



Change Management Board Meeting

April 18, 2011

Video Conference: CO- Burns Video Bridge 3

Audio: 850 - 414 – 4660



Welcome and Call for Quorum

Eric Gordin, CMB Chairman



Agenda



Time	Item	Lead
1:30 - 1:35	Welcome and Call for Quorum	Eric G
1:35 – 1:40	Previous Meeting Recap and Action Item Review	Eric G
1:40 – 1:45	FMT Update	Frank D
1:45 – 1:50	ITS WAN Update	Frank D
1:50 – 2:10	Proposed Vendor Driver Development <ul style="list-style-type: none">• Wavetronix HD (Vote)• Sensys (Vote)	Arun K
2:10 – 2:30	Camera Video viewable through SunGuide Map (Vote)	Clay P
2:30 – 2:50	MIMS (Vote)	Arun K and James B



Agenda (cont')



Time	Item	Lead
2:50 – 3:10	H.264 Driver	Tucker B
3:10 – 3:30	MS SQL Server and SunGuide	Steve N
3:30 – 3:50	Color DMS	Eric G
3:50 – 4:05	Closed Events not Shown on Map	Clay P and Pete V
4:05 – 4:15	Action Items Review	Eric G



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Previous Meetings Recap and Action Items Review

Eric Gordin



January 2011 Action Items



- 1. Frank Deasy to coordinate District connections to FHP CAD. Contact Neena Soans and Craig Vahle on behalf of District 4; Mark Laird on behalf of District 6; and Clay Packard on behalf of TERL.**
- 2. TRC will be established to further define full color DMS, including research of other states with full color DMS and reporting back to CMB with final recommendation (TRC - Reps from MDX, District 7, District 5, OOCEA, and Central Office)**
- 3. CO and OOCEA to contact Wavetronix in regards to proposed OOCEA enhancements for HD125 device.**



Jan '11 Action Items con't



4. Eric Gordin to schedule CMB meeting prior to the April meeting, to vote on Vehicle classification within proposed OOCEA enhancements and Software Video Decoder Viewer
5. SwRI to provide H.264 White Paper; due week of January 31st.
6. CMB to make H.264 decision regarding ONVIF and/or PVIA.
7. Eric Gordin to provide CMB Change Management Process document to new members.



Jan '11 Action Items con't



8. MIMS – gain understanding of potential future support costs on a statewide level, and circulate MIMS software requirements statewide.
9. CMB to review Database document, provide feedback, concurrence of approach.
10. Clay Packard to provide ConOps for Software Decoder.



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ITS Telecommunications Update

**Randy Pierce &
Frank Deasy**



ITS WAN Update - The Present



- **Which District ITS Networks are online?**
 - D2 RTMC, Jacksonville
 - D4 RTMC, Ft. Lauderdale
 - D5 RTMC, Orlando
 - D6 RTMC, Miami
 - TERL Test-Bed TMC, Tallahassee
- **What is currently supported?**
 - SunGuide center-to-center features.
 - FHP CAD data.
 - Video sharing.
 - Any and all IP-based inter-district ITS traffic.



ITS WAN Update-The Future



- **FTE RTMCs, Pompano and Turkey Lake**
 - ITS WAN equipment installed at Pompano RTMC.
 - Next Step: FTE switch configuration and connection to ITS WAN switch.
- **D7 RTMC, Tampa**
 - Qwest packing ITS WAN equipment for on-site commissioning.
 - TransCore preparing to test and characterize fibers.
- **D1 RTMC, Ft. Myers**
 - Qwest packing equipment for on-site commissioning.
 - Next Steps: Resolve FTE fiber path issues; Test and characterize fibers.
- **D3 RTMCs, Pensacola and Tallahassee**
 - D2 procuring equipment for D3 installation.
 - Will use FDOT microwave system.



ITS Facility Management System Central Office Activities



- **Develop Scope for ITSFM Application Upgrades**
 - Standard Reports
 - Functionality Upgrades
 - Performance Upgrades
 - Code List Updates
- **Scope being review with Byers**



ITS Facility Management System Central Office Activities



- Starting work for District 6 project to survey, inventory and encode:
 - 82 miles of fiber optic system
 - 74 Wireless sites
 - 513 ITS Devices
 - Electrical systems
- Working on District 7 request for Central Office Minimum Requirements on what elements to survey and encode



ITS Facility Management System Central Office Activities



- **Develop Language to be included in New Contracts for the Data Collection & Encoding of New Facilities by Contractors**
- **Draft set of Automated Tools to Expedite Encoding being reviewed**
- **Develop User Training Material and Course for Managers, Engineers and Technicians**
- **Develop User Encoding Material and Training Course**



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Wavetronix HD

Arun Krishnamurthy



Wavetronix HD Driver



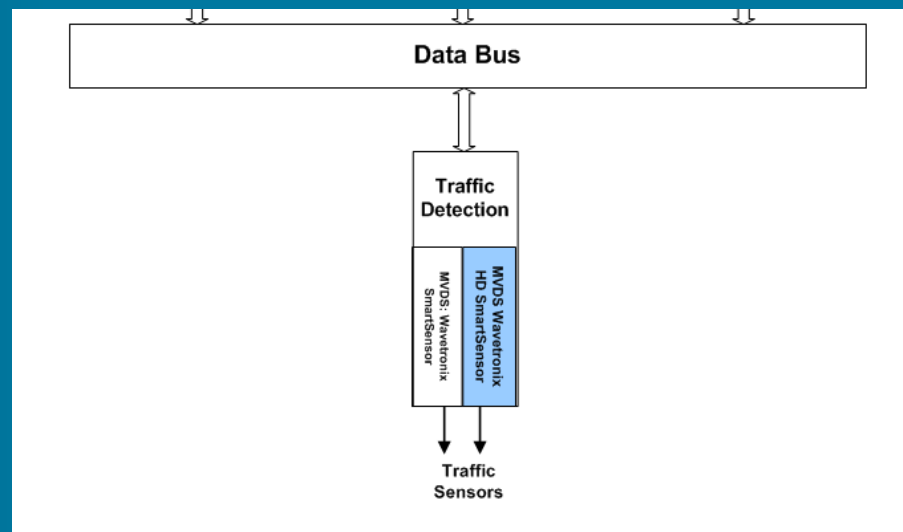
- **Wavetronix SmartSensor 125 HD Enhancements**
 - SmartSensor 125 HD Device Driver
 - Read and archive up to 10 lanes of travel
 - Read and archive 8 different vehicle classifications
- **There will be no modifications to the SunGuide map with classification data**



Work Performed by Wavetronix



- Wavetronix has agreed to fund development of the SunGuide driver.
 - Wavetronix will have a separate contract with Atkins to conduct work

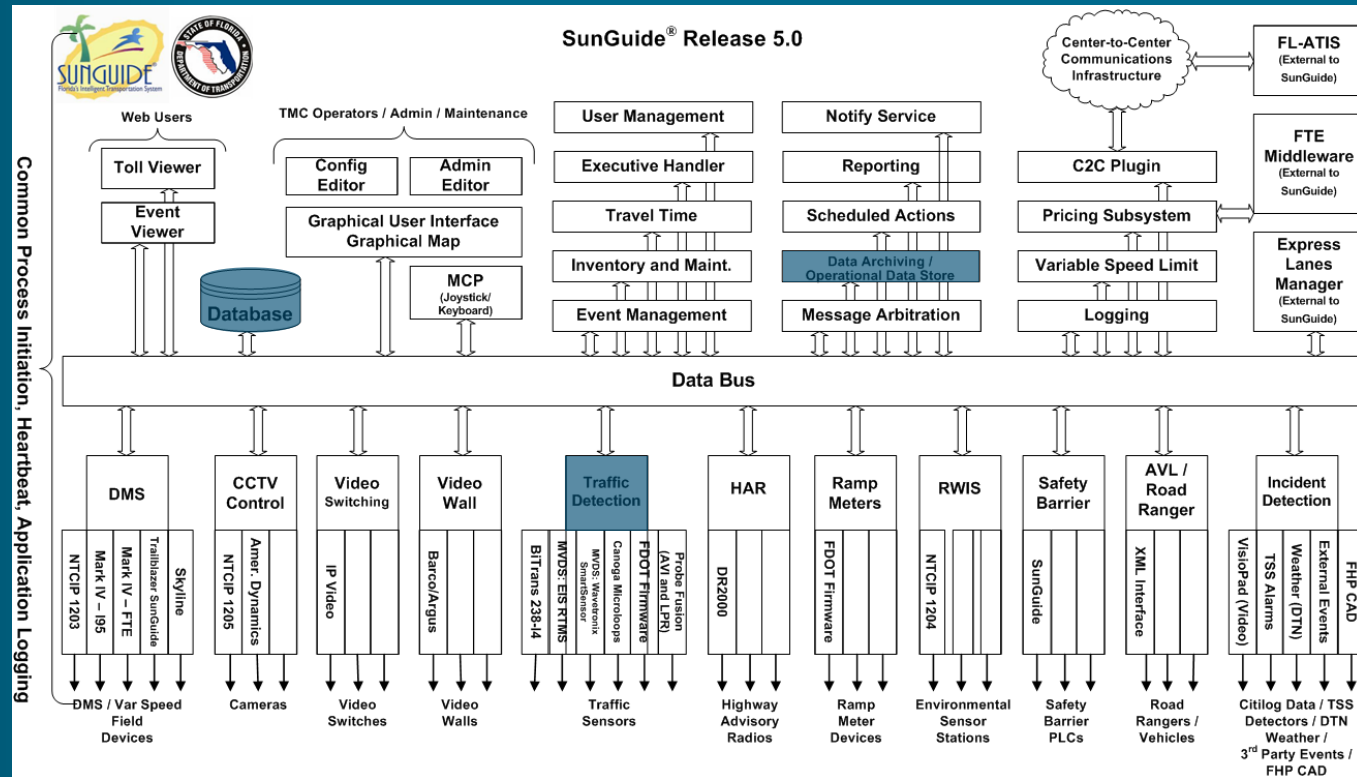




Work Performed by FDOT CO



- FDOT will fund development of the subsystem, database modifications and archiving functions.
 - FDOT will use its contractor, SwRI to do this work





Driver Testing



- **Wavetronix/ Atkins completes driver development**
- **SwRI will test the driver for FDOT CO**
- **FDOT CO will have to provide information to Wavetronix prior to them starting development**
 - **This includes schema updates**
 - **Wavetronix is responsible for all functionalities of the driver**
 - **Communicating with the Wavetronix devices,**
 - **Acquiring data from them, and**
 - **Reporting this data to the TSS subsystem**



Other Discussions



- **RTMS G4**
 - Some districts have deployed G4
 - This is not supported by SunGuide currently
 - If Districts procure in the future, recommend that contract language require the vendor to develop the driver.



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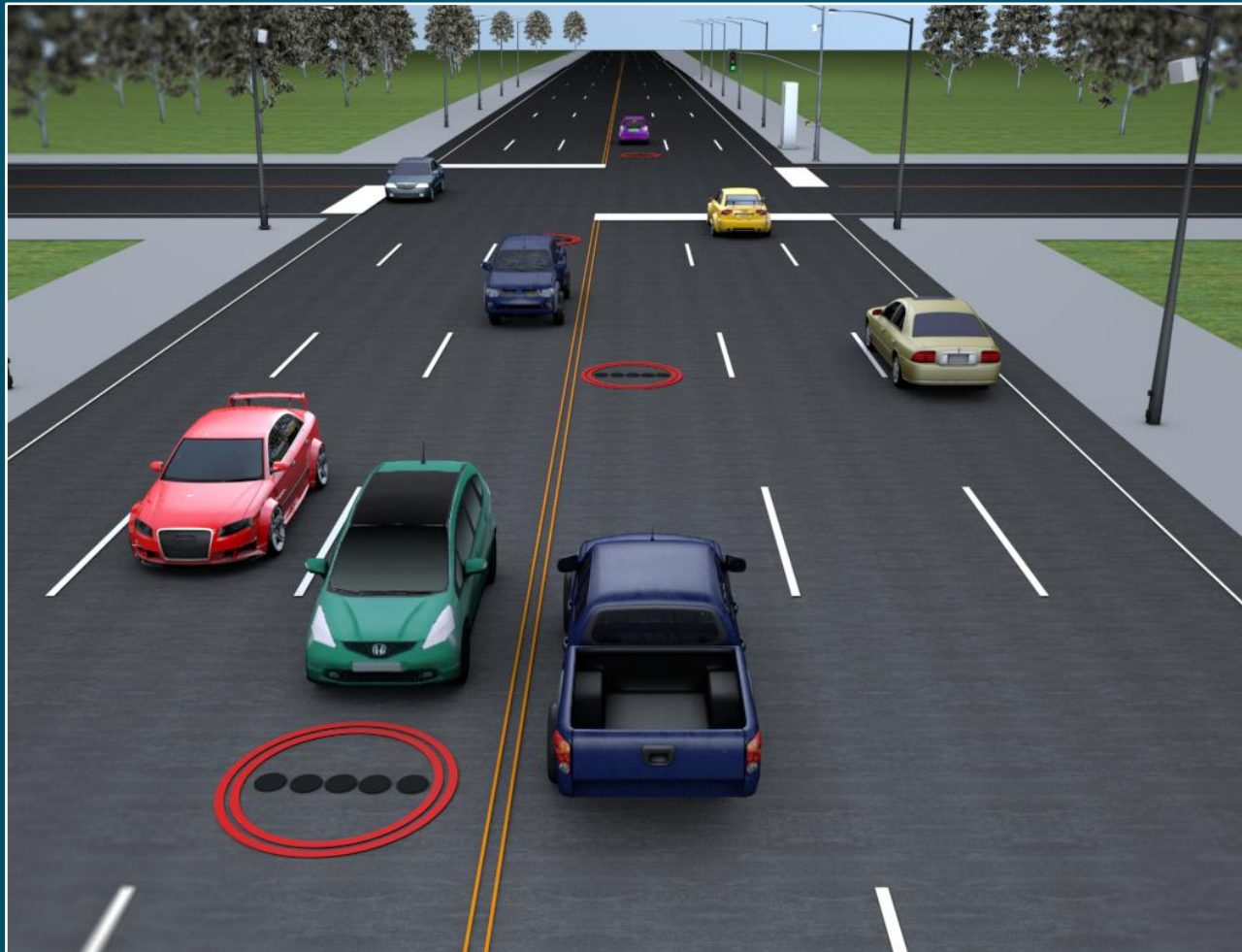


Sensys

Arun Krishnamurthy



Sensys Travel Time System



Sensys Components



Flush-Mount
Wireless Sensor



Access Point



Repeater



Controller
interface



Discussion



- **Sensys is being used in Washington State, Utah, California and Missouri**
- **Sensys may potentially be used in Orange County, Florida**
- **Orange County stipulated in the contract that Sensys shall integrate with SunGuide**
- **Question to CMB – Sensys integration with SunGuide?**
- **Use C2C to communicate and receive processed data, similar to BlueToad (also not approved)**



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Camera Video Viewable through SunGuide Map

Clay Packard



Software Video Decoder Viewer



- Operators need video viewers on desktop
 - No external hardware / software to purchase / track
 - No configuration necessary
- Fully integrated into map
 - Right-click on camera to launch (from context menu)
 - Button from CCTV status dialog to launch
- Basic window
 - Can be moved/resized
 - Includes button to launch the CCTV status (for PTZ)



Optional Features if desired



- Options
 - Limit open streams so computer performance does not deteriorate
 - Video Touring



Estimated Costs (Vote)



- Base functionality
 - \$23,000
- Limit Open Streams
 - \$7,000
- Video Touring
 - \$

- Total Estimated Cost
 - \$30,000

- **Vote**



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MIMS

**Arun Krishnamurthy,
James Barbosa and
Dong Chen**



MIMS Overview



- **Inventory tracking software**
- **Includes mobile application MIMA (Maintenance Inventory Mobile Application)**
 - **To support technicians on the field**
 - **Allows technicians access real-time online maintenance requests**
- **Features include:**
 - **Configured to work with SunGuide**
 - **Includes resource location and status**
 - **Inventory data entries and updates via handheld scanner**
 - **Online trouble ticket management**



MIMS Ownership



- MIMS is not completely owned by the Department
- IBI owns libraries that are critical to the use of MIMS
- This library features include –
 - Low level software / device communications
 - Software framework
 - Utilities, logging
 - Generic / base asset management functionality
- This library is used by other ATMS systems in US and Canada
- IBI would allow the library to be used by SunGuide deployments.



Roll-out Plan



- **If CMB chooses to integrate MIMS into SunGuide**
 - **Typical tasks to be performed include:**
 - **Gather existing documents, create any missing content, update SunGuide docs (Requirements, Design documentation, updates to SUM, VDD)**
 - **Integrate into SunGuide**
 - **Conduct testing**
 - **Deploy in districts**
- **If CMB chooses to integrate MIMS in SunGuide**
 - **Available later this year**



Difference between MIMS and ITS-FM



	ITS-FM	MIMS
Need	Mandatory	Optional
Functions	Catalog devices and fiber deployed by FDOT	Inventory of spare parts; track issues being worked by maintenance staff
Effort needed by District	Depends on infrastructure	ITS FM data is different from data in MIMS. Software use is optional; information will be entered by maintenance contractor; good coordination tool.



Other Comments



- If CMB approves, FDOT will enter into an agreement to use the IBI libraries.
- If at a later date FDOT does not want to use IBI libraries, FDOT can ask its software contractor to reverse engineer these libraries.
- Support cost - consistent with support cost for any software product
- Also, the software will go through vetting process before integrating with SunGuide.

VOTE



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Video Switching Protocols (H.264 Driver)

Robert Heller



SunGuide Video Support



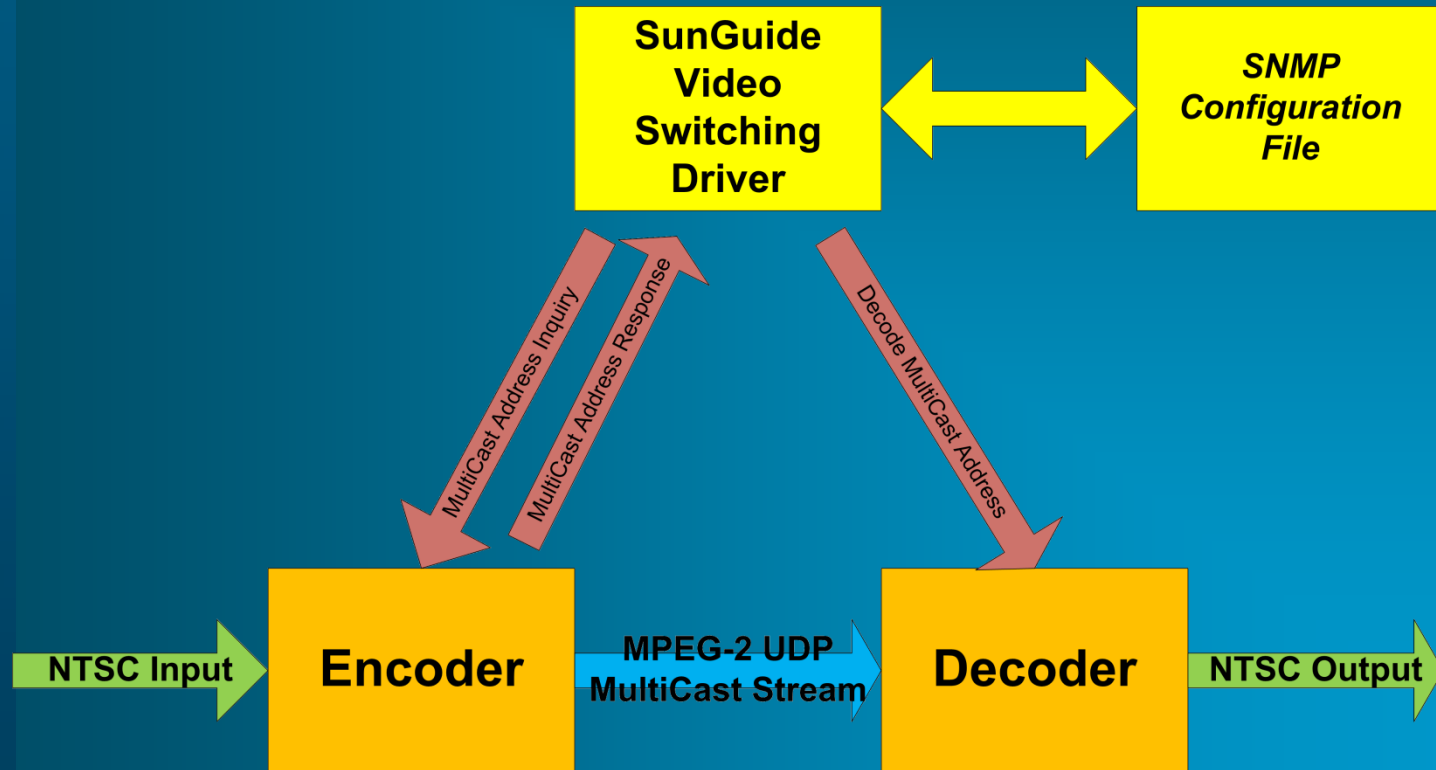
- **Moving Pictures Expert Group-2 (MPEG-2) encoded video.**
- **American Dynamics, Cohu, and Vicon analog cameras.**
- **NTCIP and American Dynamics protocols for Closed Circuit Television (CCTV) control.**
- **Video switching using Coretec, Cornet, Impath, Teleste, and VBrick IP CODECs.**
- **Barco video wall control.**
- **Serial and Ethernet connectivity depending on device.**
- **Simple Network Management Protocol (SNMP) used for command and control of some devices.**



Current SunGuide Video Switching



- Decoder / Encoder management is SNMP
- Broadcast stream is MPEG-2





IP Video General Standards



- **Encoding**
 - MPEG-2
 - MPEG-4
 - H.264
- **Switching**
 - RTP / RTSP / SDP / SAP
 - ISMA



Traffic Surveillance



- **NTCIP Standards**
 - **NTCIP 1205 Camera control**
 - **NTCIP 1208 Analog Video Switching**



Physical Security Industry



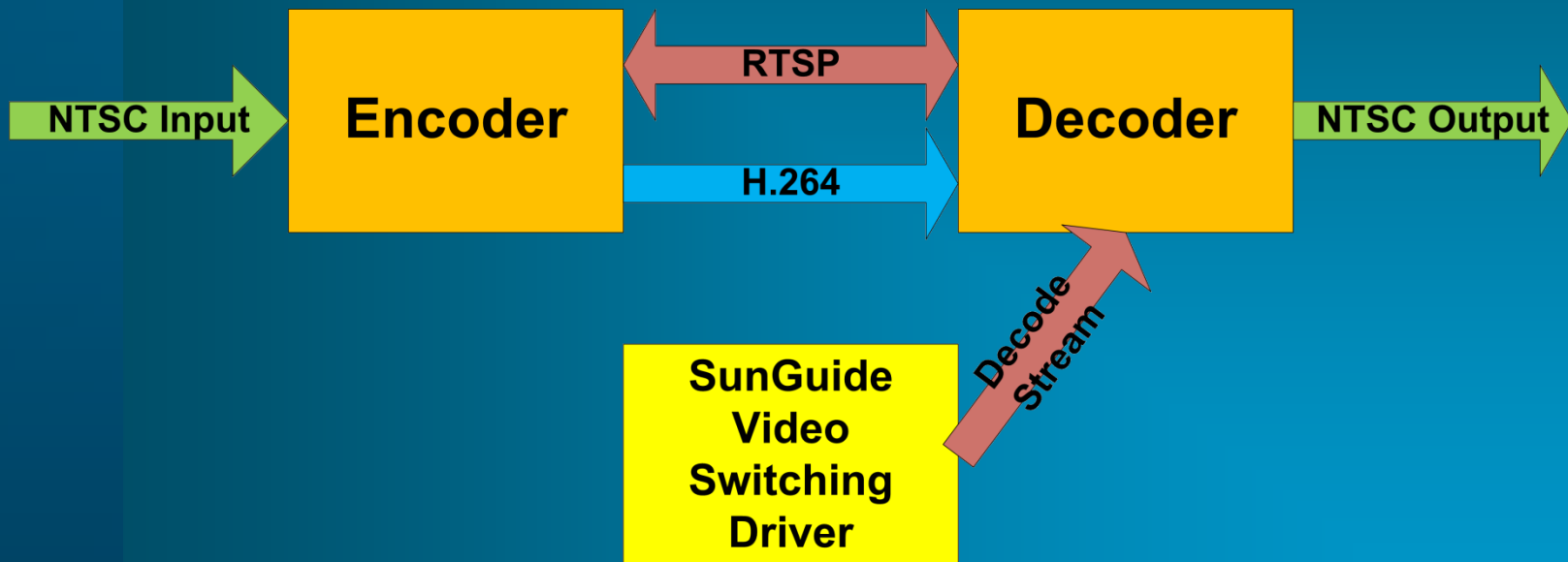
- **ONVIF**
 - PTZ camera control (no iris, focus, alarms, etc.)
 - Decoder / encoder management
- **PSIA**
 - Decoder / encoder management
 - PTZ camera control (iris, focus)



Future SunGuide Video Switching



- Decoder management via ONVIF or PSIA
- Decoder & encoder negotiate encoded video stream





Recommendations

- **Push USDOT to mandate a standard**
 - Time consuming process
- **Joint standards with other state DOTs**
 - Industry might respond with compliant products
- **Specification Update**
 - **Gold Standard**
 - Promotes compatibility with all approved devices
 - **Pre-qualification**
 - Build the APL independent of roadway projects
 - **Pre-award Testing**
 - Require pre-award testing to demonstrate interoperability



Migration Options: MPEG-2 to H.264



- **Parallel Operation**
 - Least convenient to operators
 - No SunGuide update beyond device support
- **2-stage switch to convert from one to the other**
 - Latency issues, additional video degradation
 - Larger SunGuide upgrade



Migration Options

MPEG-2 to H.264



- **2-stage switch to convert from one to the other using the video wall controller as 2nd stage**
 - No problems with a latency issues or additional video degradation
 - SunGuide upgrade needed
- **Use decoders compatible with both formats**
 - Interoperability would need to be demonstrated
 - No SunGuide update beyond device support



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SQL Server Conversion Analysis

Steve Novosad



Overview



- Problems with Oracle
- Benefits of SQL Server
- Objectives
- Discussion



Problems with Oracle



- Oracle is expensive
 - Licensed on a per **core** basis
 - Annual Support Fees
- Database Complexity
 - Maintenance
 - Development



Benefits of SQL Server



- **SQL Server is much more cost effective**
 - Less expensive
 - Licensed per processor (not per core)
 - No annual licensing fees
- **Simpler (very much so)**
 - Maintenance
 - Development
- **Supports Oracle features**
 - Failover clustering (FailSafe/RAC)
 - Mirroring (DataGuard)
 - Data Loading (RAC)



Objectives



- **SunGuide DB Support for Oracle and SQL Server**
 - Database agnostic Model using ERWIN
 - Build scripts
- **Standardize Model**
 - Use product agnostic data types, names, etc.
 - Requires SunGuide source code modifications
- **Relocate business logic to SunGuide .NET code**
- **Add SunGuide configurability and/or use ODBC**



Discussion



- Discussion of SQL Server
 - Interest
 - Concerns



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Full Color DMS

Eric Gordin



Full Color DMS



- **General Discussion:**
 - Resolution issues (each pixel can only represent one color)
 - Light text on dark background
 - Text color options:
 - White for regulatory
 - Orange for work zones/construction
 - Amber (Yellow) text for advisories/warning
 - Background color options:
 - Black
 - Green for guidance
 - Blue for motorist services



Full Color DMS



- Recommended examples:



#1



#2



#3



Full Color DMS



- Recommended examples, cont.:
 - Left-hand side graphic or right-hand side graphic, not both (for consistency)



#4

OR



#5



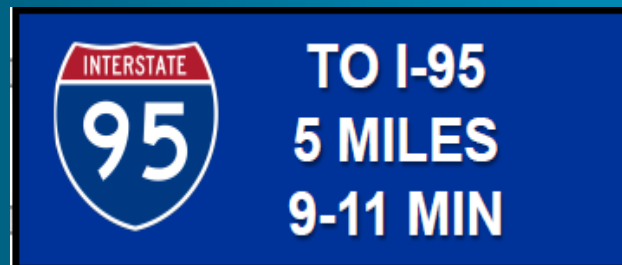
Full Color DMS



- Recommended examples, cont.:
 - Travel times with 1 destination per phase



#6



#7



Full Color DMS



- Needs further evaluation:
 - Travel times with 2 destinations per phase
 - Size of route shields? Resolution issues?

TRAVEL TIME
TO  5 MIN
TO  30 MIN

#8

TRAVEL TIME
 5 MILES 5-7 MIN
 20 MILES 20-25 MIN

#9

TRAVEL TIME
 15 MILES 15-20 MIN
 30 MILES 45-50 MIN

#10



Full Color DMS



- **Next Steps**

- **Graphics**

- **Separate areas for graphics. Text areas would need to center-justify based on the center point of the text area.**
- **Is the width of the graphic area operator-configurable, fixed, or auto-adjusted? Allow flexibility?**
- **Each pixel can only represent one color.**
- **Embed graphics in-line with text? Are the graphics large enough for messages with three lines (2 destinations per phase)?**

- **Adjustments**

- **Examples #6 and #7: Modify first line to say “TRAVEL TIME TO”**



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Closed Events not Shown on Map

Clay Packard and
Pete Vega



Closed Events on Map



- **Map becomes cluttered with closed events**
 - particularly during rush hour when congestion is posted on and off around town.
 - Closed events remain on the map for an hour (until they fall off the EM dialog).
 - **FP 1601**



Options



- **Simplest option**
 - Do not show closed events on map
 - ***(SSUG Recommendation without any objections)***
- **Next Option**
 - icon configuration dialog box, an additional option under Event icons: Display Closed Events.
 - this does NOT affect the behavior of the Event List dialog
 - optional, display a closed event using a differently-colored icon (such as gray)



Cost Estimate



- Simple option or icon configuration dialog box – 2-3 days work (fairly small effort)
- The optional feature – different color for closed events is more difficult. SwRI will have to investigate.



Closed Events off Map



- Vote



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Action Item Review

Eric Gordin