



Change Management Board Meeting

July 7th, 2009

Video Conference: CO- Burns Video Bridge 1

Audio: 850 - 414 - 4977 or 866 - 374 - 3368 ext 4977

07/07/2009

Change Management Board



Welcome and Call for Quorum

Peter Vega, CMB Chairman



Agenda



Time	Item	Lead
1:00 - 1:05	Welcome and Call for Quorum	Vega
1:05 - 1:15	Previous Meeting Recap and Action Item Review	Vega
1:15 - 1:25	D5 ITS Architecture Update	Smith
1:25 - 1:35	SunGuide – FL-ATIS: Pre-recorded messages	Heller
1:35 - 1:50	SunGuide R 4.2, R 4.2.1 and R 4.2.2 (Enhancement/Mod between FAT and IV&V)	Krishnamurthy
1:50 – 2:00	95 EL Data Integrity	Chang
2:00 – 2:10	95 EL Enhancement Proposal	Laird
2:10 – 2:30	SunGuide – RPG ConOps	Fontan
2:30 – 2:50	SunGuide Map Alternatives	Heller
2:50 – 3:10	Performance Measures Report: Incident Duration	Krishnamurthy



Agenda (cont')



Time	Item	Lead
3:10 – 3:15	Break	
3:15 – 3:30	SunGuide – Polling Failed (D6)	Heller
3:30- 3:40	SunGuide – Excessive TSS Alerts (D5)	Heller
3:40 – 3:50	FTE migration	Easterling
3:50 – 4:00	SunGuide “Right click menu” – Changes proposal	Laird
4:00 - 4:15	Inrix data for 511	Sanyal
4:15 – 4:20	Other Districts' issues	Vega
4:20 - 4:30	Closing and Action Item Review	Vega



Change Management Board

Previous Meetings Recap and Action Items Review

Peter Vega



Apr. 08 09' CMB Action Items

1. District 5 (Mike Smith) to provide detail of the update regarding Ocala/Marion County ITS Architecture to Trey (previous meeting's action item) – **In CMB Agenda today.**
2. Robert Heller to forward emails to Arun that SwRI asked Central Office questions about level of detail for Generic Installation Guideline document. - **Done.**
3. Jennifer Heller to follow up with Eddy Grant on previous CMB Action Item #10 about SunGuide FHP requirement IDs: CA005A3 and CA005A4.
4. SwRI to investigate the "crash" terminology used in SunGuide. Mark Laird has submitted FP #1065 on this.
5. Central Office (Arun Krishnamurthy) to discuss with District 6 and SwRI to make decision on the "crash" versus "incident" issue. – **Done, will use Crash.**



Apr. 08 09' CMB Action Items

6. TERL (Trey Tillander) to provide recommendation on the SwRI's proposed solution to eliminate the conflict on DMS sequences (Footprint # 1123) – **Recommendation provided to D2, and updated the FP status.**
7. Central Office to send out a procedure for Districts to confirm their Footprints issues have been resolved. - **Done.**
8. Central Office to investigate Microsoft SQL server license with FDOT. - **On-going.**
9. SwRI to provide a whitepaper on the use of Microsoft SQL server with SunGuide on the stored procedures.
10. Central Office to find out what map FHP is using. - **MapQuest**
11. SwRI (Robert Heller) to find out if Microsoft map has county's line distinction.



Change Management Board



District 5 ITS Architecture Update

Mike Smith



Change Management Board



SunGuide – FL-ATIS: Pre-recorded messages

Robert Heller



Pre-Recording Floodgate Messages



- **Problem:** Will there be any functionality for storing of pre-recorded messages to be reused?
 - Additional work load
 - Increased chance of errors
 - Availability of 'voices' at all hours of the day and night.
- **Solution:** SunGuide store messages for later retrieval
 - Unique identifier
 - Add / "Delete"



Possible GUI



Saved Messages	
Message 1 Message 2 Message 3 Message 4 Message 5 Message 6 Message 7 Message 8 Message 9 Message 10	Message name: Message 1 Message: ● ▶ ■ Current recording length: 1 second Text of message: Test message Save



Possible GUI



Floodgate Status | **Floodgate Messages** | **Saved Messages** 13:56:00

Select Floodgate:

☐ Statewide
☐ Location
☒ Full Roadway
☐ Entity

Region:

Northeast

County:

NONE

Roadway:

Full roadway:

I-10

Entity:

Floodgate number:

☐ 1 ☒ 2 ☐ 3 ☐ 4

☒ English ☐ Spanish

I-10 [Floodgate 2: English]

Common Settings

Call Settings:

Severity:

Associated event:

Comment:

Common settings apply to both English and Spanish messages
Associated event and Comment will be logged, but not sent to C2C

☒ Allow barge-in ☒ End call after message

Unknown

None

511 Floodgate Message

Message:

Current recording length:

Text of message:

Save As...

Message 1

Load Message

1 second

Test message

Web Site Text Banner

Banner retrieved:

Banner text:

07-02-2009 13:51:04

Test Banner

Save

Delete



Possible GUI



511 Floodgate Message

Message:

Current recording length:

Text of message:



Save As...

Message 1 ▼

Load Message

1 second

Test message



Possible GUI



Floodgate Status | **Floodgate Messages** | **Saved Messages** 13:56:00

Saved Messages

Message 1
Message 2
Message 3
Message 4
Message 5
Message 6
Message 7
Message 8
Message 9
Message 10

New Delete

Message name:

Message:

Current recording length: 1 second

Text of message:

Test message

Save



Pre-Record Floodgates Req'

- **DF031A** SunGuide shall provide the ability for an operator to create a floodgate message and store the floodgate message for later use.
- **DF031A1** SunGuide shall provide the ability for an operator to create a unique name for the message.
- **DF031B** SunGuide shall provide the ability for an operator to select a previously created and stored floodgate message and "activate" that message.
- **DF031B1** SunGuide shall display a list of previously stored floodgate messages to the operator for selection.
- **DF031B2** SunGuide shall display the list of previously stored floodgate messages sorted either by date of creation, date of last use or name assigned by the operator that created the message.
- **DF031C** SunGuide shall provide the ability for an operator to delete previously stored floodgate messages



CMB Vote



- ***Vote***



Change Management Board



SunGuide R 4.2, 4.2.1 and 4.2.2 Enhancement/Modification between FAT and IV&V

Arun Krishnamurthy



Release 4.2 New Features



- FHP CAD Interface
- VisioPaD Enhancement
- D1/D7 Road Ranger Enhancement
- Travel Time Performance Enhancement (uncapped data)
- 44 FootPrints issues



R 4.2 FAT Enhancements



- 100% passing rate
- Enhancements to FHP CAD Interface were requested.



R 4.2.1



- Enhancements from FAT were included
- R 4.1.3 Patch 1,2, 3 Hotfix
- R 4.2.1 IV&V
 - 87% passing rate
 - 42 issues were identified



R 4.2.2



- All issues identified in R 4.2.1 during IV&V
- New feature for I-95 Express Lanes Data Integrity
 - Persist toll requests through PS subsystem restarts
 - Quality control system for tolls
 - Toll Viewer usability updates
 - Logging of previous day's activity
- Database Enhancement: ODS Modularization
- New driver
 - Teleste MPC-E1 and MPC-D1 encoders/Decoders
- EM subsystem
 - Send user notification message when event commands to FL-ATIS fails
- FootPrints issues
- CO is to conduct verification at TERL



R 4.2.2 Deployment and Training



- Installation CD provided to Districts/Agencies
- Training materials ready
- CO will work with Districts/Agencies individually to provide on-site training after the deployment



Change Management Board



95 EL Data Integrity

David Chang



95 EL Data Integrity

- **Problem:**
 - Inconsistencies posted to toll rate and gantry DMS and SunPass Patron system due to communications or processing of toll rate messages sent from SunGuide to SunPass Patron.
- **Solution:**
 - Persist toll requests through PS subsystem restarts
 - Quality control system for tolls
 - Toll Viewer usability updates
 - Logging of previous day's activity
 - Database Enhancement: ODS Modularization



95 EL Data Integrity Req'

- **ML016I** The Express Lanes module shall use unique sequentially assigned SunGuide IDs with each toll rate message.
- **ML017I** If the Express Lanes module goes down or is restarted, it shall resume trying to send to the Middleware all rate requests pending prior to the restart.
- **ML017I1** Pending rate requests shall be stored in non-volatile memory, i.e. table(s) in the current SunGuide database.
- **ML017I2** Upon restart, Express Lanes module shall start up in the Open/Normal mode according to the referenced requirements ML012P, ML017P, ML018P, ML019P and ML020P.



95 EL Data Integrity Req'

- **ML018I** When SunGuide encounters an error communicating a rate message to the middleware, SunGuide shall record in the database with the rate request details regarding the error.
- **ML018I1** When SunGuide encounters an error communicating a rate message to the middleware, SunGuide shall record in the database the rate message.
- **ML018I2** When SunGuide encounters an error communicating a rate message to the middleware, SunGuide shall record in the database an indication of the cause of the failure (e.g. sending of message or Middleware processing of the message).
- **ML018I3** When SunGuide encounters an error communicating a rate message to the middleware due to middleware processing failure, SunGuide shall record in the database with the rate request the error string returned by the Middleware.



95 EL Data Integrity Req'

- **ML018I4** When SunGuide encounters an error communicating a rate message to the middleware due to communications failure, SunGuide shall record in the database with the rate request information available regarding possible cause of the communications error.
- **ML016R** SunGuide shall record the returned SunPass Rate ID with SunGuide rate requests when a rate request succeeds.
- **ML016R1** SunGuide Toll Viewer shall display the SunPass Rate ID with the SunGuide Rate ID in the Toll Viewer when in detail mode.
- **ML026A** The Express Lanes module shall automatically verify at defined configurable frequency for a configurable period that toll rates used by the Middleware match those recorded by Express Lanes module.



95 EL Data Integrity Req'

- **ML026A1** This module shall format a summary of the comparison to be sent by email.
- **ML026A2** The comparison shall run at a configurable frequency.
- **ML026A3** The comparison shall process data from a configurable period.
- **ML026A4** The email shall be sent to a configurable email list.
- **ML026A5** The email shall contain a list of discrepancies found.
- **ML026A6** If no discrepancies found the summary shall so state.
- **ML026A7** The email shall state when the comparison occurred and what period the comparison processed.



95 EL Data Integrity Req'

- **ML026A8** The summary shall be divided into sections, each section shall provide the summary for an individual toll segment.
- **ML017R** An additional view of the Toll Viewer shall provide the rates in effect with starting and ending date and time.
- **ML017R1** The ending time shall be subsequent starting time minus one second.
- **ML017R2** This view shall be an additional choice added to the Toll Viewer labeled appropriately.
- **ML017R3** Consecutive time periods during which the rate and reason do not change shall appear as a single entry with the beginning time from the first period for that rate and the ending time from the last period with that rate.
- **ML017R4** The view shall include a “reason” for the toll.



95 EL Data Integrity Req'

- **ML010S** SunGuide shall output all logged DMS messages, toll rate messages, override, and applicable event data to a formatted text file.
- **ML010S1** This process shall run daily (The use of the word process is not meant to imply this is a separate Windows process.)
- **ML010S2** Each file produced shall contain 24 hours of data, beginning at 00:00:00 and ending with 23:59:59.
- **ML010S3** At the time the process runs it shall output data for all previously missed data runs.
- **ML010S4** The file format shall be XML of the same format generated by the Toll Viewer Web Service for inclusion in its SOAP messages.
- **ML010S5** The process shall generate one file per segment per data period.



95 EL Data Integrity Req'

- **ML010S6** There shall be an option to cause SunGuide to execute this process on demand and specify the starting date, segment identifier, file name and “destination of the file.”
- **ML010S7** File contents shall be chronologically ordered by the time sent for toll rates and sign messages, time the override was entered by the operator, and event creation time.



CMB Vote



- ***Vote:***



Change Management Board

I-95 Express Lanes - Enhancements Proposal

Mark Laird



Process



- Initial proposal
- District 6 reviews: March-April
- Expanded reviews with CO, D4, Turnpike: May-June
- Review with SwRI in June
- Presentation to the CMB



Overview



- Availability
- Ease of Use
- Additional Enhancements



Availability

- **Express Lanes Management requires a high availability solution**
 - **Goal was standalone Express Lanes**
 - **PS, DMS, Database Critical**
 - **After meeting with SwRI and assessing complexity, deferred to consider alternatives**
 - **Alternative proposals**
 - **Hot standby secondary system and data transfer**
 - **Question of dealing with database design changes**
 - **Parallel SunGuide installation for Express Lanes**
 - **Requires connection to primary – may not be simpler**



Ease of Use Issues

- Express Lanes require management of
 - Rate changes
 - Lane closures
 - Equipment failures
 - Communications failures
 - Software failures or restarts
- Procedures for a single segment are about 30 pages



Ease of Use Enhancements



- **Integrate Express Lanes Watcher**
 - Directly transfer Dynamic Rates and Gantry Delays
 - Support Management Scenarios
 - Support online procedures
 - Operator performance monitoring
- **Management Scenarios**
 - Automate portions of common procedures
 - Guide operators through handling of EL issues
 - Provide operator reminders



Additional Enhancements



- **Startup behavior**
- **Lane Status Signs**
- **Terminology Improvements**
- **Change to Middleware Rate Adjustment**
- **Offline Rate Updates**
- **Toll Viewer Changes**
- **User Identification**
 - **Windows logon ID**



Change Management Board



SunGuide – RPG ConOps

Manuel Fontan



Timeline



- **Original RPG ConOps Draft submitted 01/05/09**
 - Received comments from SSUG, CO, D2, D4, D5 & SwRI
 - Held several meetings afterward with SwRI, CO, D4, and D5 to clarify comments
- **CO provided SwRI support to finalize document (Roger Strain)**
- **All comments were incorporated in RPG ConOps Release 1.0 and provided to the CMB for review**



Response Plan Editor GUI



Response Plan - Windows Internet Explorer

file:///C:/Development/FDOT/SDF/RPG%20Conops%20HTML%20Mockups/Post-D6%20Revision/pendingPlan.html#

Response Plan

Response Plan Editor **Pending Plan** Active Plan Event ID: 1134

Filter: 10 shown of 10 total (No filter applied) Reset Filters Select All Select None

Details	Pending Message (Click to edit)	Alerts	Current Message (Click for queue)
DMS 595EB10 [District 4] Active	 Until Cancelled 1134 5		 Until Cancelled 1134 5
DMS 595WB10 [District 4] Active	 Until Cancelled 1134 7		N/A N/A
DMS 95NB23 [District 4] Active	 Until Cancelled 1134 9		 Until Cancelled 1134 9
DMS 95NB27 [District 4] Active	 Until Cancelled 1134 10		 Until Cancelled 1134 10
DMS 95NB31 [District 4] Active	 Until Cancelled 1134 11		 Until Cancelled 1134 11

Suggestions	Additional Actions	Load/Save	Activation
DMS distance: 10 HAR distance: 25 Available Plans: Default Generated Plan Load Plan More Options	Add Items Merge Selected Items	Save Plan Load Active Plan Revert to Saved Plan Save Predefined Plan...	Save and Activate Plan Schedule Activations...

Done

My Computer 100%



Filters



Response Plan - Windows Internet Explorer

C:\Development\FDOT\SDF\RPG Conops HTML Mockups\Post-D6 Revision\pendingPlan.html

Response Plan

Response Plan Editor

Pending Plan Active Plan

Filter: 10 shown of 10 total (No filter applied) ▶

Location	Queue State	Message	Device Type	Pending Phases (DMS Only)
On Route	☒ Will Post	☒ All	☒ DMS	☒ Single Phase
☒ I-595 EB	☒ Will Not Post	☒ Recently Added	☒ HAR	☒ Multi Phase
Off Route	☒ Merged	☒ Manually Edited	☒ Email	
☒ I-595 WB		☒ Unsaved	☒ FL511 ATIS	
☒ I-95 NB		☒ No Longer in Plan		
		☒ Unresolved Alert		
		☒ Ramp Message		

[District 4]



Manual Messaging



Response Plan - Windows Internet Explorer

file:///C:/Development/FDOT/SDF/RPG%20Conops%20HTML%20Mockups/Post-D6%20Revision/pendingPlan.html#

Response Plan

Response Plan Editor

Pending Plan Active Plan

Event ID: 1134

Filter: 10 shown of 10 total (No filter applied) ▶

Reset Filters Select All Select None

Details	Pending Message (Click to edit)	Alerts	Current Message (Click for queue)
DMS 595EB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 5		FREeway CLOSED AT I-95 Until Cancelled 1134 5
DMS 595WB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 7		N/A N/A
DMS 95NB23 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 9		I-595 CLOSED AT I-95 Until Cancelled 1134 9
DMS	I-595 RIGHT LANE		I-595 CLOSED EXPECT LONG DELAY

Message Editing (3 devices selected)
District 4: 595EB10, 595EB12, 595EB14

Message Libraries

- PSAs
- Special Events

Sample Display

**RIGHT LANE
CLOSED AT
I-95** **EXPECT DELAY
OR
USE ALTERNATE ROUTE**

Message Text

RIGHT LANE
CLOSED AT
I-95

EXPECT DELAY

☐ Use capital letters only
☐ Edit raw MULTI

Search:

Message Attributes

Priority: 5

Page timing:

☒ Default

☐ Page 1: 3.0 seconds on, 1.0 seconds off
☐ Page 2: 3.0 seconds on, 1.0 seconds off

Save

Cancel Save

Done

My Computer 100%



Message Queue



Response Plan - Windows Internet Explorer

file:///C:/Development/FDOT/SDF/RPG%20Conops%20HTML%20Mockups/Post-D6%20Revision/pendingPlan.html#

Response Plan

Response Plan Editor Pending Plan Active Plan Event ID: 1134

Filter: 10 shown of 10 total (No filter applied) Reset Filters Select All Select None

Details	Pending Message (Click to edit)	Alerts	Current Message (Click for queue)
DMS 595EB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 EXPECT DELAY OR USE ALTERNATE ROUTE Until Cancelled 1134 5		FREWAY CLOSED AT I-95 EXPECT LONG DELAY OR USE ALTERNATE ROUTE Until Cancelled 1134 5
DMS 595WB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 7		N/A N/A
DMS 95NB23 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 EXPECT DELAY OR USE ALTERNATE ROUTE Until Cancelled 1134 9		I-595 CLOSED AT I-95 EXPECT LONG DELAY OR USE ALTERNATE ROUTE Until Cancelled 1134 9
DMS 95NB27 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 10		I-595 CLOSED AT I-95 EXPECT LONG DELAY OR USE ALTERNATE ROUTE Until Cancelled 1134 10
DMS	I-595 RIGHT LANE CLOSED AT DO NOT EXIT		I-595 CLOSED EXPECT LONG DELAY OR

Current Queue (595EB10 [District 4])

RIGHT LANE CLOSED AT I-95 EXPECT DELAY OR USE ALTERNATE ROUTE Until Cancelled 1134 5	CONGESTION AHEAD 4 MILES Until Cancelled 1208 10	TRAVEL TIME TO I-95 4-6 MIN Until Cancelled	TRAVEL TIME TO US-1 6-8 MIN Until Cancelled
---	--	---	---

View Queue Close Queue

Done My Computer 100%



Merging



Response Plan - Windows Internet Explorer

C:\Development\FDOT\SDF\RPG Conops HTML Mockups\Post-D6 Revision\mergePlan.html

Response Plan

Response Plan Editor

Pending Plan Active Plan **Merging**

Event ID: 1134

Filter: 10 shown of 10 total (No filter applied) Reset Filters

Details	Pending Message	Merge Mode	Saved Message
DMS 595EB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 5	☐	FREeway CLOSED AT I-95 Until Cancelled 1134 5 EXPECT LONG DELAY OR USE ALTERNATE ROUTE
DMS 595WB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 7	☐	N/A N/A
DMS 95NB23 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 9	☐	I-595 CLOSED AT I-95 Until Cancelled 1134 9 EXPECT LONG DELAY OR USE ALTERNATE ROUTE
DMS 95NB27 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 10	☒	I-595 CLOSED AT I-95 Until Cancelled 1134 10 EXPECT LONG DELAY OR USE ALTERNATE ROUTE
DMS 95NB31 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 11	☐	I-595 CLOSED AT I-95 Until Cancelled 1134 11 EXPECT LONG DELAY OR USE ALTERNATE ROUTE

Instructions

To select a message, click the message. Highlighted messages will be saved.
To select page from each message, click the "Merge Mode" checkbox, then click individual pages to include/remove them.

Finish Merge

Abandon Changes Accept Merge



Scheduling



Response Plan - Windows Internet Explorer

file:///C:/Development/FDOT/SDF/RPG%20Conops%20HTML%20Mockups/Post-D6%20Revision/pendingPlan.html#

Response Plan

Response Plan Editor Pending Plan Active Plan Event ID: 1134

Filter: 10 shown of 10 total (No filter applied) Reset Filters Select All Select None

Details	Pending Message (Click to edit)	Alerts	Current Message (Click for queue)
DMS 595EB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 5		FREEWAY CLOSED AT I-95 Until Cancelled 1134 5
DMS 595WB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 7		N/A N/A
DMS 95NB23 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 9		I-595 CLOSED AT I-95 Until Cancelled 1134 9
DMS 95NB27 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 10		I-595 CLOSED AT I-95 Until Cancelled 1134 10
DMS 95NB31 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 11		I-595 CLOSED AT I-95 Until Cancelled 1134 11

Scheduled Activations

04/30/2009 10:00 AM - 04/30/2009 2:00 PM
04/30/2009 2:00 PM - 04/30/2009 9:00 PM
04/30/2009 9:00 PM - 04/31/2009 6:00 AM

Edit Activation Time
Load Scheduled Plan
Remove Activation

Schedule Details

Set activation time for Pending Plan: Apr / 30 / 2009 2 : 00 PM
Set termination time for Pending Plan: Apr / 30 / 2009 2 : 00 PM

Schedule Activation

Finish

Close Schedule View

Done My Computer 100%



Alerts



Response Plan - Windows Internet Explorer

file:///C:/Development/FDOT/SDF/RPG%20Conops%20HTML%20Mockups/Post-D6%20Revision/pendingPlan.html#

Response Plan

Response Plan Editor

Pending Plan Active Plan

Event ID: 1134

Filter: 10 shown of 10 total (No filter applied) ▶

Reset Filters Select All Select None

Details	Pending Message (Click to edit)	Alerts	Current Message (Click for queue)
DMS 595EB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 EXPECT DELAY OR USE ALTERNATE ROUTE Until Cancelled 1134 5		FREeway CLOSED AT I-95 EXPECT LONG DELAY OR USE ALTERNATE ROUTE Until Cancelled 1141 1
DMS 595WB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 7		KIDNAPPED CHILD WHITE FORD TAURUS PLATE FL 123ABC KIDNAPPED CHILD MIAMI, FL CALL POLICE *FHP Until Cancelled 1152 100
DMS 95NB23 [District 4] Active	N/A N/A		I-595 CLOSED AT I-95 EXPECT LONG DELAY OR USE ALTERNATE ROUTE Until Cancelled 1134 5
DMS 95NB27 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 10		I-595 CLOSED AT I-95 EXPECT LONG DELAY OR USE ALTERNATE ROUTE Until Cancelled 1141 10
DMS 95NB31 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 11		TRAVEL TIME TO I-75 10-12 MIN Until Cancelled 250

Suggestions Additional Actions Load/Save Activation

DMS distance: 10 HAR distance: 25

Available Plans: Default Generated Plan

Load Plan More Options ▶

Add Items ▶ Merge ▶ Selected Items ▶

Save Plan Revert to Saved Plan

Load Active Plan Save Predefined Plan...

Save and Activate Plan

Schedule Activations...

Done

My Computer 100%



Add DMS Manually to Plan



Select a DMS - Windows Internet Explorer

C:\Development\FDOT\SDF\RPG Conops HTML Mockups\Post-D6 Revision\selectDms.html

Select a DMS

DMSs

County

- Miami-Dade
- Monroe
- Palm Beach
- St. Lucie
- Indian River
- Martin
- Broward

Roadway/Direction

- Florida Turnpike NB
- Florida Turnpike SB
- I-195 NB
- I-195 SB
- I-395 NB
- I-395 SB
- I-95 NB

Message

☐ Add with default message

☒ Add with manual message

**RIGHT LANE
CLOSED AT
I-95**

**EXPECT DELAY
OR
USE ALTERNATE ROUTE**

Priority: 5

Page timing:

☒ Default

☐ Page 1: 3.0 seconds on, 1.0 seconds off

Page 2: 3.0 seconds on, 1.0 seconds off

☐ Use capital letters only

☐ Edit raw MULTI

DMS ID **Roadway / Direction** **Manual Message Fits**

DMS I-275 26.2 SB [District 7]	I-275 SB	Yes
DMS I-275 26.5 NB [District 7]	I-275 NB	Yes
DMS I-275 28.1 NB [District 7]	I-275 NB	Yes
DMS I-275 28.2 SB [District 7]	I-275 SB	Yes
DMS I-275 33.5 NB [District 7]	I-275 NB	Yes
DMS I-275 33.5 SB [District 7]	I-275 SB	Yes
DMS I-275 43.4 NB [District 7]	I-275 NB	Yes
DMS I-275 43.4 SB [District 7]	I-275 SB	Yes
DMS I-275 45.0 NB [District 7]	I-275 NB	Yes
DMS I-275 46.1 SB [District 7]	I-275 SB	Yes

Select DMSs

Done

My Computer 100%



Predefined Plan Editor GUI



Predefined Response Plan Manager - Windows Internet Explorer

file:///C:/Development/FDOT/SDF/RPG%20Conops%20HTML%20Mockups/Post-D6%20Revision/predefinedPlanMa

Predefined Response Plan Manager

Predefined Plans

- PSAs
 - Clean Air
 - Move Over Law
 - Drunk Driving Campaign
 - Drink Drive Lose
 - Previous Campaigns
 - Designated Driver
 - Seat Belt Campaign
 - Buckle Up
 - Special Events

New Library... New Plan...
Copy... Move... Delete...
Edit Plan...

Details

Details	Plan Message
 DMS 595EB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 EXPECT DELAY OR USE ALTERNATE ROUTE Until Cancelled 1134 5
 DMS 595WB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 7
 DMS 95NB23 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 EXPECT DELAY OR USE ALTERNATE ROUTE Until Cancelled 1134 9
 DMS 95NB27 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 10
 DMS 95NB31 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 DO NOT EXIT Until Cancelled 1134 11

My Computer 100%



Edit Predefined Plan



Predefined Response Plan Editor - Windows Internet Explorer

Plan ID: PSAs :: Seat Belt Campaign :: Buckle Up

Filter: 10 shown of 10 total (No filter applied) ▶ Reset Filters Select All Select None

Details	Plan Message
DMS 595EB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 EXPECT DELAY OR USE ALTERNATE ROUTE Until Cancelled 1134 5
DMS 595WB10 [District 4] Active	RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 7
DMS 95NB23 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 EXPECT DELAY OR USE ALTERNATE ROUTE Until Cancelled 1134 9
DMS 95NB27 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 Until Cancelled 1134 10
DMS 95NB31 [District 4] Active	I-595 RIGHT LANE CLOSED AT I-95 DO NOT EXIT Until Cancelled 1134 11

Recommendation Criteria

Event Types	Roadways
☐ Crash	☐ I-75 NB
☐ Construction	☐ I-75 SB
☐ Congestion	☐ I-95 NB
☐ Abandoned Vehicle	☐ I-95 SB
☐ Disabled Vehicle	☐ I-195 EB

Add Items

DMS Edit... Drop Pages... Save Plan
Add... Remove Show on Map Revert to Saved Plan

Done My Computer 100%



Other Changes



- Many admin editor changes are described and detailed in the ConOps to assist in making the new RPG more flexible to District Operational Procedures
- Enhancements for congestion, distance to event, e-mail, DMS messaging templates, Express Lanes, and Ramps are also included.



Thank you



- D6 would like to take the time to thank CO and the District's for the opportunity and support provided on the RPG ConOps



Change Management Board



SunGuide Map Update

Robert Heller



SunGuide Map Alternatives

- **Why is this being looked at:**
 - Replace SVG used in current map and GUI (SVG will likely stop working in future browser updates)
 - TeleAtlas updates no longer available (Navteq has replaced it – data provided in a very different format)
- **Multiple options discussed and discarded**
 - Internet-based solution requires always-on connectivity to work
 - MapPoint-based solution has various performance issues
 - Solutions based on raw shapefile maps not as attractive as desired



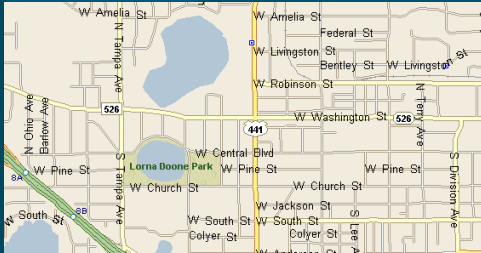
Next Generation SunGuide Map



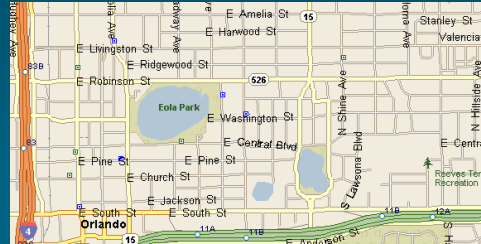
- **Proposed solution: Locally hosted, custom generated tile map**
 - Similar technology to Google Maps
 - Map tiles at different zoom levels pre-rendered
 - Stored on local web server at each installation
 - Tiles requested by client applications as needed
- **Tiles can be produced ONE TIME (“off-line” process) and then used many times**



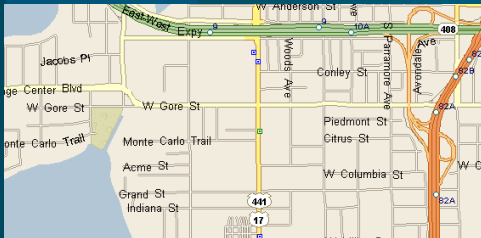
Tile Approach:



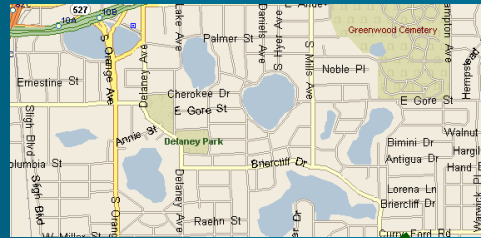
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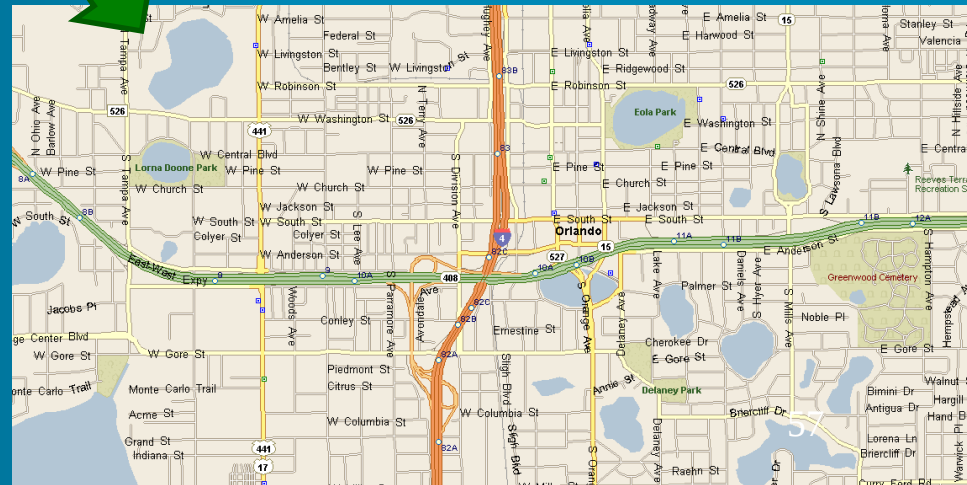
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+



- Tiles are combined to make a larger map – detail changes as the operator zooms in





Map Tile Generation

- Performed before map is actually used
- Runs once per update from Navteq
 - Could be run once per deployment if different appearance is desired





Tile Generation Options

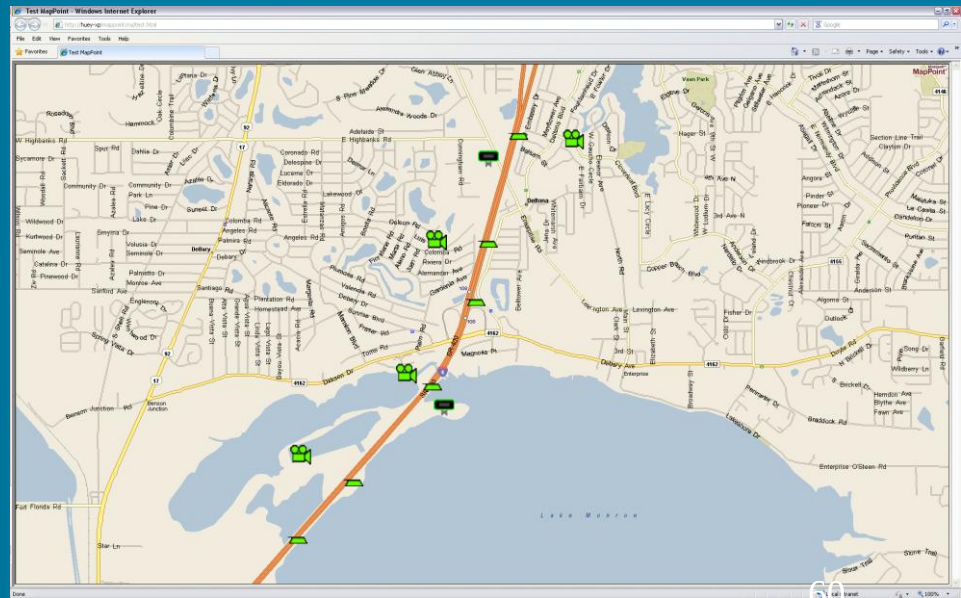
- Custom tile generation provides flexibility in appearance
 - Roadways, water, other features can be colored however FDOT would like
 - Color changes could be made at a deployment level if desired
- Device icons and other ITS features are NOT part of static tiles
 - Icons will be rendered independently of tiles



Map Drawing Technology



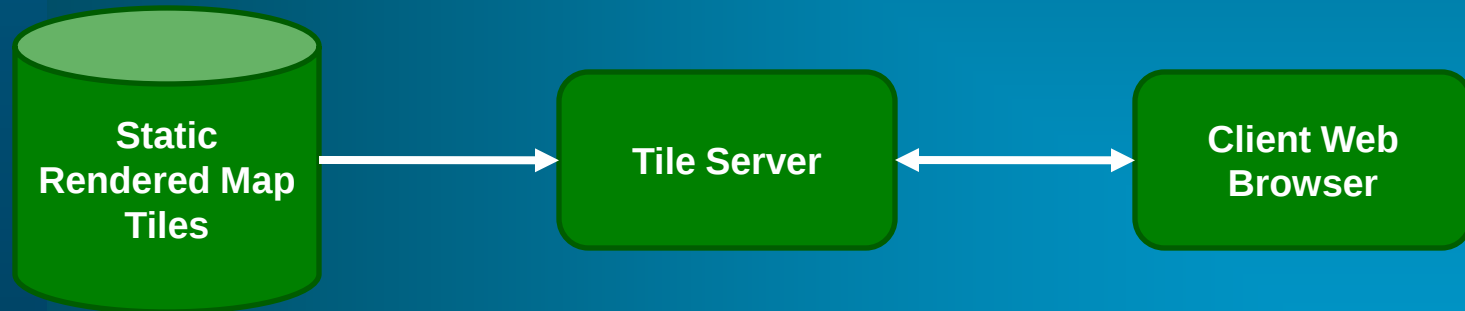
- Current map uses SVG for all drawing
 - Known performance issues
 - Limited detail due to data overload
- New drawing would use Microsoft XNA toolkit
 - Makes significant use of built-in graphics card
- Map web application would consist of one large ActiveX control:
 - Draws both map tiles from server and icons from SunGuide
 - Map “menus” would all be re-done





Tile Usage

- Map application runs in browser on client
- ActiveX drawing component requests tiles as needed
- Tiles are pieced together to form map
 - Icons are added on top of map





Tile Benefits

- Using tiles allows client to only request images as needed, rather than preloading all roads
- More detail is available as all rendering is performed beforehand
- All drawing is performed by ActiveX engine
 - SVG rendering no longer impacts performance
 - SVG would be removed from SunGuide (requires the SunGuide menus and map interaction to be rewritten)



Proposed Tasks

- The following tasks are proposed:
 - Refine/Define requirements:
 - Review all current requirements with Districts
 - Modify requirements based on technologies being used
 - Create tile creation process:
 - Off-line map tile creation program (create tiles)
 - Tile server (this is equivalent to the GoogleMaps API called to render maps)
 - Client interface (controls on the GUI for an operator to manipulate the map)
 - Testing an integration



Proposed Tasks (cont')

- Build the map (this is required independent of the “map source”):
 - Re-implement all SunGuide menus (including context menus)
 - Re-implement the operator action with the map
 - Re-implement all the “operator preferences”
 - Testing and integration
- Factors that can effect cost (to go “lower”):
 - Commercial tool to simply the map tile process can be identified
 - Dropping of some map requirements that “sound good” but are rarely (if ever) used operationally



Change Management Board



Performance Measures Report - Incident Duration

Arun Krishnamurthy

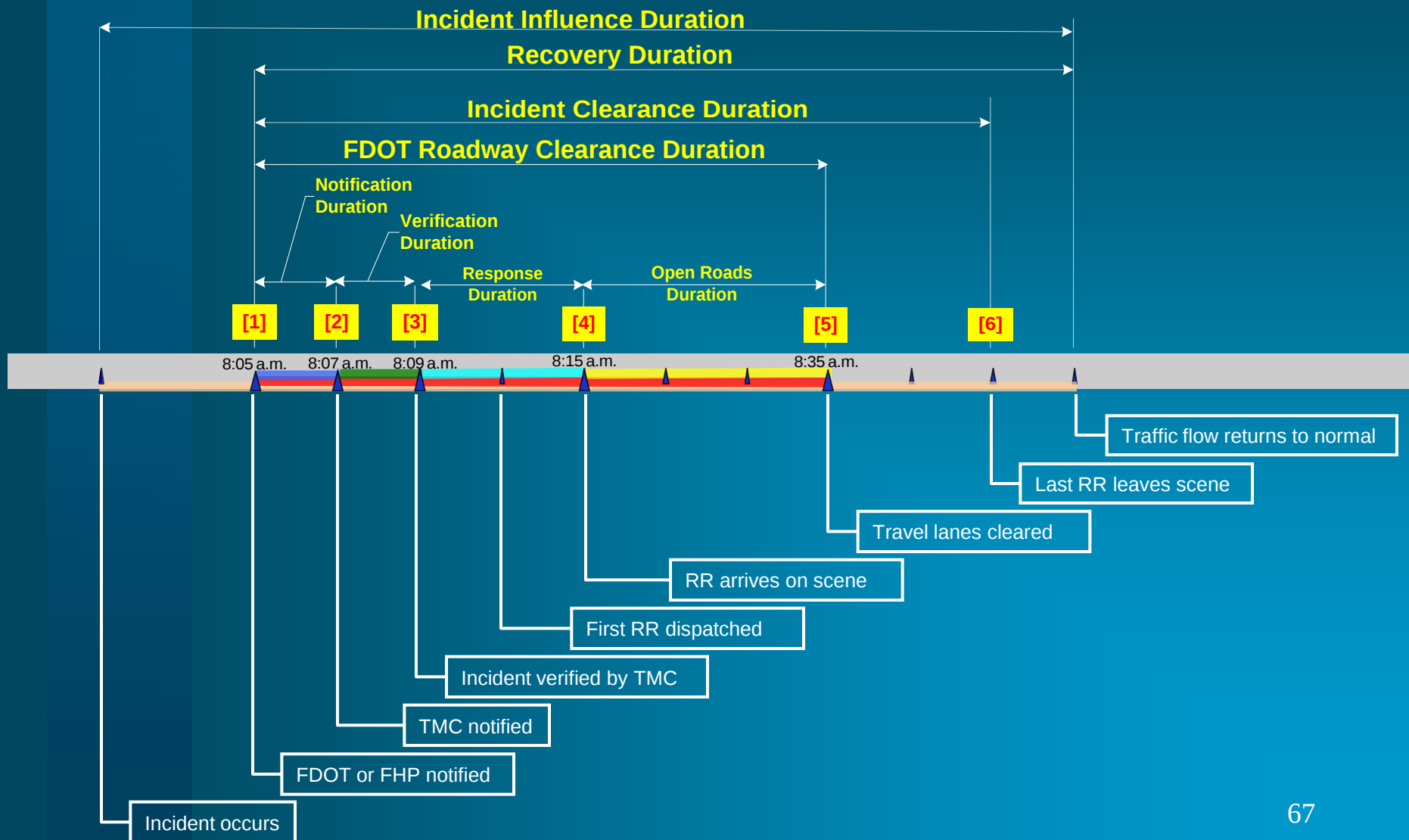


Current status

- SunGuide Quarterly Incident Duration PM report follows FDOT approved “Incident Duration Timeline”
- Most of issues relate to special cases
- Investigated on District 2, District 4 and District 5 databases



Incident Duration Timeline





Issues

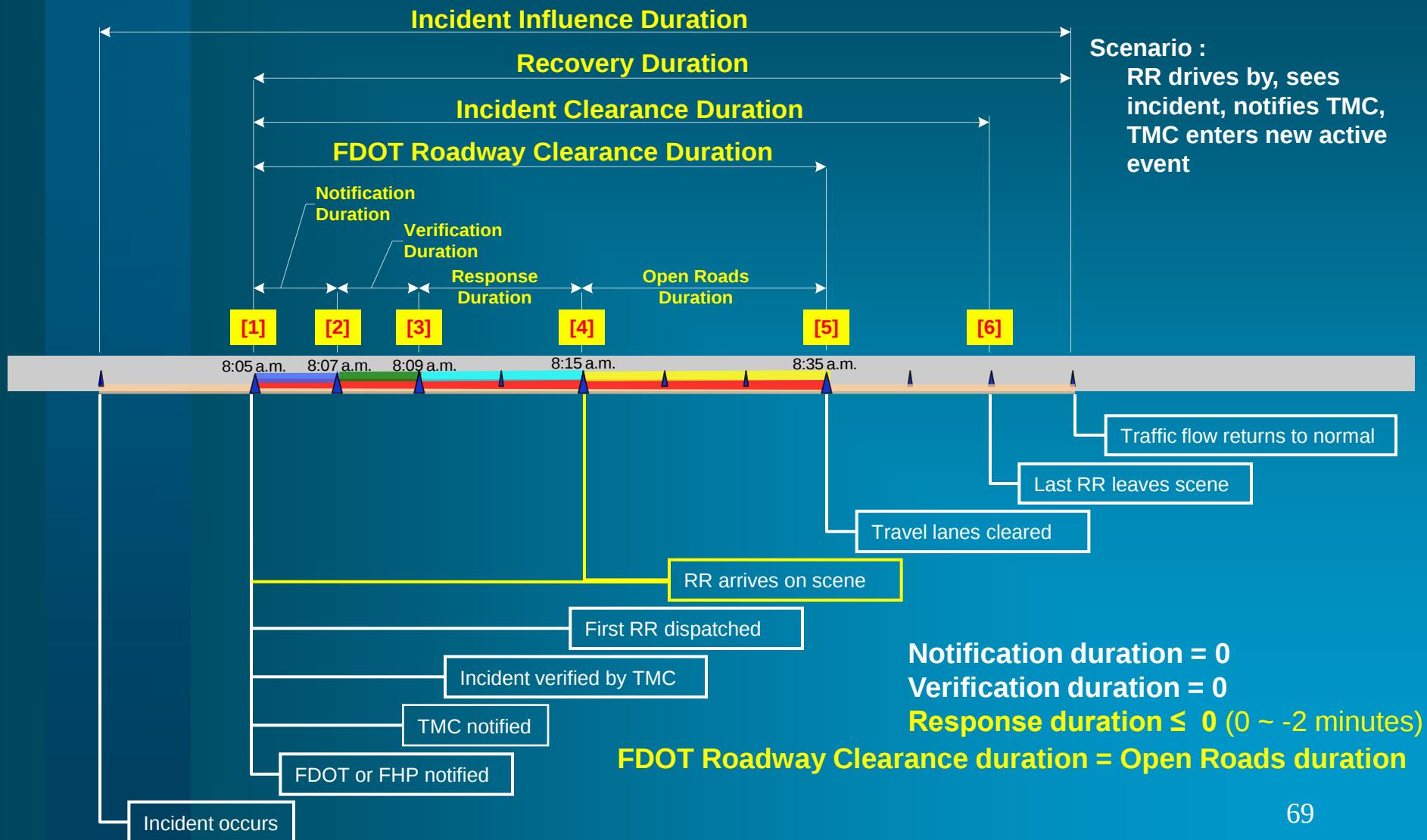


Several issues that have been observed and investigated:

- Small negative number for **Notification, Verification, and Response Durations** (0~2 minutes)
- Negative **Open Roads Duration**.
- Large Duration for **Open Roads Duration**
- Timestamps with null value (such as no timestamps for **Verification, Travel Lanes Cleared, RR Dispatch...**)

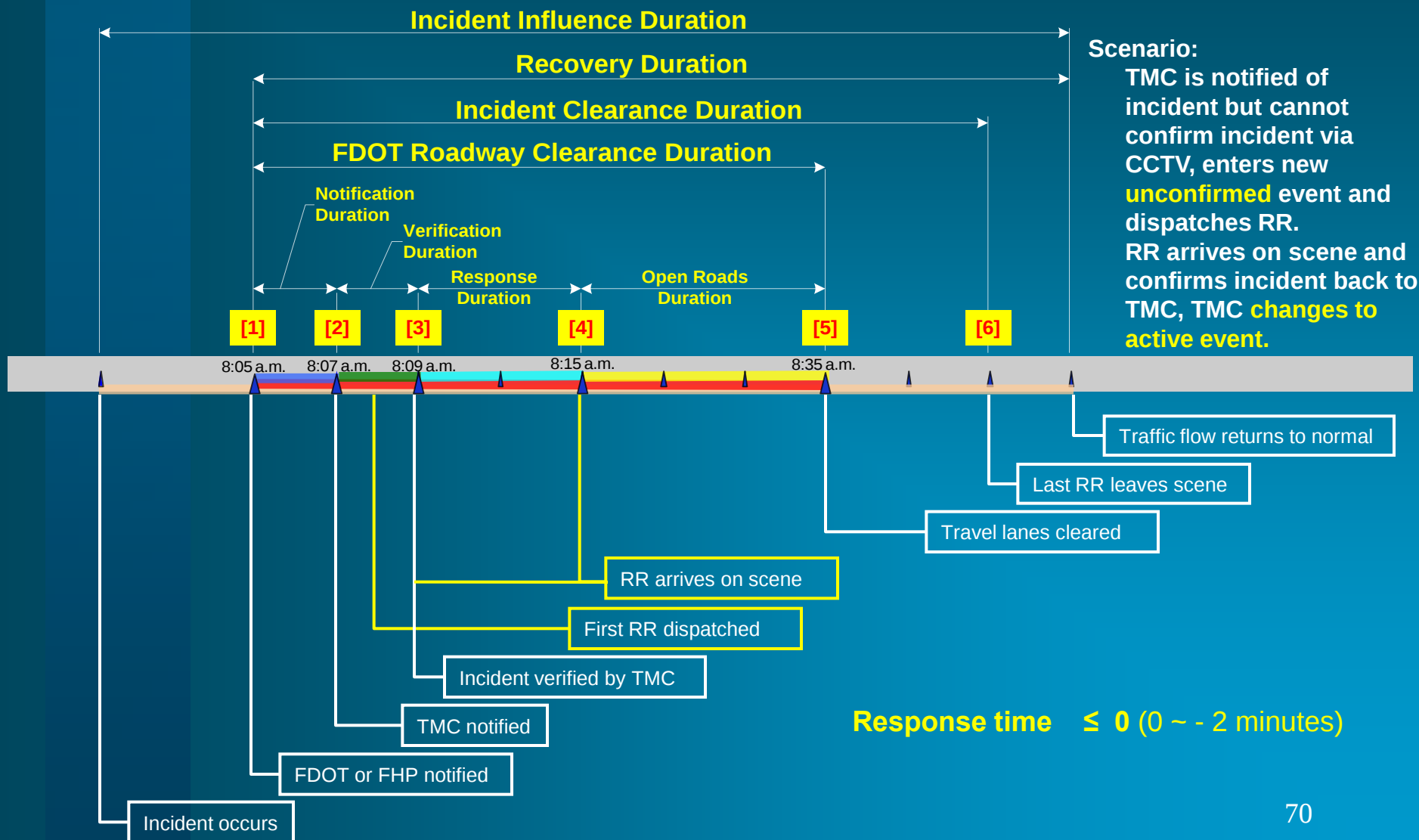


Scenario 1



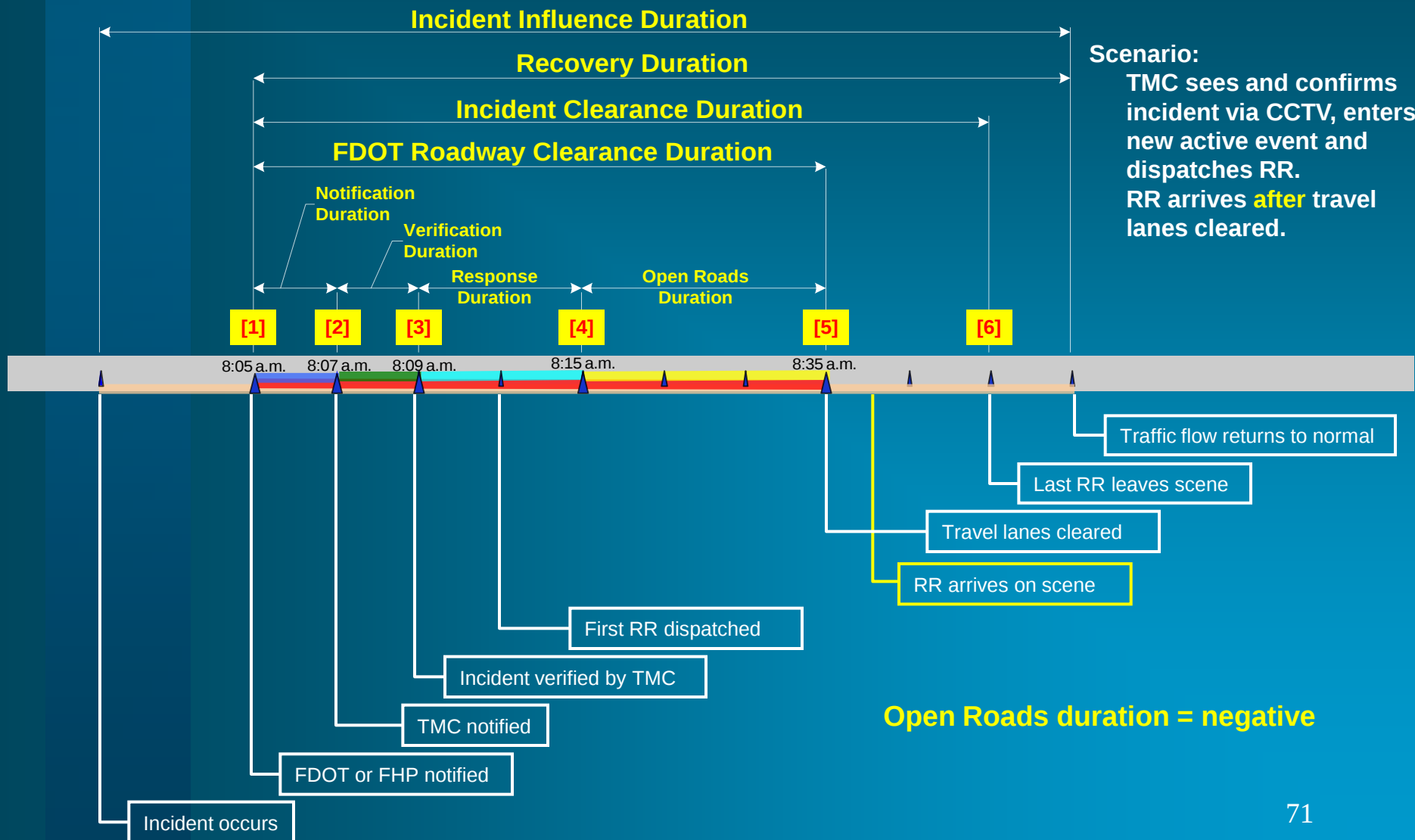


Scenario 2





Scenario 3





Three Part Solution

1. Flag and audit suspect event data
2. Discard invalid events from PM
3. Adjust timestamps in PM calculations



1. Flag and audit suspect event data

- Some event data likely to be in error
- Errors must be corrected with audit function
- Suspect timestamps may identify errors
- Incident Duration Timeline Report can capture suspects

Conditions for Suspect Events

- Missing Notification or Verification timestamps
- Road Ranger arrives late (after lanes re-opened)
- Road Ranger departs early (before lanes re-opened)
- Negative Durations (of over 2 minutes)
- High Durations (over a set of thresholds)



2. Discard invalid events from PM

- Some events are invalid for Performance Measures
- Invalid events contribute to current problems
- Timeline timestamps values can determine validity

Conditions for Invalid Events

- Events without TMC Verification timestamp
- Events without Lane Blockage
- Events without Road Ranger Response
- Road Ranger arrives late (after lanes re-opened)
- Road Ranger departs early (before lanes re-opened)

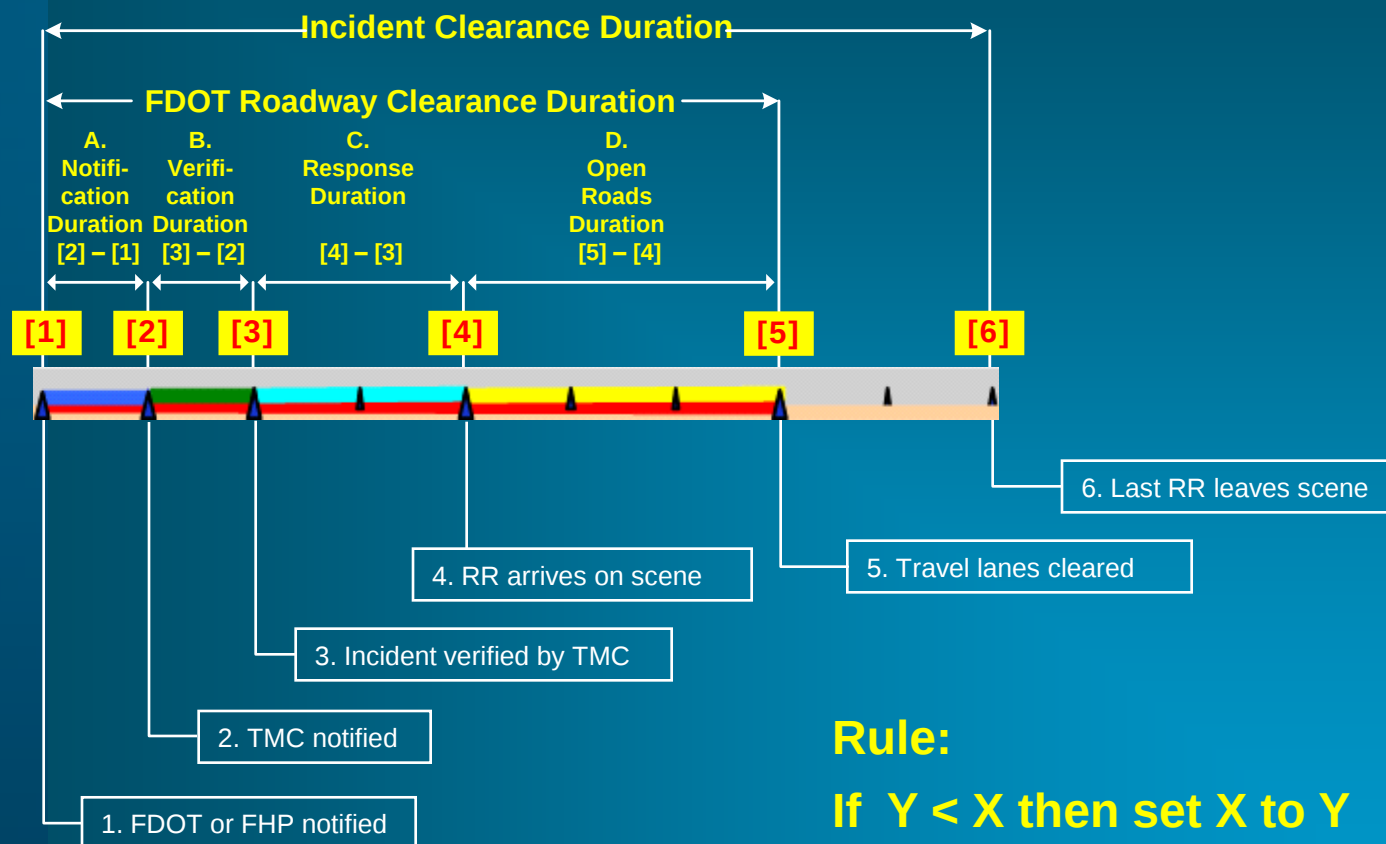


3. Adjust Timeline Timestamps

- Valid events can have timestamps out of order
- Out-of-order timestamps contribute to current problems
- Timestamps can be carefully adjusted to be in order
- This better matches Incident Duration Timeline definitions
- This meets the “spirit” (or intent) of Incident Duration calculations



Timestamps Adjustment Procedure



Rule:

If $Y < X$ then set X to Y



Next steps



- CO will provide modified report template to Districts
 - CO strongly recommends the use of this report for FTC
- CO will also provide report contains flagged or suspect events



Change Management Board



BREAK



Agenda (cont')



Time	Item	Lead
3:10 – 3:15	Break	
3:15 – 3:30	SunGuide – Polling Failed (D6)	Heller
3:30- 3:40	SunGuide – Excessive TSS Alerts (D5)	Heller
3:40 – 3:50	FTE migration	Easterling
3:50 – 4:00	SunGuide “Right click menu” – Changes proposal	Laird
4:00 - 4:15	Inrix data for 511	Sanyal
4:15 – 4:20	Other Districts' issues	Vega
4:20 - 4:30	Closing and Action Item Review	Vega



Change Management Board



SunGuide – Polling Failed (District 6)

Robert Heller



SunGuide Polling Failed Devices



- **Problem:**
 - FP #102 submitted by D6
 - ‘Failed’ devices must be set back into operation manually by an operator
 - Devices end up being in the ‘Failed’ state for long periods of time even after communication has been restored
- **Solution:**
 - Modify TSS and RM drivers to poll failed devices at a configurable period
 - Automatically restore devices when communication is restored



Slow Poll Requirements

- **TD014E** When SunGuide polls a TSS detector and the poll is unsuccessful, SunGuide shall report the device in “ERROR” status.
- **TD014A** If a device is in “ERROR” and SunGuide successfully polls the device then the device status is reported as “ACTIVE” state.
- **TD014F** If a device is in “ERROR” and SunGuide unsuccessfully polls the device a configurable number of times the device is placed in “FAILURE” state.
- **TD014O** SunGuide shall allow an operator to place a device in “OUT OF SERVICE.”
- **TD014O1** SunGuide shall not poll a device with status “OUT OF SERVICE.”



Slow Poll Requirements (cont')

- **TD015F** When a traffic detection device is in “FAILURE” mode, SunGuide shall poll the device at a “slow poll” rate.
- **TD015F1** Slow poll rates shall be configurable at the driver level within the system configuration file.
- **TD015F2** When a device is successfully polled at the slow poll rate, the device will be placed in “ACTIVE” status.



Slow Poll Requirements (cont')

- **TD015S** SunGuide shall store traffic detection device state transitions in the SunGuide database.
- **TD015S1** Traffic detection device state transitions shall have date and time of the transition.
- **TD015S2** Traffic detection device state transitions shall have indication of transition reason, (poll failure, operator forced, operator who performed the operation, etc.)
- **TD015S3** SunGuide shall write messages to the System Messages dialog when traffic detector device operational state transitions.
- **TD015S4** SunGuide shall write messages to the Status Logger when traffic detector device operational state transitions.



CMB Vote



- ***Vote***



Change Management Board



SunGuide – Excessive TSS Alerts (District 5)

Robert Heller



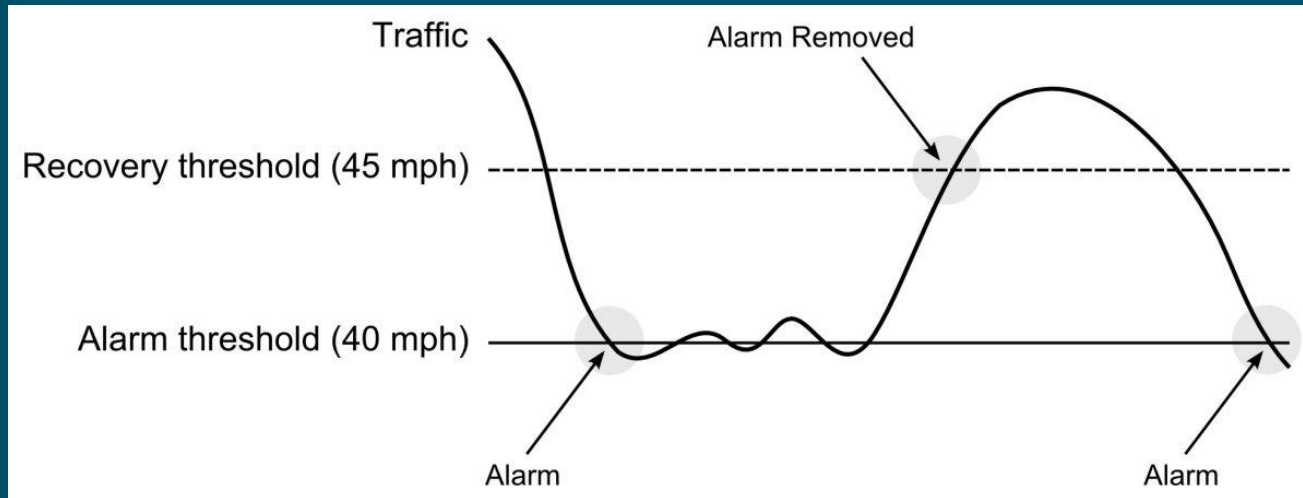
SunGuide Excessive TSS Alerts



- **Problem:**
 - FP #1096 submitted by D5
 - TSS generates an alarm every time the speed or occupancy of a link crosses a specified threshold.
 - An excessive number of alarms can be generated if the traffic data oscillates around the thresholds
- **Solution:**
 - Add a configurable recovery threshold to prevent multiple alerts for the same congestion incident



SunGuide Excessive TSS Alerts



- Once an alarm is generated for a given threshold, a subsequent alarm will only be generated if the traffic data has since improved past the recovery threshold.
- Alarms which have not been addressed by an operator will only be removed from the alert box when the traffic data has improved past the recovery threshold.



TSS Alarm Threshold Req'

- **TD009T** SunGuide shall generate TSS alarms
- **TD009T1** A TSS alarm shall be triggered when the speed or occupancy values cross the Alarm Thresholds configured for that link.
- **TD009T2** A TSS alarm shall not be triggered when TSS reports no traffic. (i.e. speed, volume and occupancy = 0.)
- **TD009T3** Once a TSS alarm has been triggered it shall not be retriggered until the traffic data for that link subsequently crosses the Recovery Threshold.
- **TD009T4** TSS alarms that have not been addressed by an operator shall be removed when the traffic data that triggered the alarm subsequently crosses the Recovery Threshold.



TSS Alarm Threshold Req'

- **TD009T5** The Recovery Threshold shall be configurable per link in the Admin Editor.
- **TD009T6** The Operator Map shall represent the data region between the threshold and recovery threshold with yellow in the 'TSS Link Data' screen.
- **TD009T7** A link where the traffic data currently falls between the Recovery Threshold and the Alarm Threshold shall be displayed in yellow on the Operator Map.



TSS Alarm Threshold Req'

- **TD009S** When a TSS detector status transitions to “ACTIVE” from either “FAILURE” or ”OUT OF SERVICE”, SunGuide shall not generate alarms the detector has stabilized.
- **TD009S1** A detector is stable if it reports data for a configurable period of time.
- **TD009S2** The stabilization period is configurable at the driver level within the system configuration file.



CMB Vote



- ***Vote***



Change Management Board



SunGuide – FTE Migration

John Easterling



Change Management Board



SunGuide “Right click menu” - Change proposal

Mark Laird



Process



- Informal discussion of concept at SG 4.0 IV&V
- Discussion of concept with Trey at SG 4.1 FAT
 - Trey requested a proposal and review by SSUG
- Development of proposal and distribution to SunGuide Software Users' Group
- Brief discussion at March SSUG Meeting
- Follow-up at June SSUG Meeting
 - Comments solicited
 - Clay Packard submitted additional improvements (see comments in document) that should be considered to be changes to the document
- July, 2009 CMB Meeting



Overview



- The menu displayed after right-clicking on the SunGuide map is:
 - organized around software subsystems
 - uses subsystem names and abbreviations
- Restructure to:
 - organize around operations processes
 - use common terminology



Overview of Changes

- Regroup around operational functions
 - e.g. all DMS together, all video together, all event management together
- Rename some items
 - e.g. RS to Reports
- Put list in alphabetical order



Sample Before/After



- Top level menu

AVL/RR	▶
CCTV	▶
DMS	▶
EM	▶
MAS	▶
Preferences	▶
PS	▶
Ramp Meter	▶
Response Plans	▶
RS	▶
SAS	▶
System	▶
TSS	▶
TVT	▶
Video Wall	▶
VS	▶

CCTV	▶
Detectors	▶
DMS	▶
Event Management	▶
Express Lanes...	
Preferences	▶
Ramp Metering	▶
Reports...	
Responders	▶
System	▶
Travel Times...	



Change Management Board



Inrix data for FL-511

Ashis Sanyal



Project Overview

- INRIX provides Data derived from fleet cars equipped with GPS devices
- They provided data for I-10 (from Tallahassee area all the way up to Pensacola) and three other arterials in the Tallahassee area
- The purpose of the project was to determine how good the INRIX data is and if it can be used for travel time determination and Incident management purposes



Accuracy



- Overall System Accuracy was 83.391% with an RMS speed deviation of 10.46 mph
- Accuracy on Limited Access Roads (I-10) was 90.43% with an RMS speed deviation of 6.5 mph
- Accuracy on Arterials:
 - US-27 = 51.48% with an RMS speed deviation of 17.37 mph
 - US - 319 (W. Orange Ave to I-10) = 50.19% with an RMS speed deviation of 21.65 mph
 - US - 319 (I-10 to GA border) = 50.28% with an RMS speed deviation of 20.84 mph
- Analysis of data accuracy by speed of traffic indicates data was most accurate at speeds over 40 mph



Data Reliability

- Percentage of time data was available from INRIX servers between 5 AM to 10 PM were
 - November 2008 – 100%
 - December 2008 – 100%
 - January 2009 – 99.84%
 - February 2009 – 99.96%
- Data Latency – Average latency of INRIX data stream is less than 2.5 minutes across all data sources



Data Analysis



- CO did analysis of INRIX data, LPR data, and GPS data from floating vehicle runs
- There is close association between the floating car data and INRIX data
- There is close association between LPR data and INRIX data



Conclusions

- INRIX data for limited access roads were found to be accurate at speeds over 40 mph but became less accurate at speeds around 20 mph
- INRIX data defaults to reference speed (free flow and historical average) during periods of low traffic volume – particularly late night/early morning



Change Management Board



Other Districts' issues

Peter Vega



Change Management Board



Closing and Action Item Review

Peter Vega