Change Management Board Meeting

Wednesday, May 29, 2013

Video Conference: CO- Burns Video Bridge 3

Audio Only: 850 - 414 – 4976

GotoMeeting: https://www2.gotomeeting.com/join/252421210

Welcome and Call for Quorum

Javier Rodriguez, CMB Chairman

Agenda

Time	Item	Lead
1:30 – 1:35	Welcome and Call for Quorum	Javier Rodriguez
1:35 – 1:40	Previous Meeting Recap and Action Item Review	Javier Rodriguez
1:40 – 1:50	Intelligent Transportation Systems (ITS) Wide Area Network (WAN) Update	Randy Pierce and Frank Deasy
1:50 – 2:10	Oracle/MS SQL Server & SunGuide 6.0 Deployment	Arun Krishnamurthy
2:10 – 2:30	SunGuide and Lonestar (vote)	Arun Krishnamurthy
2:30 – 2:45	Nokia Modification for SunGuide	Clay Packard
2:45 – 3:00	Wrong Way Driving (vote)	Tucker Brown
3:00 – 3:10	Break	

Agenda

Time	Item	Lead
3:10 – 3:20	Installer (vote)	Clay Packard
3:20 – 3:30	ONVIF (vote)	Clay Packard & Tucker Brown
3:30 – 3:50	Weather Enhancement (vote)	Clay Packard
3:50 – 4:05	Upcoming RITIS Enhancements	Arun Krishnamurthy
4:05 – 4:15	Priority Items by District	Javier Rodriguez
4:15 - 4:20	Review Action Items	Javier Rodriguez

CMB agenda, slides, and attachments posted here:
http://www.dot.state.fl.us/trafficoperations/ITS/Projects_Deploy/CMB.shtm

Previous Meetings Recap and Action Items Review

Javier Rodriguez, FDOT

March 2013 Action Items

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

ITS Telecommunications Update

Randy Pierce, FDOT

and

Frank Deasy, Telvent

ITS WAN Update

- **Connecting D1 & D7**
  - ITS WAN equipment operational
  - Unicast connectivity is operational
  - Multicast connectivity in process
  - ITB in process for gigabit fiber circuit
- **Connecting D3 RTMCs Tallahassee**
  - Tallahassee RTMC fiber connection in process
- **FTE RTMC Pompano**
  - FTE switch configuration and connection to ITS WAN still in process

ITS WAN Update

- **FHP CAD**
  - Available to Districts connected to ITS WAN
- **Multicast Re-Addressing**
  - Districts should re-address their multicast devices now to resolve any overlapping addresses
  - D4 completed their multicast addressing
  - D5 & D6 have committed to multicast readdressing and are in process
  - What is the status of this effort in D1, D2, D3, D7, FTE and MDX?
  - Multicast video can then be shared statewide (SEOC, TERL, inter-District)
- **FL-ATIS & VAS**
  - Replacing dedicated circuits with ITS WAN connectivity

ITS Telecommunications Update

QUESTIONS?

Randy Pierce, FDOT
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Frank Deasy, Telvent
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Oracle / MS SQL Server & SunGuide 6.0 Deployment

Arun Krishnamurthy, FDOT

SunGuide Release 6.0

- FAT conducted April 22-25
  - Successful, few minor issues
- IV&V currently underway from May 13-June 25
- Software CD will be available end of June, as planned.
- Need to conduct deployment planning
- Need to plan for Admin and Operator training

Compatibility issues between R5.1.1 and R6.0

- With the addition of database IDs, C2C schemas are not compatible between R5.1.1 and R6.0.
  - SwRI to produce intermediate workaround
  - will ensure 511 does not have issues
  - RITIS will be updated

Migration from Oracle to SQL Server

Oracle

- Districts shall work with CO when they decide they don't want to continue with Oracle
  - CO will work with OIS to transfer Oracle licenses to OIS (potentially)
- CO will start coordinating with districts for Oracle license renewal.

SQL Server

- Microsoft offering SQL Server Admin training on-line
  - Accommodates 15 students in each class
  - June 18 - 20 (1st class)
  - June 25 – 27 (2nd class)

SQL Server Purchasing

- For FDOT users only
  - If purchasing in next couple of months, access to per-processor licensing.
  - Microsoft was planning to provide more training and deployment support at no additional cost if we purchased significant licenses before end of June. Not sure anymore.

QUESTIONS?

Arun Krishnamurthy, FDOT
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SunGuide and Lonestar

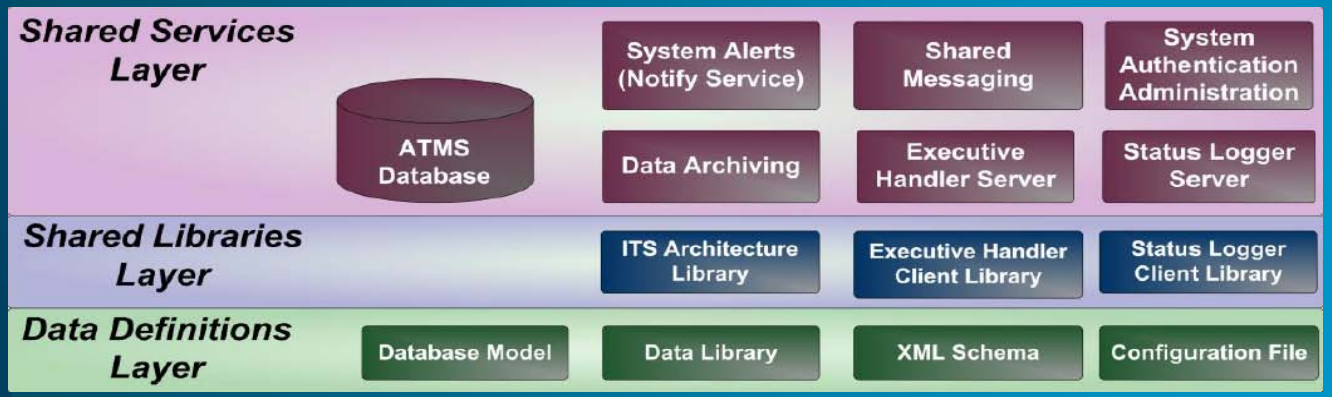
Arun Krishnamurthy, FDOT

Unification

- **Goal: Unify the code base between SunGuide and Lonestar**
  - Easier sharing of code between projects
  - Shared support cost for defects
  - Shared costs for software enhancements

Phased Approach

- **Phase 0 for next release:**
  - Common Components
    - Databus
    - Status Log
    - Executive Handler
    - ITS Generic
      - SAA will be migrated to SunGuide
      - Generic Framework for GUIs
        - WPF dialogs



Cost

- Phase 0 cost - $266K
- Anticipated overall cost for software unification in the tune of $ 3 million

- Please note that the cost will be shared between two state DOTs.

QUESTIONS?

(VOTE)

Arun Krishnamurthy, FDOT
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Change Management Board

Nokia Data in SunGuide

Clay Packard, Atkins

Nokia Data

- **FDOT has a need for 3rd party data**
  - Fills in detector deployment gaps in rural areas
- **FDOT has had INRIX data for around 2 years for I-10 and part of I-75**
- **FDOT's contract with INRIX expires on Sept, 13.**
- **FDOT will be contracting with Nokia for data this year to replace INRIX data**
- **FDOT will be purchasing statewide data which includes all limited access facilities and arterials including state roads and local roads.**
  - Total miles purchased – 2,407 CL miles of freeway & 16,546 CL miles of arterial.

Nokia Data (cont.)

- **Nokia data can be accessed on their website: www.Here.com**
- **Data sources include:**
  - GPS, Smart Phone, Consumer Sources, Commercial Sources
  - Fixed-Location Sensors: Nokia Sensor Network, Partner Sensor Network

Nokia Data for SunGuide

Proposed SunGuide Software Enhancement:

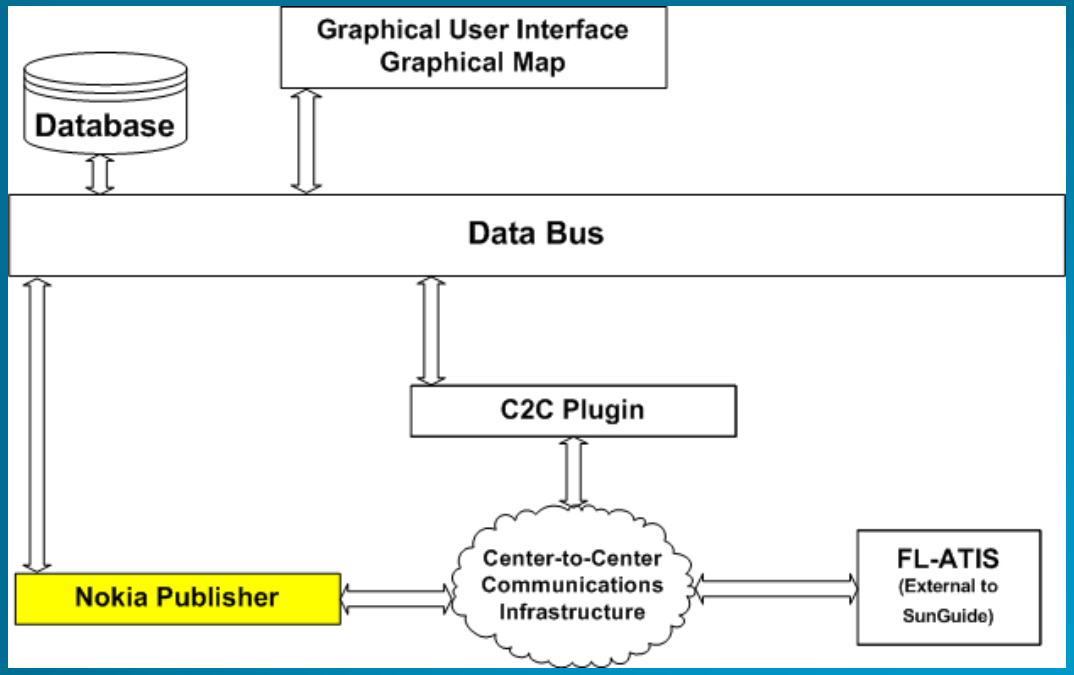
- **SunGuide will need to support this different data source**
- **Can leverage existing INRIX module with protocol modification**
  - Uses C2C to input data into SunGuide and control data
  - Uses config.xml to configure filters by counties and roadways
  - Uses databus → System Messages to notify users of data feed disruptions
- **Each SunGuide installation would have own Nokia Publisher**
  - Retrieves speed and traffic condition data
  - Pushes data into the C2C Infrastructure.
  - SunGuide would then get data from C2C.
- **C2C links displayed on the map just like TSS links currently**
- **These new C2C links can be used to calculate travel times.**

Configurability

- **TMCs can choose which Nokia data links to push to 511 system.**
- **Each TMC operator can view Nokia data on the map and uncheck if they do not wish to view on map.**
- **TMCs can configure systems to only view arterial data if they are fully deployed along limited access facilities.**
  - SunGuide currently allows for viewing Nokia traffic data on roadway corridor by county.
    For eg: TMCs can view I-10 data in Leon county but cannot get data on segment level granularity.
  - Current proposal will not allow TMCs to create TSS alerts using the Nokia data.

System Modifications

- **Nokia Publisher module will be built**
- **Identical architecture as INRIX Publisher**
- **2 Roles:**
  - Sends system alerts as a data provider (a.k.a. subsystem) for data feed
  - Sends traffic data as a C2C Plug-In



Cost and Schedule

- **Cost to enhance:**
  - $25K
- **Schedule:**
  - Available in July / Aug
- **Will be available as patch to SunGuide for both R5.1.1 and R6.0.**
- **District 2 would need to deploy this patch before INRIX contract expires so 511 system continues to receive I-10 and I-75 data.**

QUESTIONS?

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Change Management Board

Wrong Way Driving

Clay Packard, Atkins
Tucker Brown, SwRI

Wrong Way Driving (WWD)

- **Central Office formed a task team, per request from Secretary Prasad, to investigate warning systems and countermeasures.**
- **Scope of this effort**
  - Literature Review of past studies and projects
  - Evaluation of wrong-way warning devices
  - Review of FDOT Standards to help improve application and consistency of warning systems
  - **SunGuide enhancement to include response for WWD events**
  - Pilot project field testing

Preliminary Device Evaluation by TERL

- **Wrong-way detection on mainline**
  - Wavetronix HD with Click!512 module
- **Wrong-way detection on ramps**
  - Signage with simple directional detection
    - TAPCO
    - Information Display
    - Unipart Dorman
    - Citilog VisioPad
    - SES America
    - Miovision
    - Econolite (formerly ISS and EIS)
    - Traficon
    - TrafficVision

ITS Solutions

- **Single Wavetronix HD on mainline**
  - Click!512 pushes notification of WW events.
- **TAPCO detection and warning signs on Off-Ramps.**
  - Signs alert wrong-way drivers
  - Detector component also triggers WW events
- **WW Events handled by SunGuide**
  - Email automatically sent to preconfigured list
  - Operator Alert produced
  - Operator creates event and response plan
  - DMS messages warn motorists of oncoming WW driver

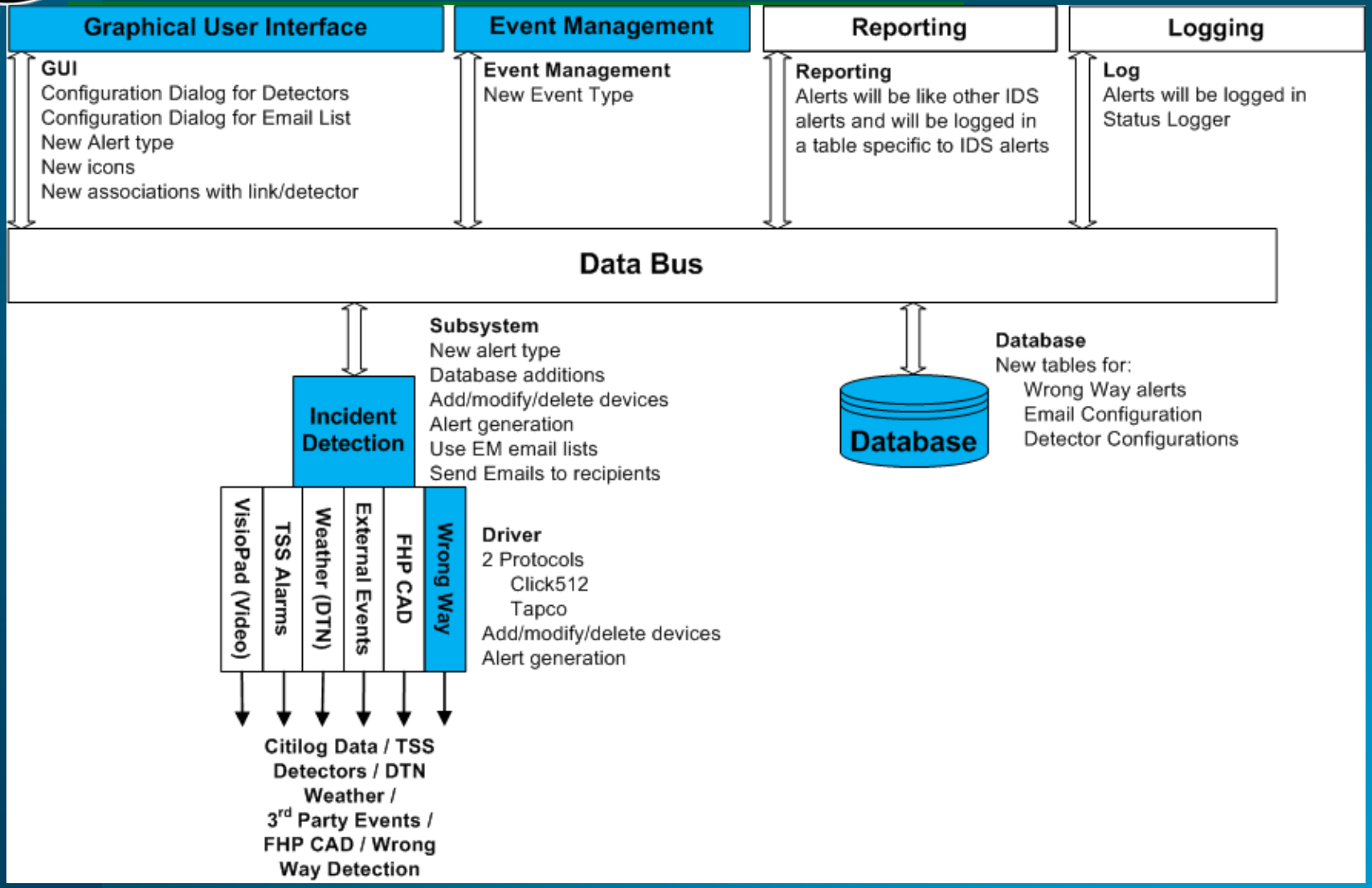
Field Demo / Testing at FTE

- **Work with FTE to determine locations for Wrong Way warning system field testing**
  - SunGuide software modification will support this

SG Software Modifications

- **Support for two devices**
  - Click!512 (add-on to existing Wavetronix HDs)
  - TAPCO detection trigger
- **Generate instant alerts/emails**
- **Log alerts in database for reporting**
- **Operator Map Configurations**
  - Devices

Wrong Way Driving Design



Cost and Schedule

- **Cost for SunGuide Software modifications:**
  - $74K
- **Schedule:**
  - Planned for SunGuide Software Release 6.1.

QUESTIONS?

(vote)

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Tucker Brown, SwRI
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Break

Change Management Board

SunGuide Installation
/
Upgrade Process Enhancements

Clay Packard, Atkins

Overview

- Installation process is a very manual, complex process:
  - Installation Notes: http://sunguidesoftware.com/sunguidesoftware/documentlibrary/ReadingRoom/ProjectDocuments/transmittals/SunGuide-IN-5.1.1(Draft).pdf

- As Districts perform their own installs/upgrade
  - Moving from on-site support
    to remote support
    to as-needed support
  - Install/Upgrade Support will facilitate system understanding by local staff
  - Allows support to focus on defect removal and enhancement rather than maintenance

Problems to be Addressed

- Need to separate software issues from installation issues
  - Latent – revealed only when features are used
  - Sticky – requires SunGuide engineer to diagnose and correct, especially database issues
  - Hazardous – many manual verification and configuration steps provide opportunity for human error

Installer Objectives

- Automation – dependency verification
  - .NET 4.0, .NET 2.0, Visual C 2012 runtime, IIS & ASP.NET, admin privileges, database connectivity, verify available ports, verify Crystal runtime 11.5
  - copy new XML schema files, verify Navteq map data, verify map tiles exist and auto-download
- Clear, specific, and well presented error messages for failure
  - Makes diagnosis and resolution much easier

Configuration Consolidation

- All configuration moved into ~~database~~ central location
  - config.xml,
  - ipvideodevices.xml,
  - SnapshotDevices.xml,
  - OMInterface.dll.config,
  - schedules.xml,
  - sequences.xml,
  - FL-ATIS_FloodGate_Data.xml
- ~~Automatic~~ **Assisted update of configuration**
  - Prompted for parameters (default values provided)
- **Automatic Verification/Validation of configuration**

SunGuide Database Tools

Database Items Deferred to Releases

- User friendly suite of database tools
  - Version specific validation of database (schema/users, tablespaces, synonyms, etc.)
  - Export (Backup), Import
  - Maintenance
    - Recreate Synonyms
    - Rebuild Indexes
    - Synchronize sequences
    - Etc.
    - Other maintenance needed ?
- Clear, specific error messages for failures
  - Makes diagnosis and resolution much easier
  - Remove benign error messages
  - Progress bar / percent complete

SunGuide Database Upgrade

Database Items Deferred to Releases

- Database physical and logical verification
  - Validate version X before upgrade
  - Validate version Y after upgrade
    - Running scripts multiple times should not corrupt the database
- Upgrade and validate within single transaction; else, roll-back to valid version X
  - Progress bar / percent complete
- Clear, specific error messages for failures
  - Specify the database tables and/or subsystem in error
  - Makes diagnosis and resolution much easier
  - Remove benign error messages

Report Templates Mgmt

- **"out-of-the" box templates**
  - Centrally managed and versioned
  - Deployed as a new set with each installer
  - Eliminates versioning issues from adding/removing (without any verification)
- **Custom user templates**
  - Flagged as "custom";
    - Stored in separate folder
    - Backup folder for prior version
      (automatically; and once – if doesn't exist)
  - Not affected by installation process

Updates since last discussion

- **Action Item to add clustering support (done)**
  - Each application server operationally agnostic
    - All operational data moved to FDOT Share
- **Action Item to consider cost-feasibility of each individual enhancement (done)**
  - Moving configuration from config.xml to database removed (cumbersome and expensive)
  - Remote installation removed (expensive and benefits covered by other enhancements)

List of Modifications

Change Location	Change Description	Priority
New file / FDOT Share – TMC documentation	Machine readable deployment configuration	M
Installer tool	Automated backup and restore of configuration data	H
Installer tool	Automated installation steps (from VDD preparing server)	M
Installer tool	Automatic dependency verification (from VDD preparing server)	H
Installer tool	Automatic configuration updates	M
Installer tool	Unattended installation with parameters file	L
Installer tool	Automatic validation of other supporting files in the application share (also known as “FDOT Share”)	H
SunGuide software	Move all static, architectural configuration data into source code	L
SunGuide software	Move all operational and configuration data to FDOT Share	M
New Tool	Reconfigure cloned server (clustering support)	L

Modifications Deferred

Change Location	Change Description	Priority
Database scripts	Improved database upgrade script output and error messages	H
Database scripts	Idempotent scripts	H
Database scripts	Reference tables verification	L
Database scripts	Validation against database model	L
Database scripts	Database tools suite for SunGuide software databases	M
Installer tool	Remote installation	M

- H = Needed to make it possible for local staff to complete installation on the first attempt
- M = Likely to reduce downtime and errors
- L = Saves times and nice to have, but not likely to be the difference between successful installation and failed installation

Cost and Schedule

- **Cost for SunGuide Software modifications:**
  - $143K
- **Schedule:**
  - Planned for SunGuide Software Release 6.1.

QUESTIONS?

(vote)

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Change Management Board

ONVIF

Tucker Brown or Robert Heller, SwRI

Video Surveillance

- ITS is a **TINY** piece of this industry
- Few vendors support NTCIP…many vendors support ONVIF or plan to.
- Industry has adopted the ONVIF standard for many of the same reasons that NTCIP was developed and adopted by DOT
- ONVIF standard supports control needs for new IP cameras, encoders, and other video devices

ONVIF Benefits

- **NTCIP considered "custom" and unfamiliar to most vendors**
  - "Special orders" for NTCIP versions increase cost
  - Fewer vendors willing to participate
- **ONVIF is industry standard – "COTS"**
  - Higher availability/selection of products/vendors
  - Encourages competition…

…Increases quality

…Reduces cost

Open Network Video Interface Forum

- ONVIF defines
  - Network Video Transmitters (NVT) e.g. cameras
  - Network Video Displays (NVD) e.g. video wall
  - Network Video Analytics (NVA) e.g. image analysis
  - Network Video Clients (NVC) e.g. SunGuide
- ONVIF products (taken from ONVIF.org)
  - NVT (cameras with encoders)
  - NVC (security control systems with attached screens)
  - NVR (Network Video Recorders)
  - **No displays (no decoders, etc.)**

New Camera Support

- NVT generate
  - Standards based encoded video
  - Standards based protocols
- Display using
  - Video walls [supported by Activu, Barco, Jupiter]
  - Decoders [Cornet, Cortec, impath, Teleste, Vbrick]
  - Video on Desktop
- Propose to support ONVIF standard
  - PTZ control to match current drivers

Cost and Schedule

- **Cost for SunGuide Software modifications:**
  - $35K
- **Schedule:**
  - Planned for SunGuide Software Release 6.1.

QUESTIONS?

(vote)

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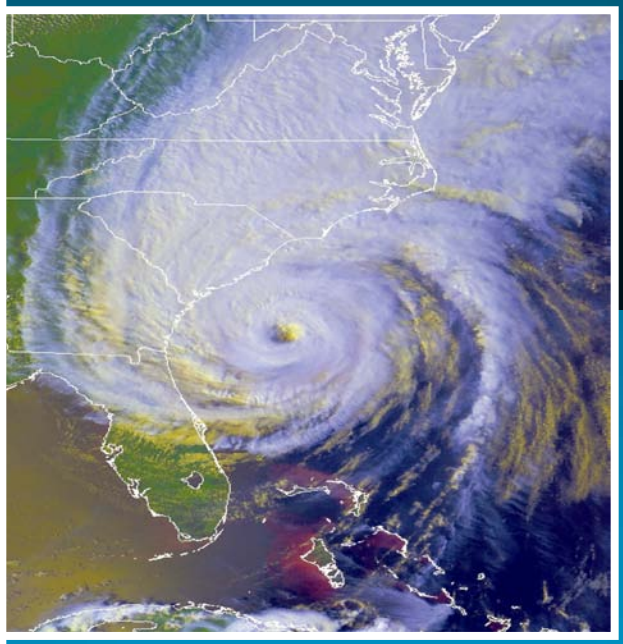
Change Management Board



Weather Enhancements

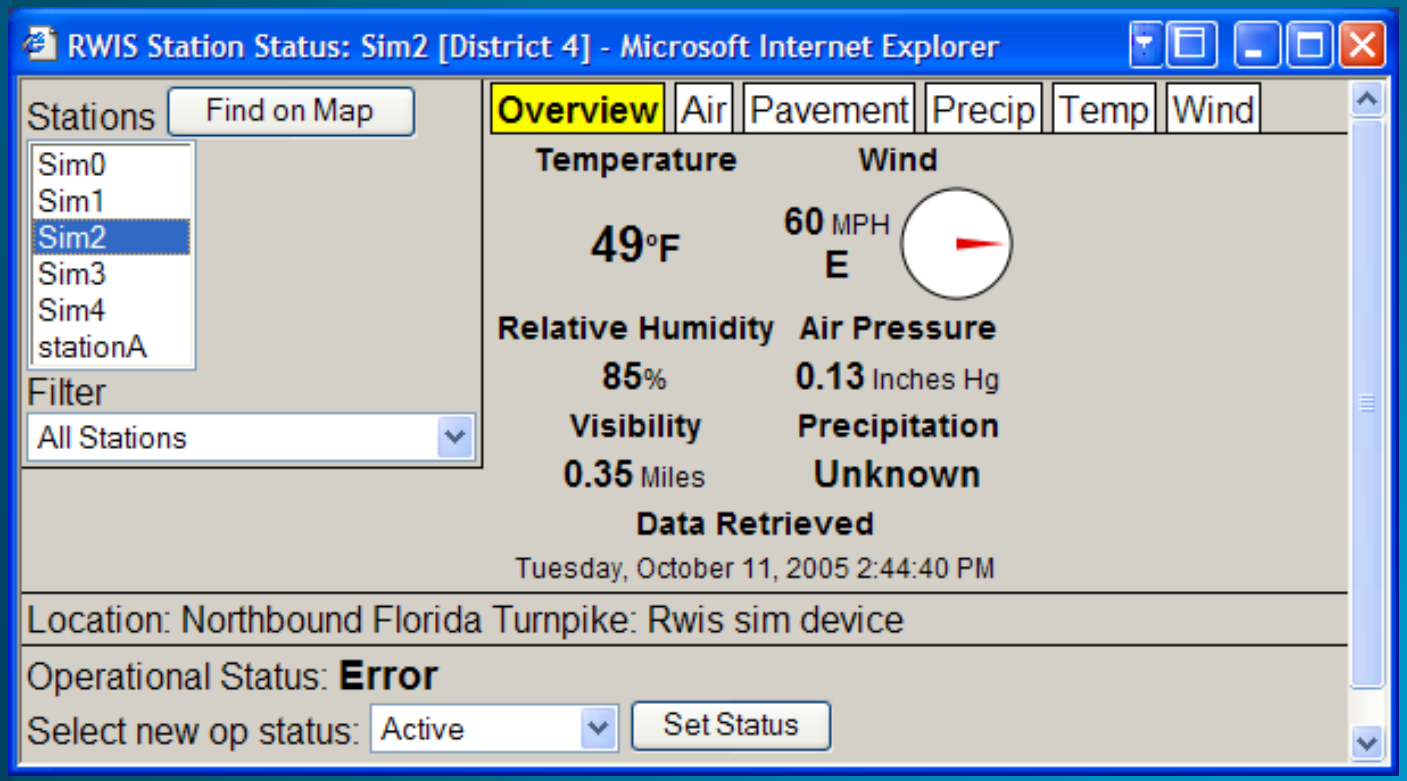
Clay Packard, Atkins

Weather Enhancements

- **Road Weather Information Systems**
  - Covered by NTCIP 1204 **v02**.18 (April 2004)
  - Updated to NTCIP 1204 **v03** (October 2009)
- **SunGuide Operational Needs**
  - Newer products increases competition/quality
  - Additional operational scenarios:
    - Low Visibility / Fog detection
  - Integration into Incident Detection / Event Mgmt
    - Configurable thresholds for data values
    - Post messages with response plans
  - Reporting on device status and data
  - Consistent, user-friendly GUI

Existing Implementation

- NTCIP 1204 v02.18 protocol support
- Status only, using older style, HTML dialog

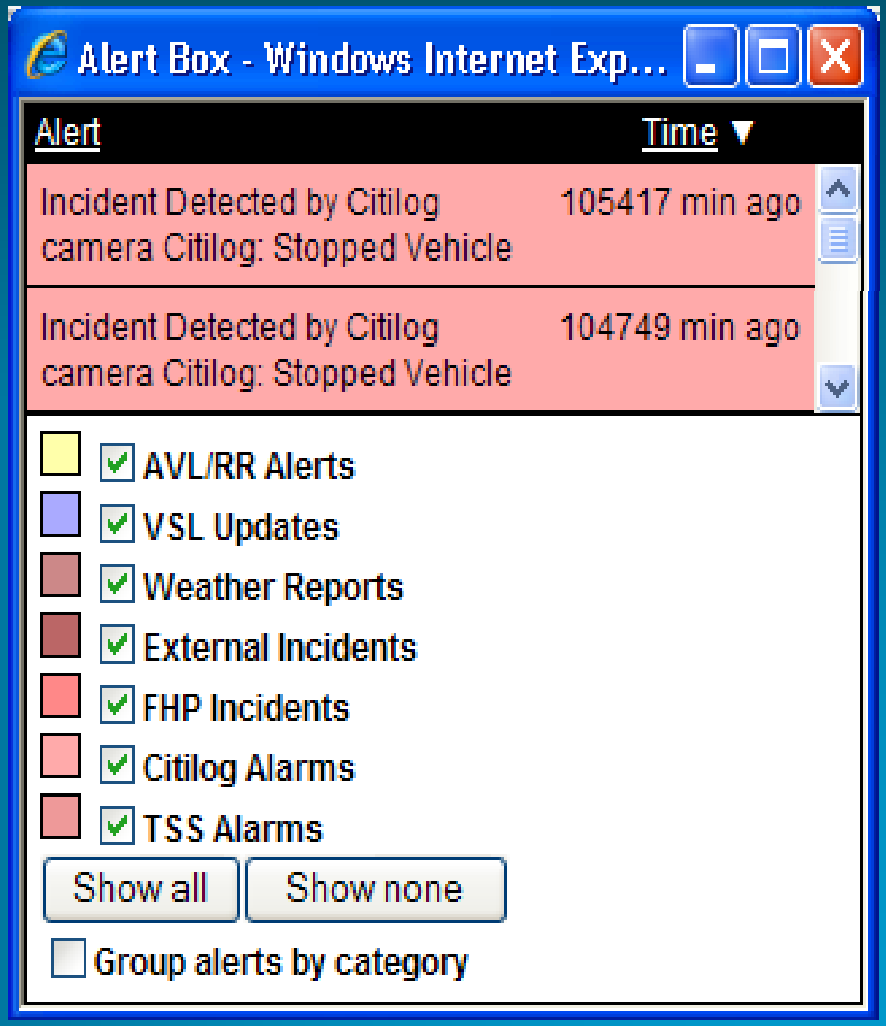


Software Enhancement

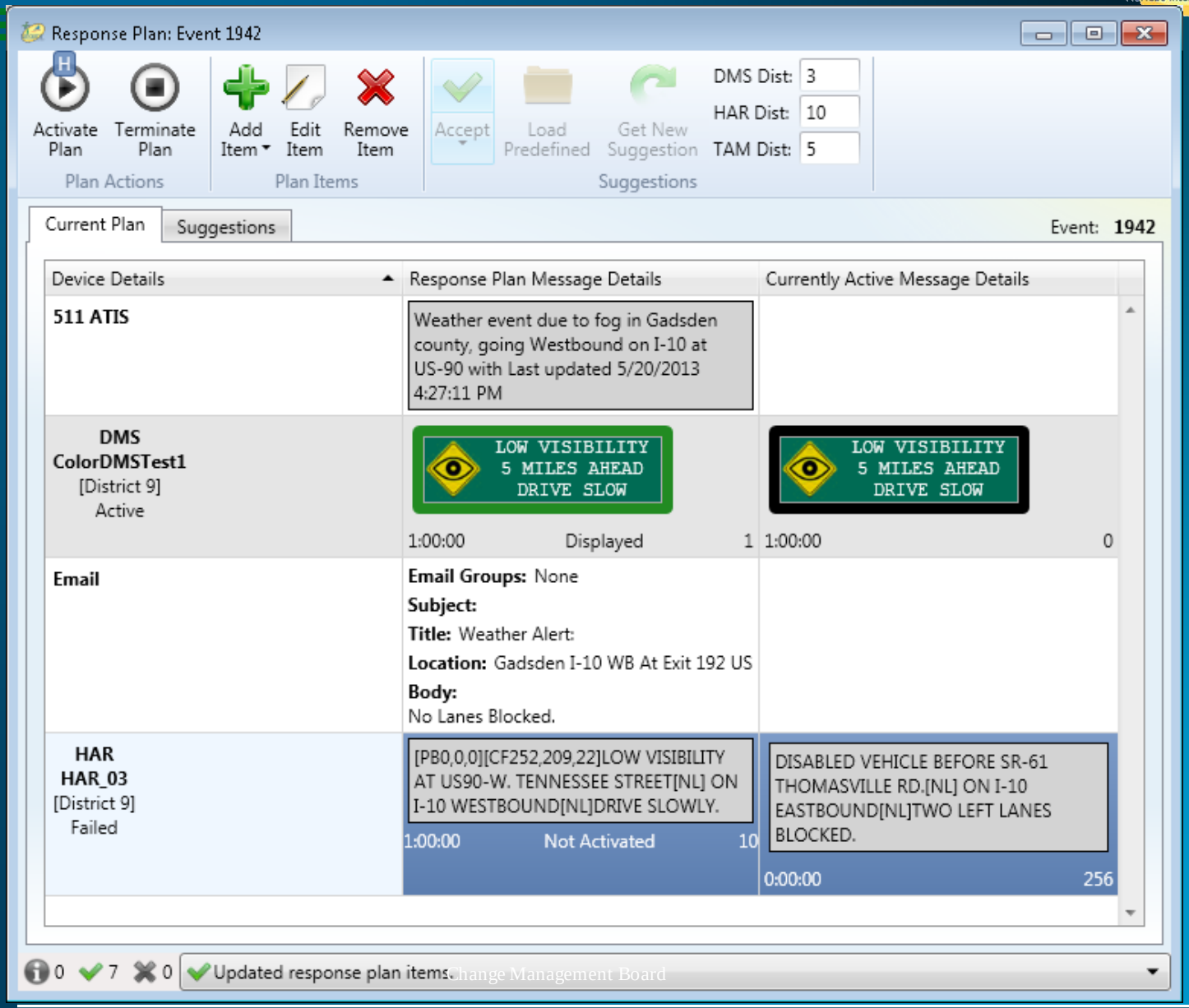
- **Add Support for version 3 of NTCIP 1204**
  - Maintain support for version 2 (of course!)
- **Enhance GUI**
  - Windows Presentation Framework (WPF)
  - Consistent with other new enhancements
- **Reporting**
  - Device Status (existing)
  - Data Report with filters (new)

Software Enhancement

- **Add Weather Alert**
  - New RWIS category
  - Handled consistently as other alerts
  - Create weather event
  - Set affected area
  - Generate Response Plan
  - DMS, HAR, email, Connected Vehicle, 511 responses



Low Visibility Response Plan



Color DMS RPG Message

System Modifications

- **RWIS**
  - Protocol Update: NTCIP 1204 version 3
- **IDS Integration**
  - RWIS will produce alerts and send to IDS
  - Thresholds set for individual RWIS data fields
  - New IDS Driver
  - New alert Type
- **EM**
  - Weather template for DMSs in response plans
    - Distance-to-station parameter for templates

Cost and Schedule

- **Cost for SunGuide Software modifications:**
  - $84K
- **Schedule:**
  - Planned for SunGuide Software Release 6.1.

QUESTIONS?

(vote)

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Upcoming RITIS Enhancements

Arun Krishnamurthy, FDOT

RITIS Contract Status

- Original contract ended Jan 2013
- Process on entering new contract
  - Complex legal language negotiations
  - Anticipated in another month

New Contract Priorities

- Fix existing system issues
- New modifications
  - Compatibility with Release 6.0
  - Nokia data integration
  - Probe data integration
- Future enhancements
  - We will prioritize in statewide forum
- System defects
  - Email flsupport@ritis.org
  - FDOT PM team gets all these emails and reviews monthly with UMD.

QUESTIONS?

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Priority Items by District

Javier Rodriguez, FDOT

Review Action Items

Javier Rodriguez, FDOT