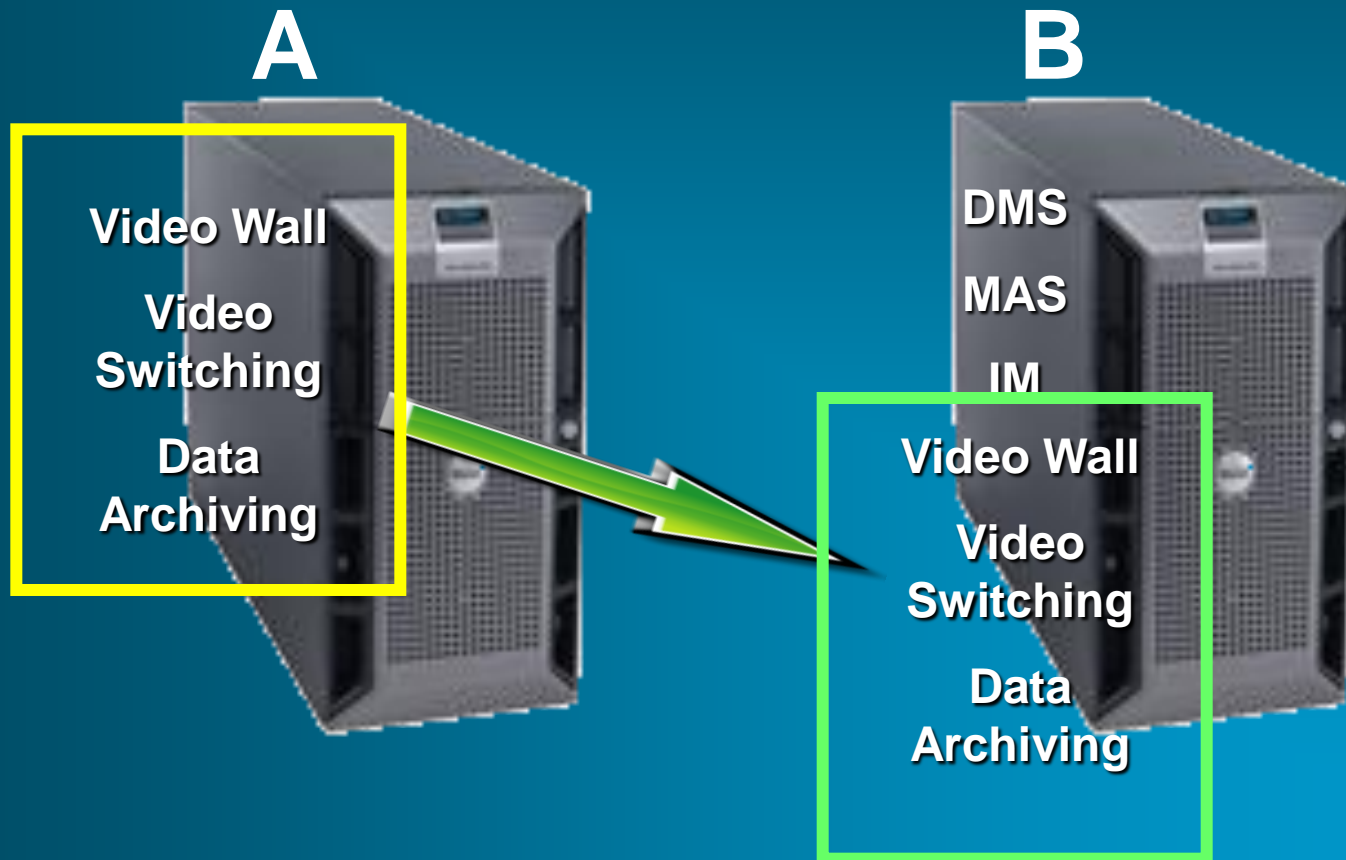
Operations Status: Normal



How to do a Rolling Upgrade



- Migrate SunGuide apps to half of cluster



Operations Status: 1 to 3 minute interruption



How to do a Rolling Upgrade



- Install Patch to the now unused half

A

Install
Patch



B

DMS
MAS
IM
Video Wall
Video
Switching
Data
Archiving



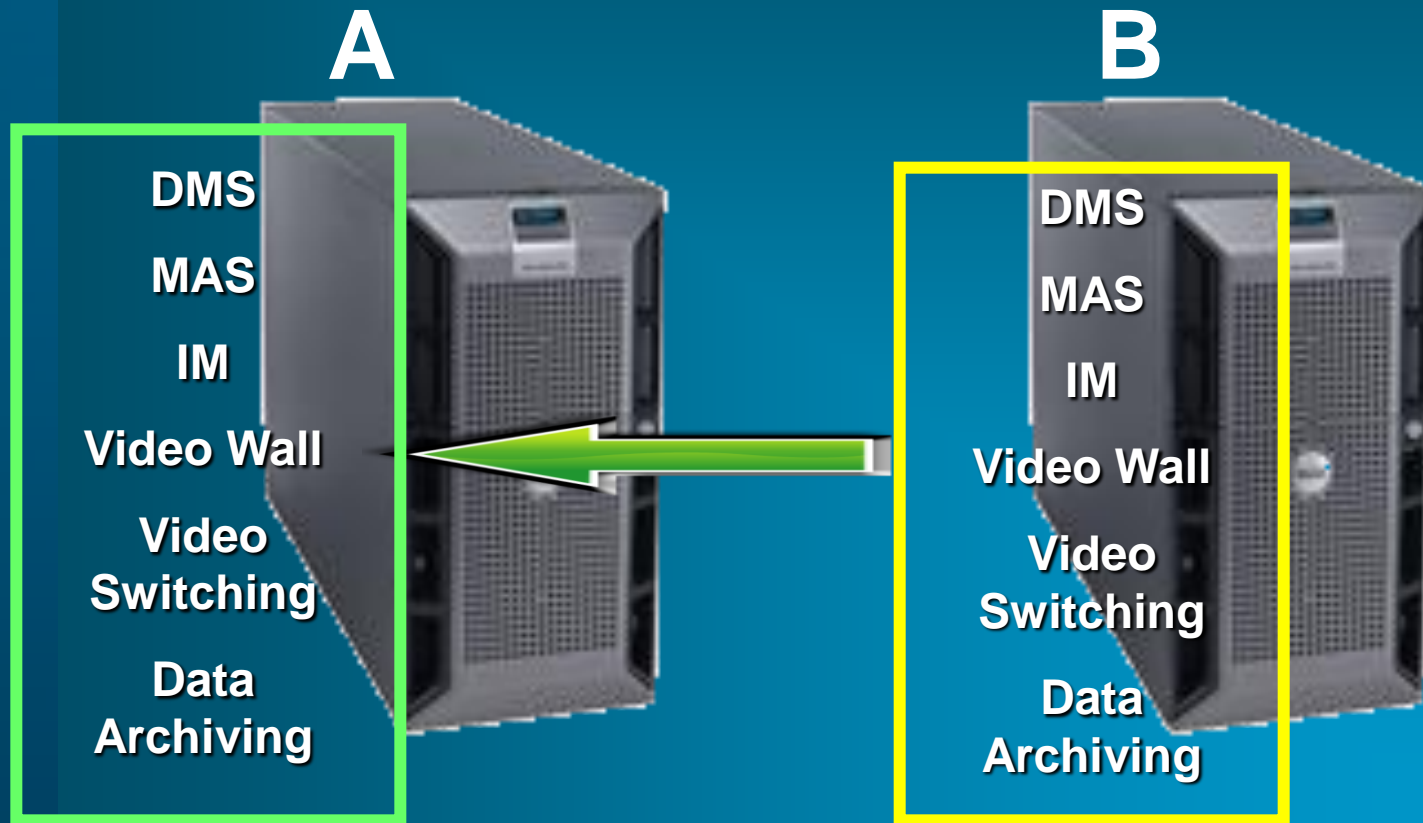
Operations Status: Operating normally on Server B



How to do a Rolling Upgrade



- Migrate SunGuide apps to newly patched servers



Operations Status: 1 to 3 minute interruption



How to do a Rolling Upgrade



- Test operation



Operations Status: Operating Normally / Testing Server A



Clustering – the Cons



- Hardware and software to run clustering will cost more
- Current IT staff will likely have to learn a new feature of Windows that they've previously not used
- Outsourced IT services to install clustering and SAN's bill at a higher rate
- Longer setup time
- SunGuide Executive Handler is no longer used to start and stop SunGuide services – Microsoft Cluster Manager
- Upgrades are now performed in a regimented process that will take more of IT staff's time



Costs of SunGuide w/Clustering



- **Total Hardware and Software at District 4, \$133,000**

Item	Cost
Storage Area Network	\$56,317
Six High Availability Servers	\$5,585 each
Two SAN Cards per server	\$1,050 each
Windows 2003 Enterprise Software for six servers	\$1,430 each
Tape Library	\$17,812
Rack and accessories	\$3,906



Desired Outcomes



- **SwRI better understands clustering and SANs**
- **CMB adopts clustering as the recommended method for SunGuide installation**
- **Districts migrate to Clustering for their SunGuide application servers and Oracle database servers**
- **Districts enjoy the following benefits:**
 - **Improved redundancy of critical systems**
 - **High level of uptime**
 - **Improved upgrade process with minimal downtime during software upgrades**
 - **Improved support from SwRI due to standardized installation**



Recommendation



- **SwRI should proceed with report**
- **Report should be delivered to Districts in advance of SunGuide 3.0 rollout**
- **Districts should migrate to standard implementation of SunGuide with clustering**

- **Questions?**



Change Management Board



SunGuide™ Software Release 3.1 D2 Additional Travel Time Subsystem Requirements

Pete Vega



Change Management Board



SunGuide™ Software Release 4.0 Modified ATIS Data Fusion Subsystem Requirements

Erik Gaarder



Modified ATIS DFS Requirements - 1



Delete:

- **DF026G** A monitoring display shall display the current Floodgate status for each “floodgate category,” allowing the operators to see which floodgate categories have messages and their status (barge-in on/off) as well as any other parameters that they might be able to set.

Reason:

- **DF026G** is a duplicate to DF016G. “slot” and “floodgate category” have the same meaning



Modified ATIS DFS Requirements - 2



Delete:

- **DF016G2** The GUI shall be configured so that a supervisor or administrator can enter information for another District provided the other District agrees.

Reason:

- **Delete per CMB (Change Management Board) discussion on 7-9-2007 and 7-12-2007**



Modified ATIS DFS Requirements - 3



Original:

- **DF001C** The Center-to-Center Plug-in component of the Data Fusion subsystem shall use the TMDD 2.0 Standard modified to use the SAE J 2540-1 July 2002 Table 2 and Table 11 message data sets for data transmission to the Information Dissemination Subsystem.

Modified:

- **DF001C** The Data Fusion subsystem shall use Transmission Control Protocol/Internet Protocol (TCP/IP) connectivity, the Hypertext Transfer Protocol (HTTP), and XML data format based shall be consistent with TMDD 2.1 (and NTCIP 2306) and the emerging TMDD 3.0 (and NTCIP 2306) using SAE J2540 IITS codes to capture event information for transmission to the IDS.

Reason:

- To match change made to S017 which was approved by **CMB**



Modified ATIS DFS Requirements - 4



Original

- **ID001C** The Center-to-Center Plug-in component of the Data Fusion subsystem shall use the TMDD 2.0 Standard modified to use the SAE J 2540-1 July 2002 Table 2 and Table 11 message data sets for data reception from the Data Fusion Subsystems.

Modified:

- **ID001C** The Information Dissemination subsystem shall use Transmission Control Protocol/Internet Protocol (TCP/IP) connectivity, the Hypertext Transfer Protocol (HTTP), and XML data format based shall be consistent with TMDD 2.1 (and NTCIP 2306) and the emerging TMDD 3.0 (and NTCIP 2306) using SAE J2540 IITS codes to receive event information from the DFS.

Reason:

- **To match change made to S017**



Change Management Board



DMS Messaging for Multiple Lane Blockage Events

Steve Corbin



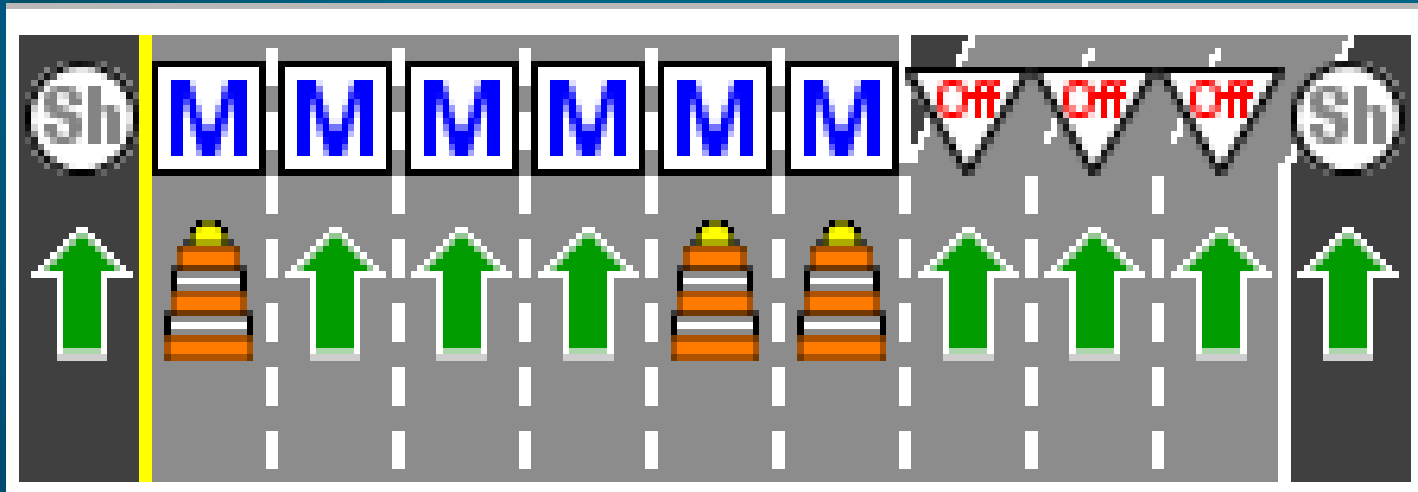
DMS Messaging Multiple Lane Blockage Events



- **How to message for non consecutive lane blocking events**
 - **Current messaging**
 - **Possible solutions**
 - **Statewide Decision**



Non-consecutive Lanes Blocked





IM: Response Plan



Response Plan: 80112 - Windows Internet Expl...

Event# 385042

Add DMS Add HAR Add Predefined Plan

95NB18 [District 4] Edit Remove
Duration: 1 days, 0:00:00 Priority: 11 Owner: IM System
**THREE OF SIX LANES
BLOCKED BEFORE
BROWARD BLVD**

595EB05 [District 4] Edit Remove
Duration: 1 days, 0:00:00 Priority: 8 Owner: IM System
**NB 95 THREE OF SIX LN
BLOCKED BEFORE
BROWARD BLVD**

View Suggestions View Selected Devices
Activate Plan Terminate Plan



As is: Percentage Blocked



**THREE OF SIX LANES
BLOCKED BEFORE
BROWARD BLVD**



Option 1: Number Blocked



**THREE LANES
BLOCKED BEFORE
BROWARD BLVD**



Option 2: Two-phase



**ONE LEFT LANE
BLOCKED BEFORE
BROWARD BLVD**



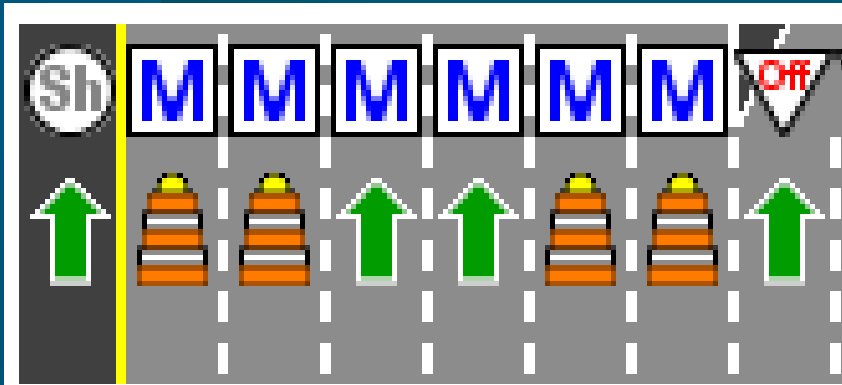
Option 3: Greater Number



**TWO RIGHT LANES
BLOCKED BEFORE
BROWARD BLVD**



What if?



Response Plan: 80112 - Windows Internet Expl...

Event# 385042

Add DMS Add HAR Add Predefined Plan

95NB18 [District 4] [Edit](#) [Remove](#)
 Duration: 1 days, 0:00:00 Priority: 11 Owner: IM
 System
**FOUR OF SIX LANES
 BLOCKED BEFORE
 BROWARD BLVD**

595EB02 [District 4] [Edit](#) [Remove](#)
 Duration: 1 days, 0:00:00 Priority: 11 Owner: IM
 System
**NB 95 FOUR OF SIX LNS
 BLOCKED BEFORE
 BROWARD BLVD**

View Suggestions View Selected Devices
 Activate Plan Terminate Plan



Option 4: High Speed Lane



**ONE LEFT LANE
BLOCKED BEFORE
BROWARD BLVD**



Option 5: Available Lanes



**THREE CENTER LANES
OPEN BEFORE
BROWARD BLVD**



Option 6: Diagrams



**THREE LANES BLOCKED
BEFORE BROWARD BLVD**

X ↑ ↑ X X



Change Management Board



Closing and Action Item Review

Steve Corbin