

"A LONG TIME AGO  
ON A CORRIDOR FAR,  
FAR AWAY...."

# RTOP UPDATE, THIS IS.

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ITS Georgia 2016 Annual Meeting  
September 27th, 2016

R.J.Surgi, PE - AECOM  
Esteban Carrillo, EIT - GDOT  
Samuel Harris, EIT - GDOT



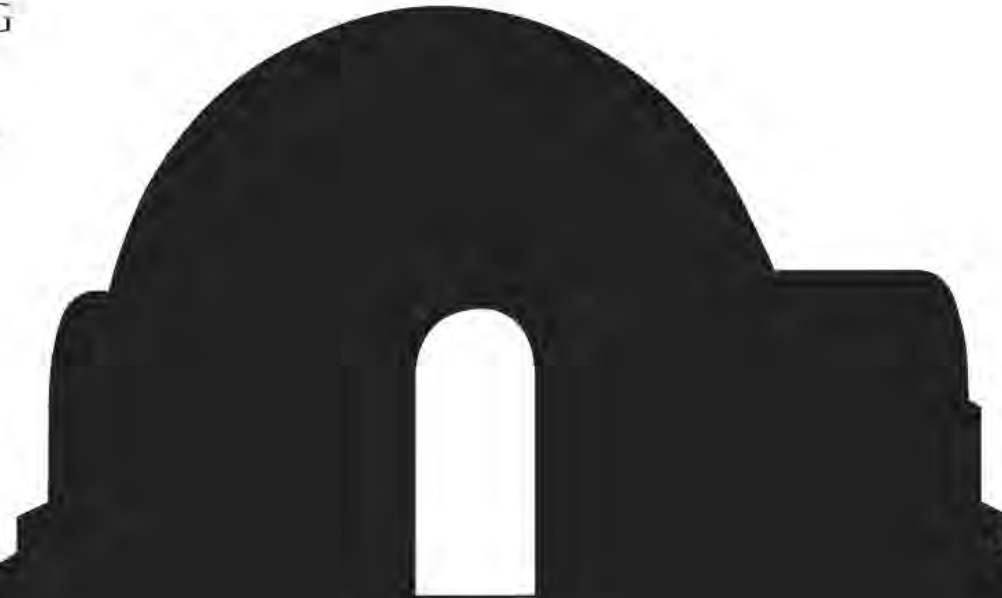
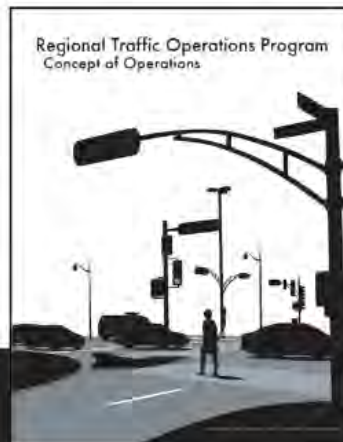
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# RTOP MISSION

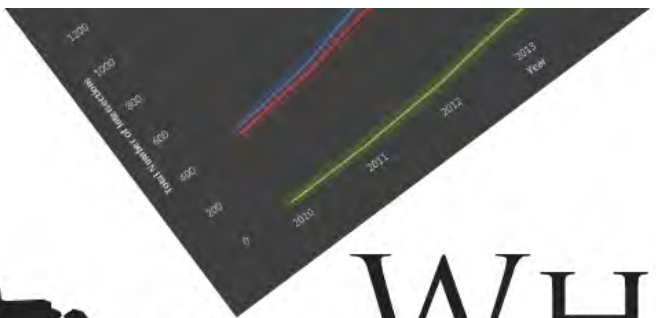
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DO OR DO NOT. THERE IS NO TRY. - YODA

TO INCREASE TRAVEL THROUGHPUT BY  
MINIMIZING CONGESTION AND REDUCING  
DELAYS ALONG REGIONAL COMMUTER  
CORRIDORS THROUGH IMPROVED SIGNAL  
OPERATIONS.



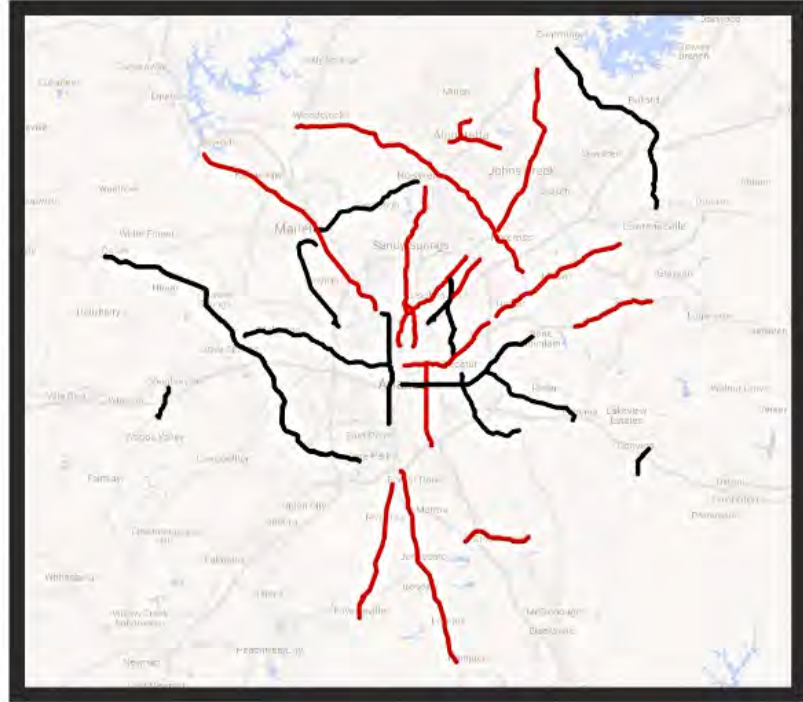
SIG



# WHAT IS RTOP?

25 Corridors, 1150+ signals,  
Span 12 Counties, and 15  
Cities in the Metro Region  
310 Centerline Miles of  
Arterial

\*2010: 430 signals, 10  
Corridors



### RTOP MISSION

RTOP is a...  
to...  
to...  
to...

### RTOP UPDATE THIS IS.

RTOP Update...  
to...  
to...  
to...

# NEW AGENCIES

- Alpharetta

SR 120 and SR 9

- Marietta

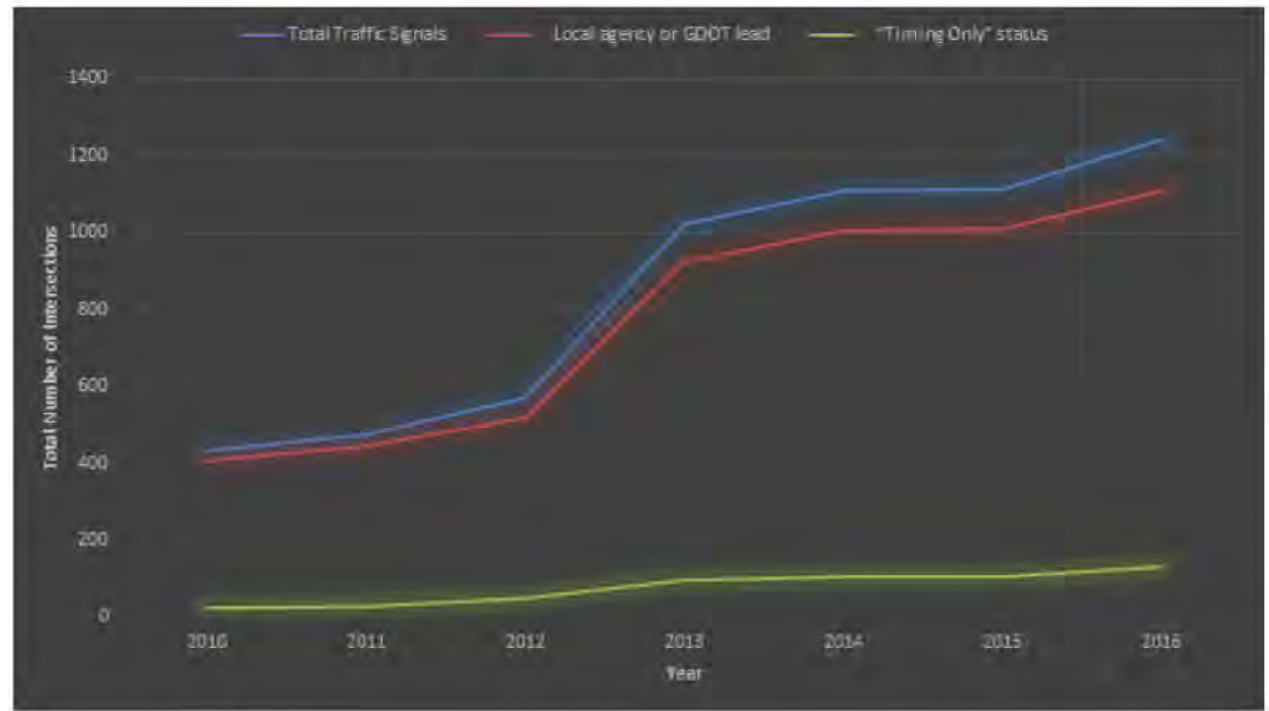
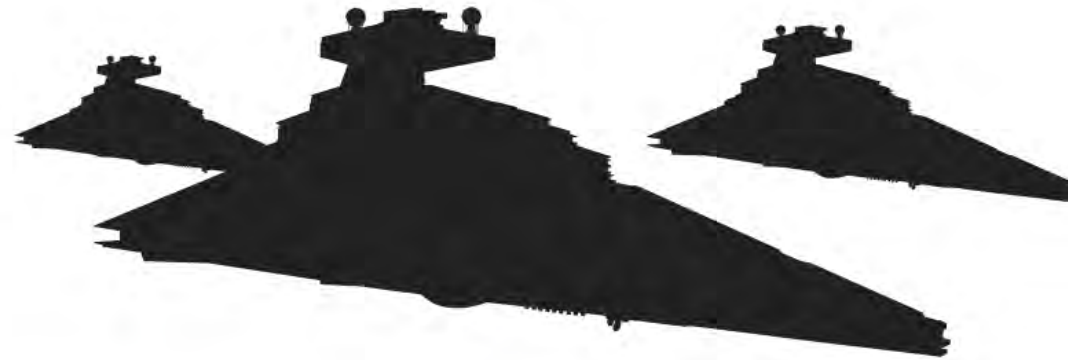
SR 5, SR 120, SR 280 and SR 360

- Chamblee

SR 13 and SR 141



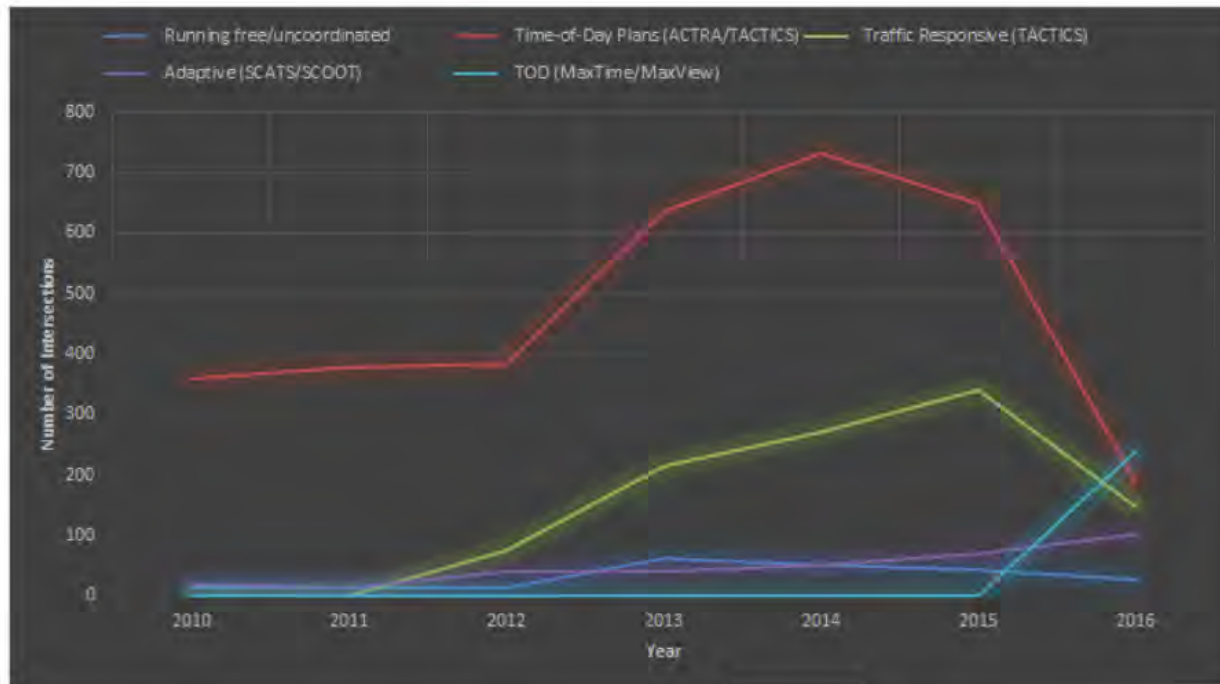
# TOTAL TRAFFIC SIGNALS



Corridors  
2012



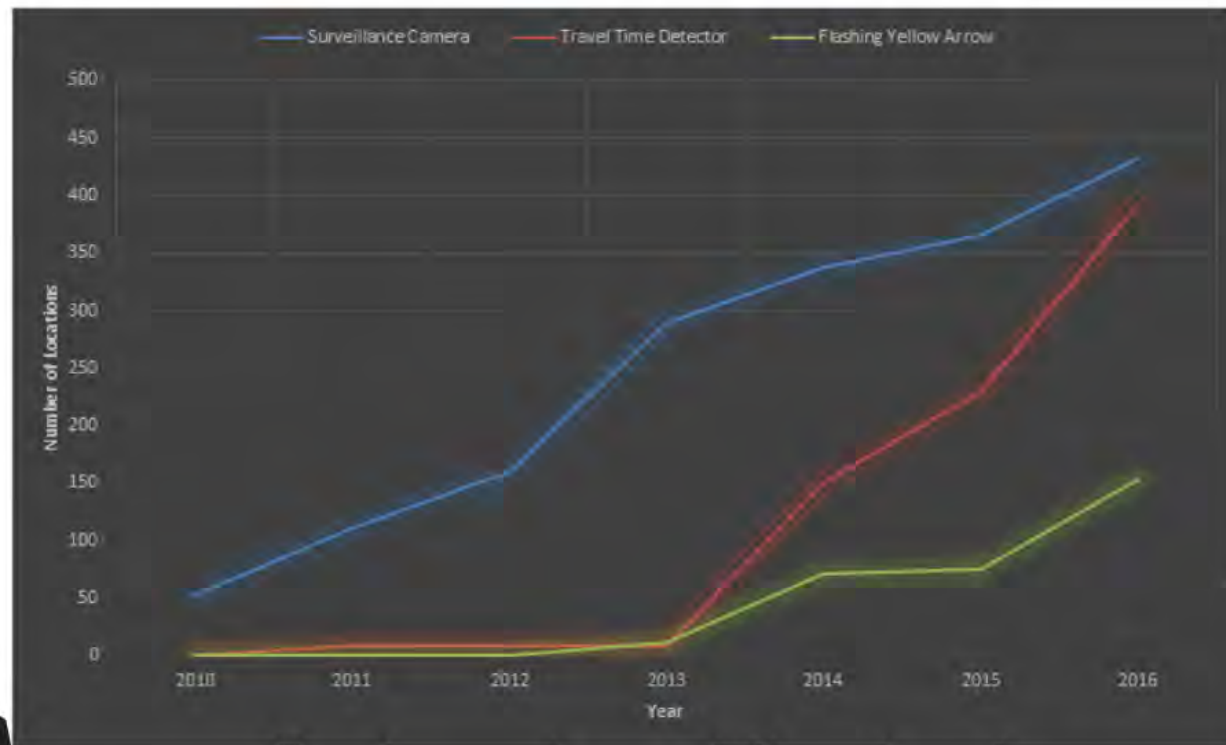
# OPERATIONAL CONTROL



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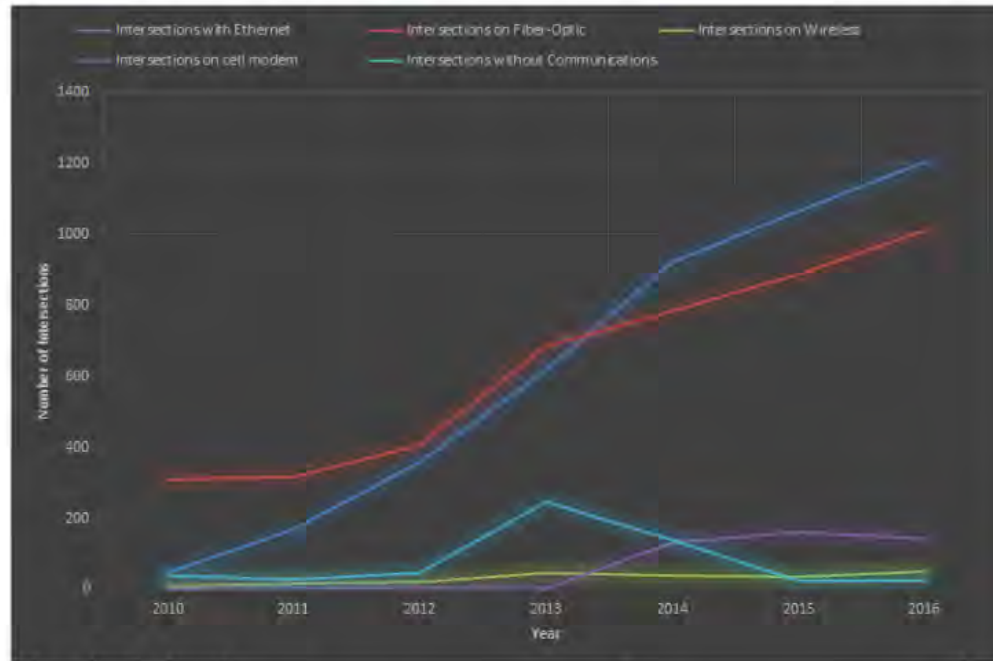
# DEVICES

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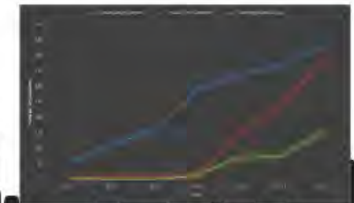




# COMMUNICATIONS



## DEVICES

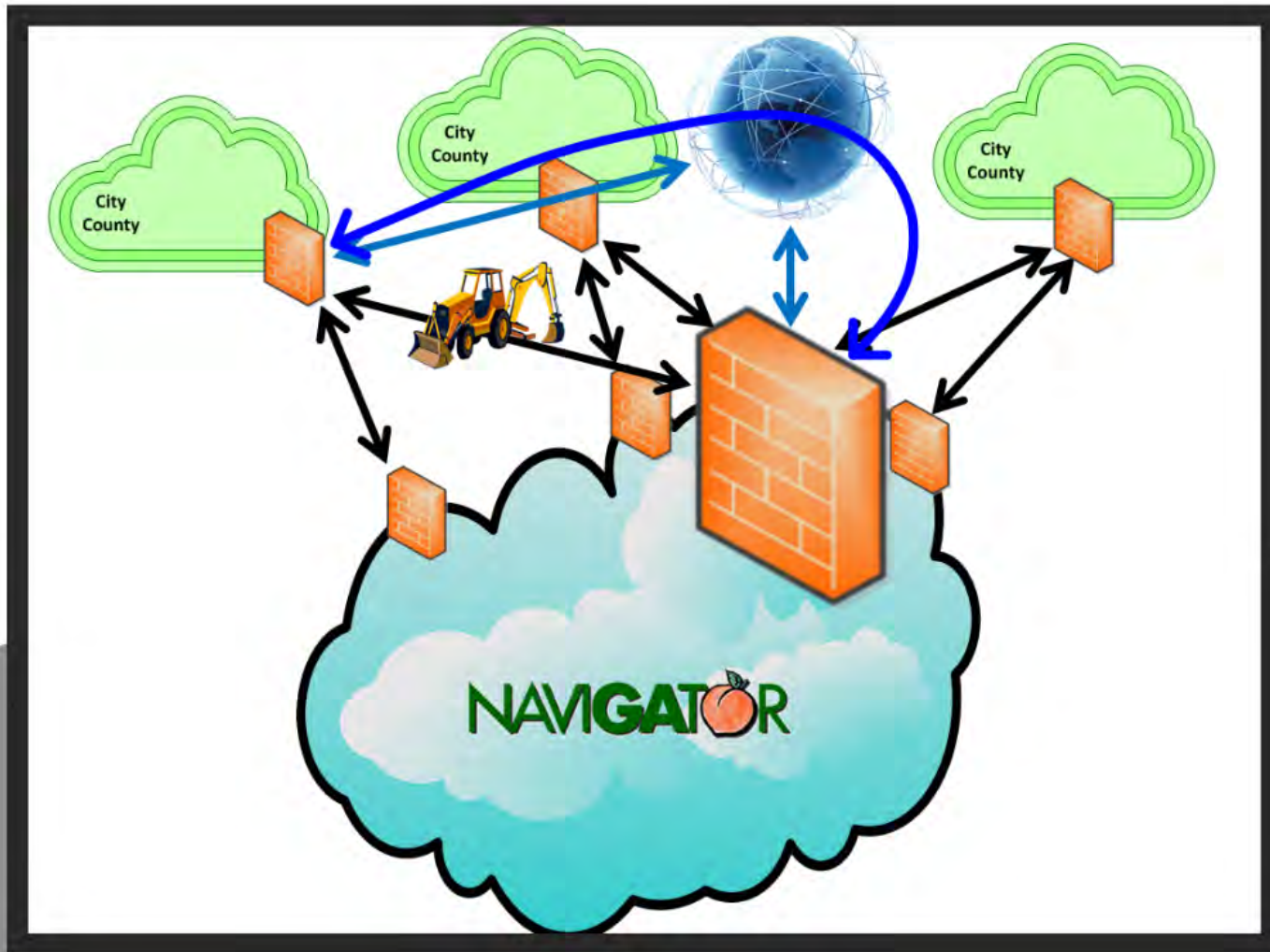


# FYA UPDATE

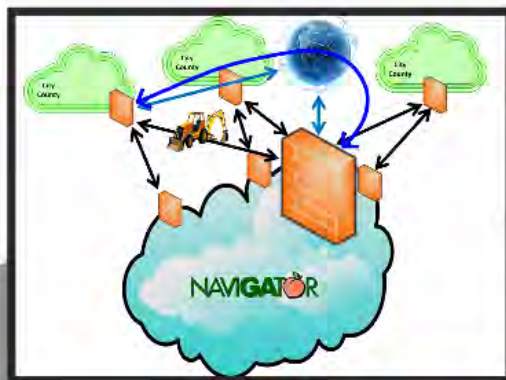


"RRWWGG!"

— CHEWBACCA



# NETWORK AND SYSTEMS





# NAVIGATOR

**RIOP**  
Regional Traffic Operations Program

HE'S NO GOOD TO ME DEAD.  
— BOBA FETT



MaxTime/MaxView

# TSOS PURPOSE

- Incident management and ticketing system
- Monitor traffic operations using central center software and ATMS to assist Corridor Mangers
- Perform conflict monitor testing
- Generate reports
- Database management



"IF YOU ONLY KNEW THE POWER OF THE DARK SIDE."

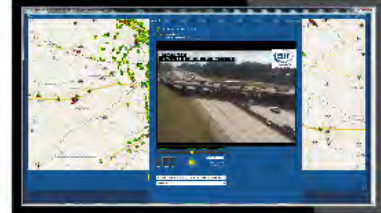
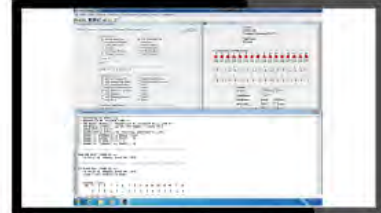
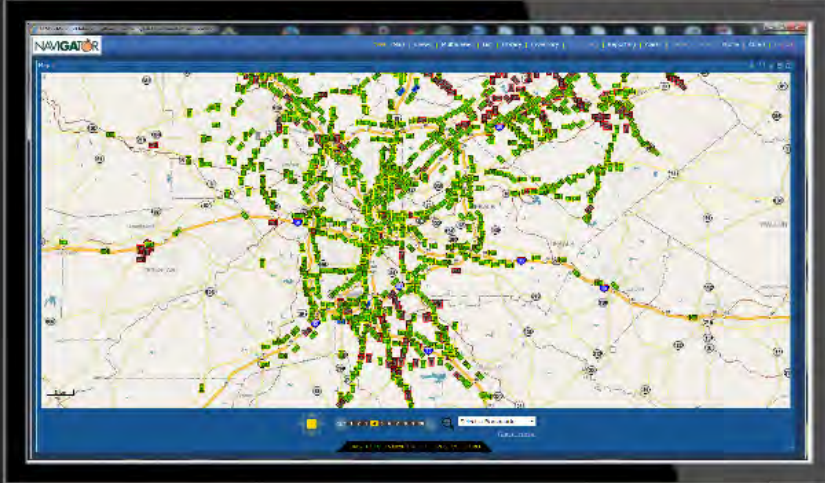
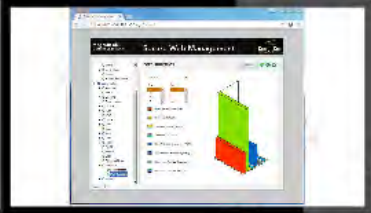
— DARTH VADER

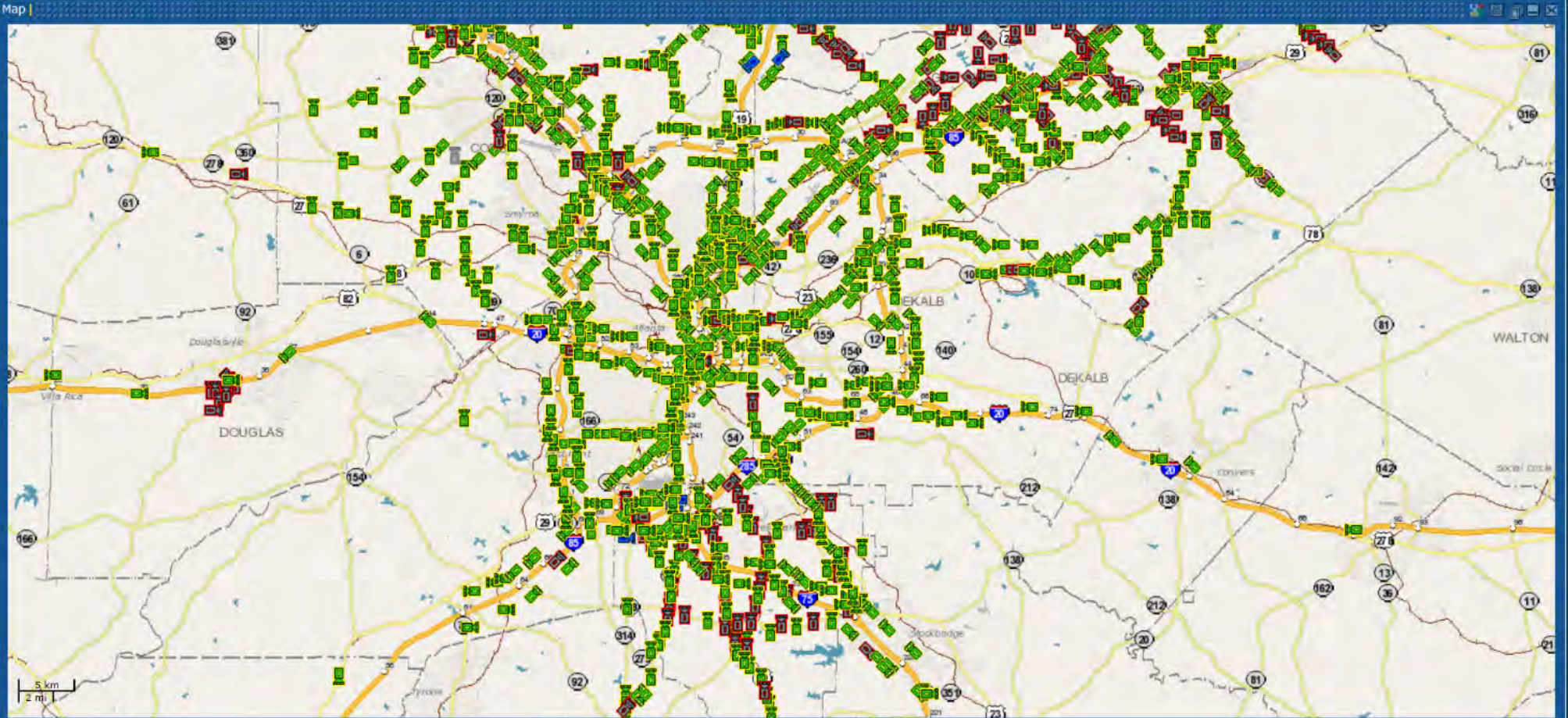


Alan  
Davis









OUT 1 2 3 4 5 6 7 8 9 10 IN



Select a Bookmark

Open Legend

DMS CCTV Events HAR ESS VDS VSL HERO


- Live Video
- Status
- Network
- Video
- Audio
- CC Streams
- PTZ
- Security
- Edge Recording
- Event Management
- Device Management
- User Management
- Date and Time
- Logout

**Live Video**

Live Video

<< Stop LiveView

Encoder: Live View Refresh rate: 5 fps Video player: No Player



PTZ Control

Preset

On Screen Menu

On

CCTV ID# ATL-CAM-272

Lock Locked By:  
PTZ By 01015362, 2 minutes ago



Status: OK US 278 / D at I-285 NB R VLC

50

Auto Auto  
+ + +  
- - -  
ZOOM FOCUS IRIS

Video Size ▾  
[Open Presets](#)  
[Open Tours](#)  
[Open Archive](#)

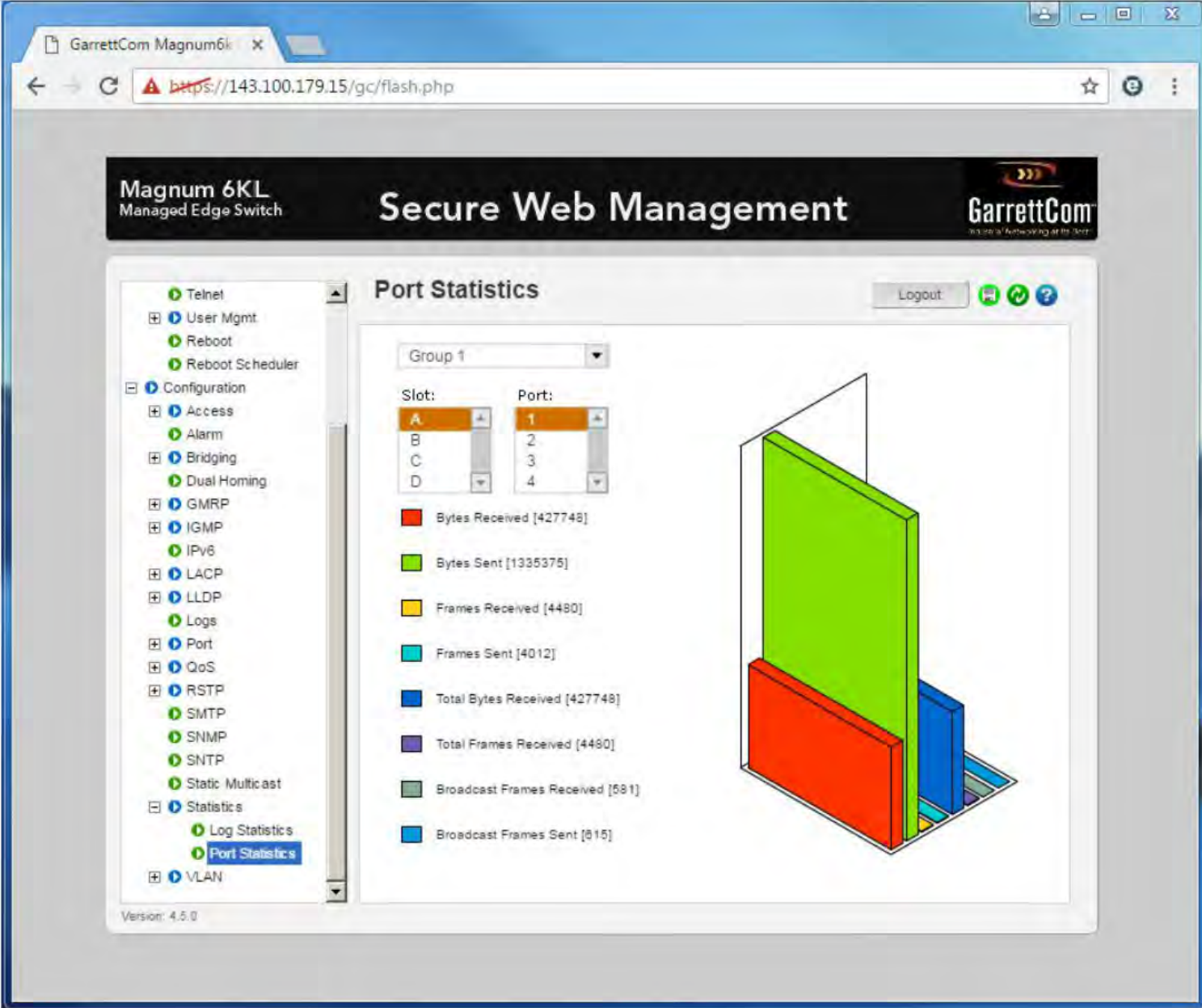
ATL-CAM-272: US 278 / Donald Lee Hollowell Pk ▾  
Select a Tour ▾  
Select Output ▾

### Sensor Setup

1	2	3-Verification				7	8
1 C	2 C	3 N	4 C	5 N	6 N	7 N	8 N

Ph 5

[Navigation Icons]



Configuration - Monitor #0 (unsaved)

Unit Data | Permissives | Dual Indication | Clearance | Yellow Disable | Red Fail | Load / Save

Option Switches:

<input checked="" type="checkbox"/> Red Fail Timing Long	<input checked="" type="checkbox"/> SSM Enables Red Fail
<input type="checkbox"/> Recurrent Pulse Disable	<input type="checkbox"/> FYAc Mode
<input type="checkbox"/> 1.0 Sec WDT Timing	<input type="checkbox"/> FYA 1-9 Enabled
<input checked="" type="checkbox"/> GY Enable	<input type="checkbox"/> FYA 3-10 Enabled
<input type="checkbox"/> Special Funct #1 Invert	<input type="checkbox"/> FYA 5-11 Enabled
<input checked="" type="checkbox"/> LEDguard Thresholds	<input type="checkbox"/> FYA 7-12 Enabled

Monitor ID:  
 ID #   
 Name

Select Jumpers:

<input checked="" type="checkbox"/> SEL1, WDT Latch on PU	<input type="checkbox"/> SEL5, MC Coil (EE) Invert
<input checked="" type="checkbox"/> SEL2, Minimum Flash Enable	<input type="checkbox"/> SEL10, Dual Ind Timing Long
<input checked="" type="checkbox"/> SEL3, Config Fault Enable	<input type="checkbox"/> SEL11
<input type="checkbox"/> SEL4, Red Cable Fault Enable	<input type="checkbox"/> SEL12
<input checked="" type="checkbox"/> SEL5, 98/103 Vrms Brownout	<input type="checkbox"/> SEL13
<input type="checkbox"/> SEL6, Reserved	<input type="checkbox"/> SEL14
<input type="checkbox"/> SEL7, Frequency Tracking	<input type="checkbox"/> SEL15
<input type="checkbox"/> SEL8, 50 Hz	<input checked="" type="checkbox"/> SEL16

Watchdog Enable Switch  
 Enabled

Monitor Status - Monitor ID# 0

Current  
 9:53:04 AM  
 Thursday, September 22, 2016

Fault Status  
 No Fault

Channel Status and RMS Voltage

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
122	121	122	122	121	122	121	121	122	121	122	122	122	122	122	122
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
0	2	0	0	3	2	0	2	0	0	0	0	0	0	0	0
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
0	2	0	0	3	2	0	2	0	0	0	0	4	0	4	4

Current  
 AC Line    
 Temperature   
 Red Enable    
 MC Coil (EE)    
 Special Function #1

Chronological Event Log #5 (unsaved)

```
>> Chronological Event Log
>> Monitor ID #0 SR 10 @ I-285 SB
>> EDI Model 2010ECL, Firmware Type 01, Firmware U5.5, Conn U3.7
>> RMS-Engine Firmware Type 01, RMS-Engine Firmware U3.0
>> ECcom Version 3.8.3
>> Downloaded at 9:53:51 AM Thursday, September 22, 2016
>> Number of Configuration Change Events = 2
>> Number of Monitor Reset Events = 10
>> Number of AC Line Events = 6
>> Number of Previous Fail Events = 10
```

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MONITOR RESET EVENT #1 at:  
 10:14:31 AM Friday, March 04, 2016

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PREVIOUS FAIL EVENT #1 at:  
 10:14:30 AM Friday, March 04, 2016  
 Fault = Dual Indication Fault

Channel Status:

Ch:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	*															
	R	R	R	R	R	.	R	R	R	R	R	R	R	R	R	R

IP Address = 143.100.179.17 | IP Port = 10001

AXIS Camera Management Client

File Configuration Options Help

**New firmware version exists for a device**

23 devices, 1 selected

MAC Address	Status	Address	Host Name	Model	Firmware	DHCP	Server
ACCC8E496A08	OK	143.100.180.117		AXIS Q6045-E Mk II	5.70.1.5	No	TMCTO3218311
ACCC8E496416	OK	143.100.180.119		AXIS Q6045-E Mk II	5.70.1.5	No	TMCTO3218311
ACCC8E496465	OK	143.100.180.113		AXIS Q6045-E Mk II	5.70.1.5	No	TMCTO3218311
ACCC8E496A11	OK	143.100.180.114		AXIS Q6045-E Mk II	5.70.1.5	No	TMCTO3218311
ACCC8E496A19	OK	143.100.180.118		AXIS Q6045-E Mk II	5.70.1.5	No	TMCTO3218311
ACCC8E496450	OK	143.100.215.187		AXIS Q6045-E Mk II	5.70.1.5	No	TMCTO3218311
ACCC8E49645F	OK	143.100.215.118		AXIS Q6045-E Mk II	5.70.1.5	No	TMCTO3218311
ACCC8E496A20	OK	143.100.215.119		AXIS Q6045-E Mk II	5.70.1.5	No	TMCTO3218311
ACCC8E496454	OK	143.100.181.53		AXIS Q6045-E Mk II	5.70.1.5	No	TMCTO3218311
ACCC8E49644F	OK	143.100.181.57		AXIS Q6045-E Mk II	5.70.1.5	No	TMCTO3218311
ACCC8E496A28	OK	143.100.181.54		AXIS Q6045-E Mk II	5.70.1.5	No	TMCTO3218311
ACCC8E496410	OK	143.100.214.132		AXIS Q6045-E Mk II	5.70.1.5	No	TMCTO3218311

Alarms **1** Tasks

Time	Alarm	Description
9/22/2016 9:30:08 AM	System alarm	Lost connection to device ACCC8E0FC92F (10.201.3.207)

rtsp://143.100.180.117/axis-media/media.amp?streamprofile=VSS - VLC media player

Media Playback Audio Video Subtitle Tools View Help

ATL-CAM-079 SR 3 at Manford Rd

01:25 100% 00:00

Live view - AXIS Q6045- | x

143.100.180.117/view/viewer\_index.shtml?id=17

AXIS Q6045-E Mk II Network Camera

View size Stream profile Recordset tours PTZ preset

Motion JPEG

ATL-CAM-079 SR 3 at Manford Rd

511 Travel Info Video courtesy of GDOT

Video PTZ

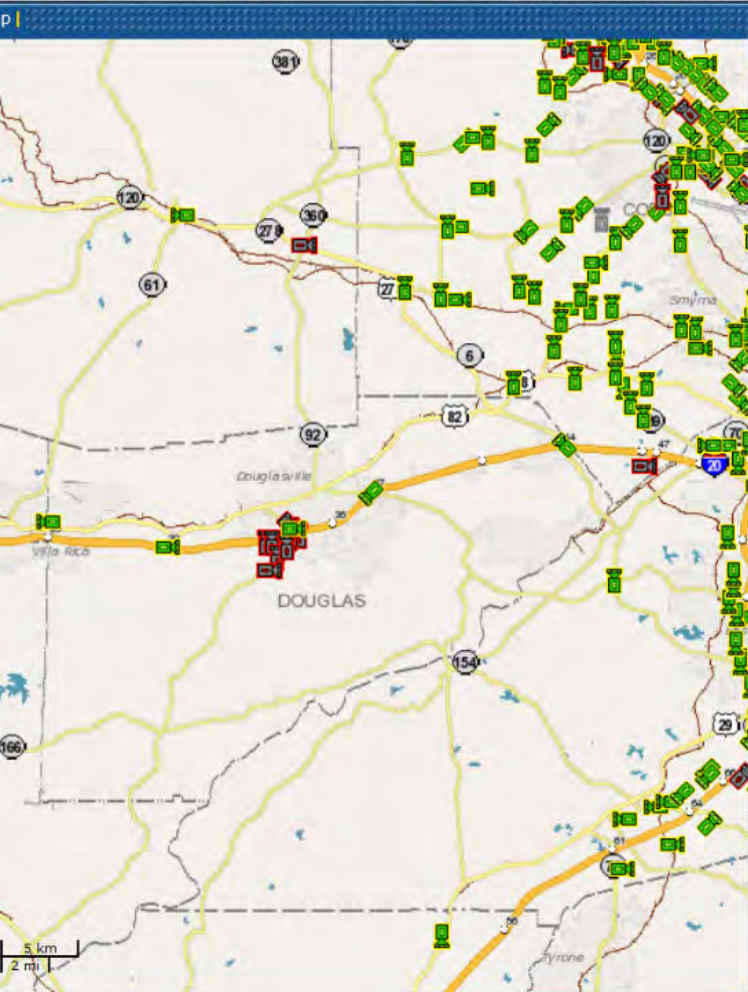
PAN Left Right Home

ZOOM Wide Tele Ctrl panel

FOCUS Near Far

IRIS Close Open Auto

BRIGHTNESS



Viewer

CCTV ID# GDOT-CAM-283

Lock Locked By:  
PTZ By c0004093, 15 hours ago

GDOT-CAM-283  
I-285 N AT COVNGTN HWY RAMP METER

511  
Travel Info  
Video courtesy of GDOT

Status: OK I-285 at COVINGTON VLC

50

Auto Auto  
+ + +  
- - -  
Zoom Fit Fit

Video Size

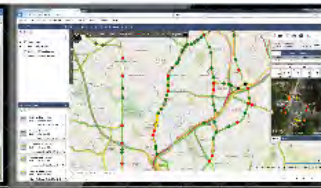
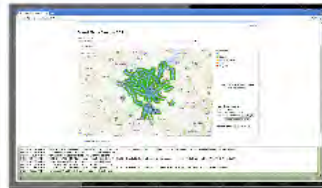
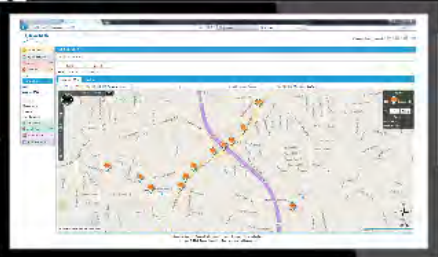
Open Presets  
Open Tours

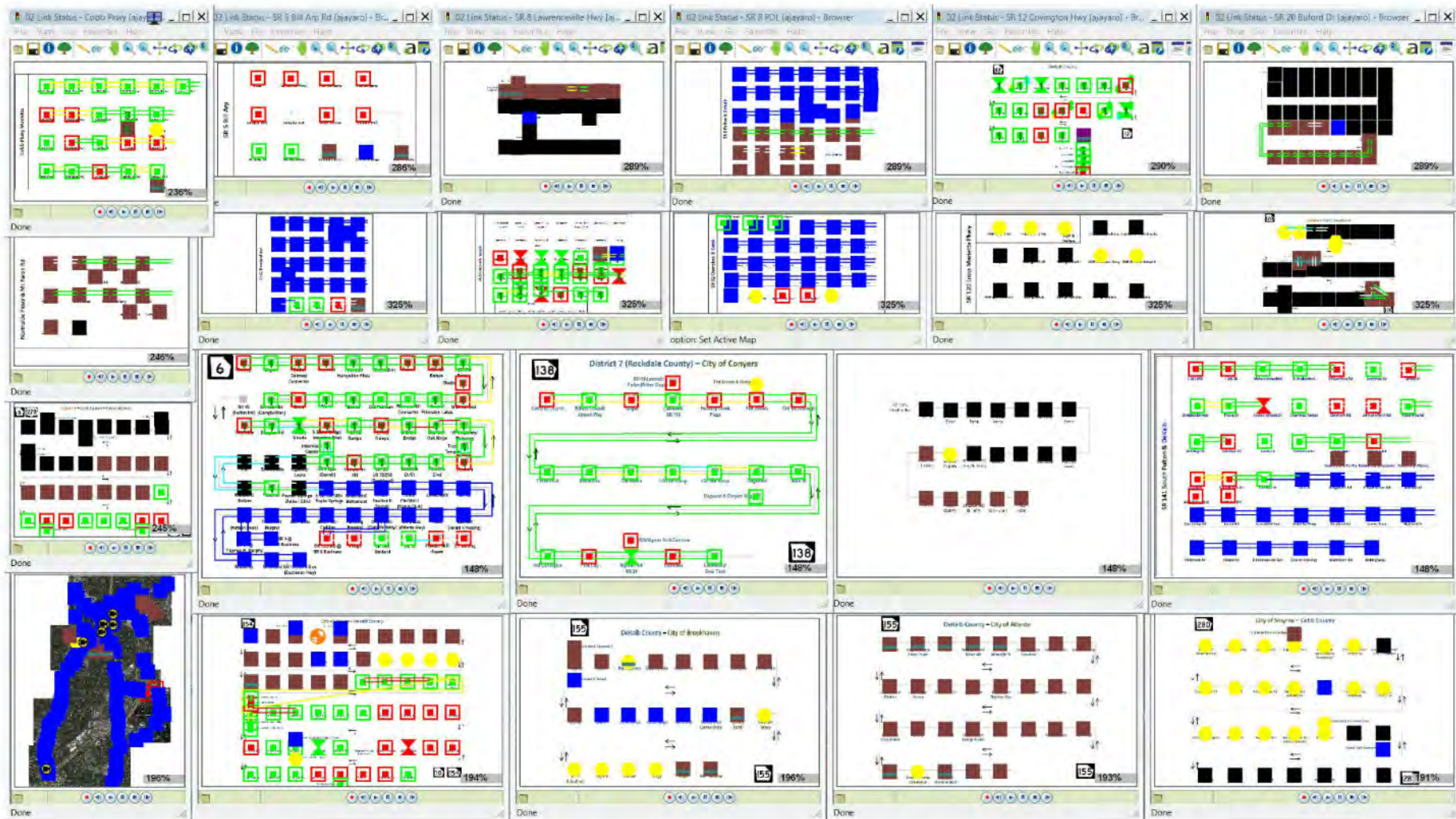
GDOT-CAM-283: I-285 n at COVINGTON HWY RA

Select a Tour





A monitor displaying a data table. The table contains multiple columns and rows of text, likely representing a list of items or data points, such as a schedule or inventory list.



- Bookmarks
- My Workspace
- ADTs
- Location
- Find
- Find via Map
- Add
- Add via Map
- General
- Documents
- Inventory
- Maintenance
- Reporting
- Analytics
- Warehousing
- Administration

Find a Location

Search Criteria

Reset Search

Search Results (12 Rows)

Locations Map Locations

GA United States | View: Default

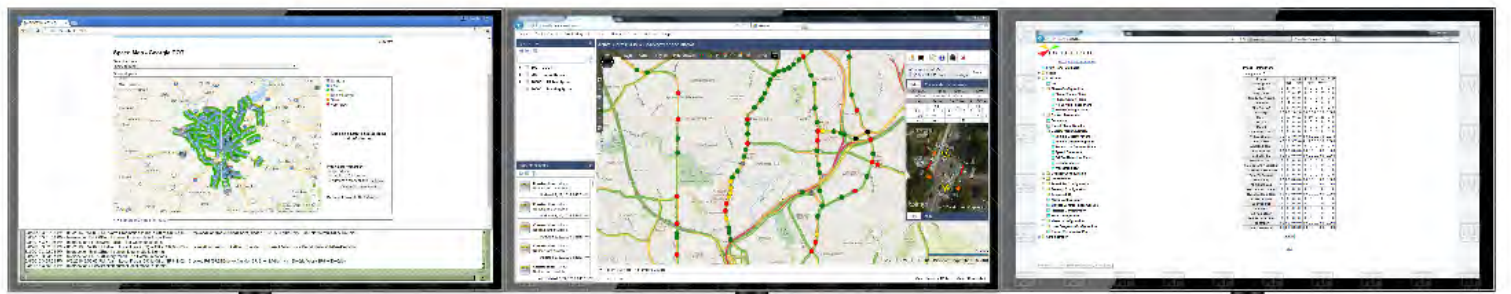
Legend: Location (12)

Show: All None

Center: Lat: 33.7765, Long: -84.2399

2500 Feet

Report a problem with the map.

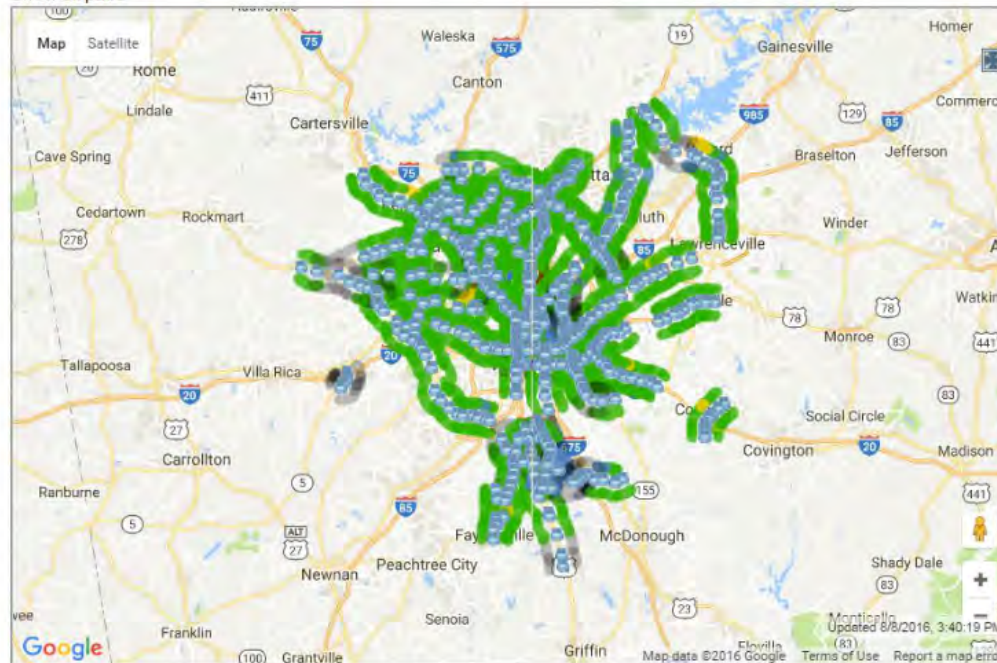


## Speed Map - Georgia DOT

Select a route:

Show all pairs

Show all pairs



- No data
- Fast
- Normal
- Below Normal
- Slow
- Very Slow

Click on a path to see detailed pair information

Index determined by

- speed limit
- avg last 12 Mondays
- custom historical avg

Refresh Interval:

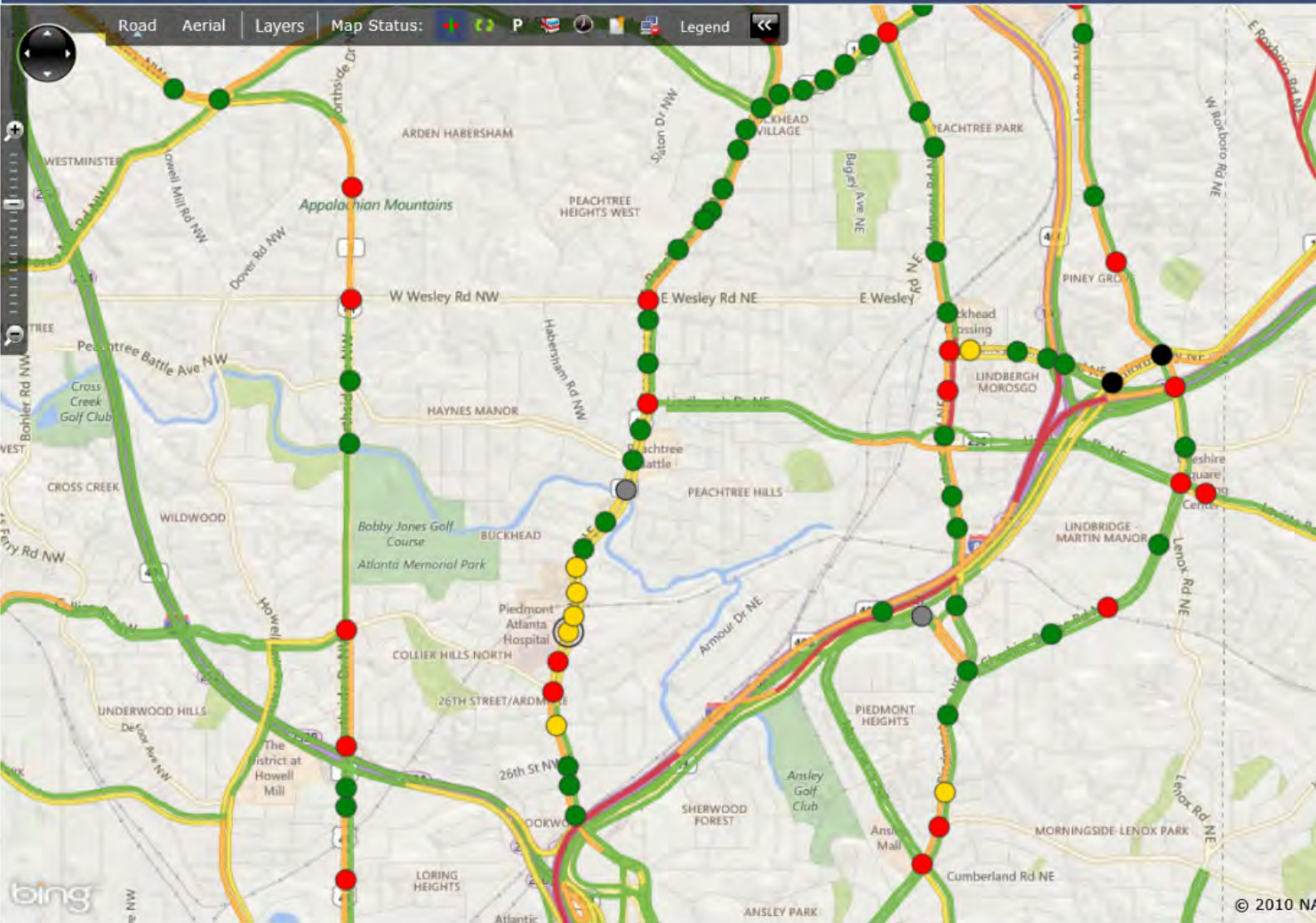
[Standalone map information](#)

16 3:51:03 PM - 8/8/2016 3:51:03 PM -Alarm Preemption (110) is Off at SR 8 & 03 - Brockett&Bancroft (Brckt&Bncrft) under SR 8 -A- L'Ville Hwy - DeKalb West(SR8-A-DeKalb)  
16 3:51:03 PM - Intersection Brckt&Bncrft current local mode is Local Free  
16 3:51:06 PM - Intersection FtShls&Prkr failed - No Communications  
16 3:52:02 PM - 8/8/2016 3:52:02 PM -Alarm Local Free (109) is Off at SR 8 & 03 - Brockett&Bancroft (Brckt&Bncrft) under SR 8 -A- L'Ville Hwy - DeKalb West(SR8-A-DeKalb)  
16 3:52:03 PM - Intersection Brckt&Bncrft current local mode is Normal  
16 3:54:07 PM - Intersection SR155&Emory failed - No Communications  
16 3:55:03 PM - 8/8/2016 3:55:03 PM -Alarm Local Free (109) is Off at SR 8 & 02 - Brockett Rd (SR8&Brockett) under SR 8 -A- L'Ville Hwy - DeKalb West(SR8-A-DeKalb)  
16 3:55:03 PM - Intersection SR8&Brockett current local mode is Normal

Devices

- 00 - GDOT
- 00 - Ramp Meters
- 0000 - TR Test System
- 0000 - Training System

Active Alarms: 4 new unacknowledged alarms.



Intersection Controller  
7104 - SR 9 @ Brookwood Valley

Status	Commands	Comments					
Last Cyc.	Mode	Status					
140/140	Pattern 37	Coord					
Local	Master	Set Offset					
1	54	53					
Split:	1	2	3	4	5	6	7
Set:	20	90	-	30	-	110	-
Last:	-	65	-	-	-	65	-



& Traffic

- Construction - Minor**  
No lane info available.  
Updated: 9/22/2016 3:48:33 PM
- Construction - Minor**  
No lane info available.  
Updated: 9/22/2016 3:48:33 PM
- Construction - Minor**  
No lane info available.  
Updated: 9/22/2016 3:48:33 PM
- Construction - Minor**  
No lane info available.  
Updated: 9/22/2016 3:48:33 PM
- Construction - Minor**  
No lane info available.  
Updated: 9/22/2016 3:48:51 PM

- Favorite Devices - No Favorite Devices
- Server Log



[Home](#) [Print](#) [Manual](#) [Mobile](#)

- Front Panel Emulator
- Status
- Controller
  - Unit
  - Phase Configuration
    - Phase Timing Plans
    - Phase Option Plans
    - No Served Phase Plans
    - Phase Configuration
  - Backup Prevention
    - Sequence
    - Global Phase Recalls
  - Detector Configuration
    - Vehicle Detector Plans
    - Vehicle Detector Options
    - Pedestrian Detector Plans
    - Speed Detectors
    - Pri/Pre Detectors Plan
    - Detector Zones
    - Wavetronix HD
  - Overlap Configuration
  - Coordination
  - Scheduler Configuration
  - Preempt Configuration
  - Advanced IO
    - Alarm Configuration
    - Manual Control Phase Groups
    - Prioritor Configuration
    - Peer Configuration
  - Master Configuration
  - User Programs Configuration
    - Queue Responsive Plans
  - Administration

### Phase Timing Plans

Timing Plan: 1

Phase	1	2	3	4	5	6	7	8	9	10
Description	SBT	EBT	NBT	WBT						
Walk	0	5	0	5	0	0	0	5	0	0
Ped Clear	0	10	0	25	0	0	0	25	0	0
Steady Don't Walk	0	0	0	0	0	0	0	0	0	0
Min Green	0	12	0	6	0	12	0	6	1	1
Min Green2	0	0	0	0	0	0	0	0	0	0
Passage	2.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0
Max 1	0	50	0	20	0	50	0	25	0	0
Max 2	0	0	0	0	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0
Conditional Max	0	0	0	0	0	0	0	0	0	0
Yellow Change	3.0	4.0	3.0	3.0	3.0	4.0	3.0	3.0	3.0	3.0
Red Clear	4.0	2.0	3.7	3.0	4.1	2.0	3.5	3.0	0.0	0.0
Add Red Clear	0	0	0	0	0	0	0	0	0	0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum Initial	0	0	0	0	0	0	0	0	0	0
Time Before Reduction	0	0	0	0	0	0	0	0	0	0
Cars Before Reduction	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0
Reduce By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	0	0	0	0	0	0	0	0	0	0
Dynamic Max Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Advance Walk	0	0	0	0	0	0	0	0	0	0
Delayed Ped	0	0	0	0	0	0	0	0	0	0
Alt Walk	0	0	0	0	0	0	0	0	0	0
Alt Ped Clear	0	0	0	0	0	0	0	0	0	0
Ped Service Limit	0	0	0	0	0	0	0	0	0	0
Pre Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pre Clearance	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Apply

Next

# WHAT DOES THE FUTURE HOLD FOR RTOP?

- Performance Measures
- Challenge Specifications
- Continue to Test and Deploy Emerging Technologies
- Shift in the Dark Side?
- Advancing Communication Systems

"NOTHING WILL STAND IN OUR WAY.  
I WILL FINISH WHAT YOU STARTED"

— KYLO REN





# RTOP

