Technology provider
&
Integrator

Intelligent Imaging Systems
Brian Heath, CEO
June 2015

PIAF

Novo Paradigmo

Performance-based Contracting

Novo Paradigmo

RISK

Performance-based contracting

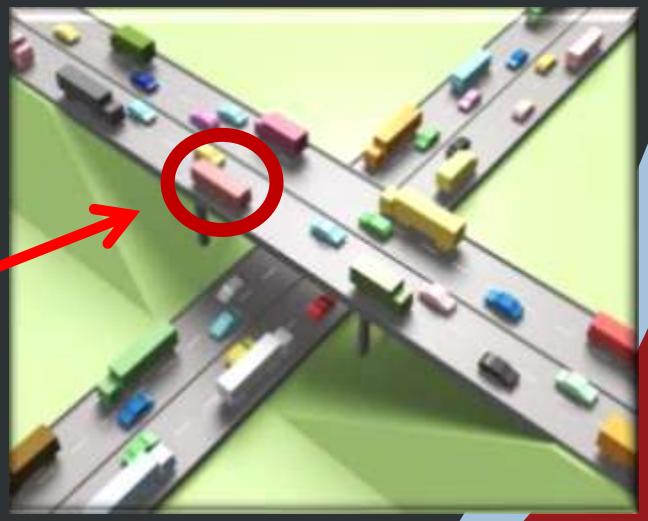
Introduction

- Dedicated and focused on the Commercial Vehicle enforcement market
- Since 2003, innovating technology to solve commercial vehicle safety & compliance
- Market leading sensors and integration software for CVE
- Headquartered in Canada, operations throughout Canada and USA.
- 75 employees with dedicated teams in system engineering, Research & Development, software development & project management

Expertise

The technologies supporting Smart Roadside performance start with our team.

How do you use technology to identify this high risk truck?

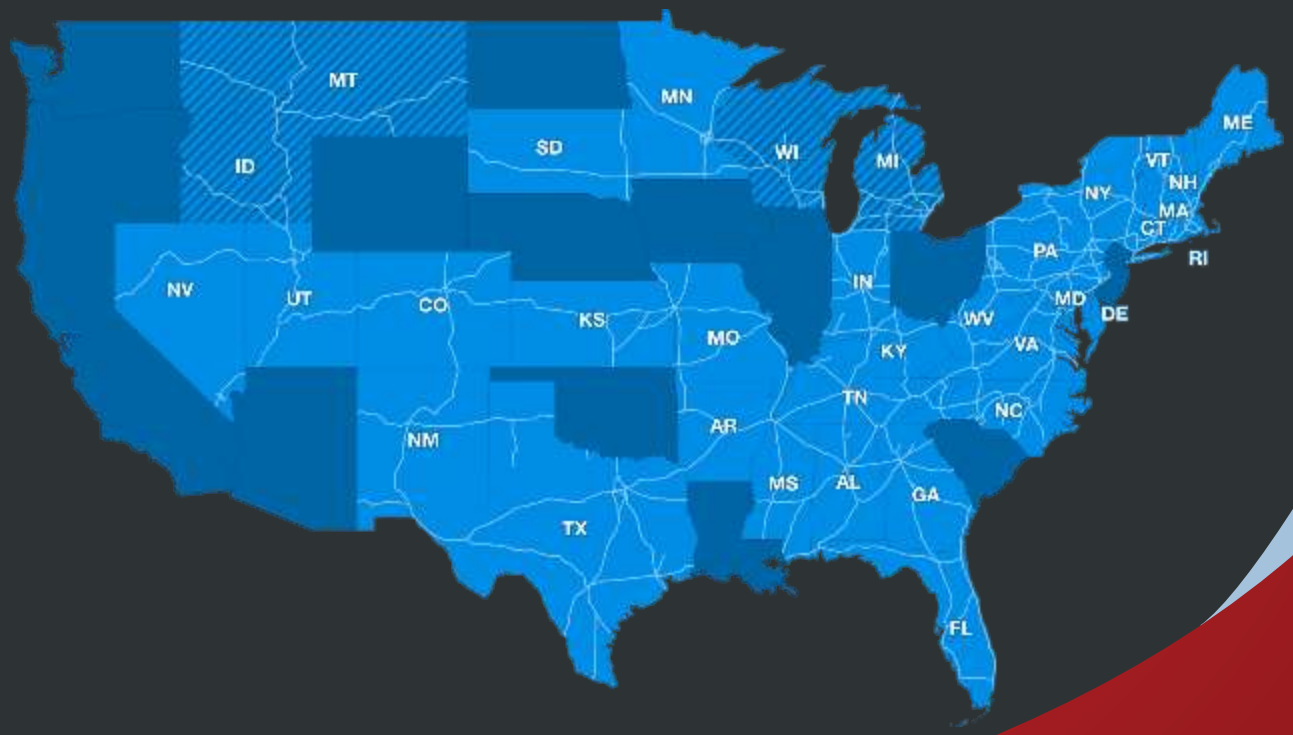


Sensor and Imaging Engineers + Systems Integration Engineers + IT, Data and Software Engineers + Field Installation Specialists

We bring together a world-class technical team to provide real CVO solutions.

Deployment footprint

- 35 states (70% of US) , 5 provinces (50% of Canada)
- 585 sites



Weigh Station Expertise

Sensors and Inputs

- **Deployed Technologies (IIS)**
  - Overview Cameras (OVC)
  - Automated License Plate Readers (ALPR)
  - Automated USDOT Readers (AUR)
  - Automated Safety Sticker Reader
  - Automated HazMat Placard Readers
  - Vehicle Waveform Identification (VWI) sensors
  - Lane Control Signal and Direction
  - Thermal Imaging Brake Inspection
  - Weigh station control systems
  - Weigh station pre-screening systems
- **Deployed Technologies (Third Party)**
  - WIM Systems (All Vendors)
  - Static Scale Systems (Most Vendors)
  - DSRC Systems (both conventional 915MHz and 5.9 GHz systems)

IIS Overview Cameras

Night

Day

Market leading image quality for visual truck identification
Good images speak for themselves

Automatic License Plate Recognition

- ***Market Leading Performance***
- Next generation camera systems include:
  - High-definition resolution
  - **Customize optics for CMV plates**
  - **Customize OCR engines for CMV plates**
  - Utilize color / infrared sensor technology
  - Mainline speed performance

ALPR Cameras

Commercial Vehicle Specialization

Customized optics

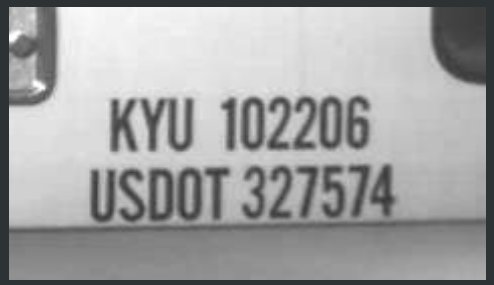
Customized illumination

Customized OCR

Automatic USDOT Number Recognition (AUNR)

- Automatically identify USDOT #s of passing CMVs
- Next generation camera systems include:
  - High-definition resolution
  - Driver-safe lighting systems
  - Dynamic imaging controls for 24/7 operation
  - **Hi-speed capture up to highway speed**
  - **Market Leading Performance**

IIS USDOT & ANTT Cameras



ALPR Only Performance

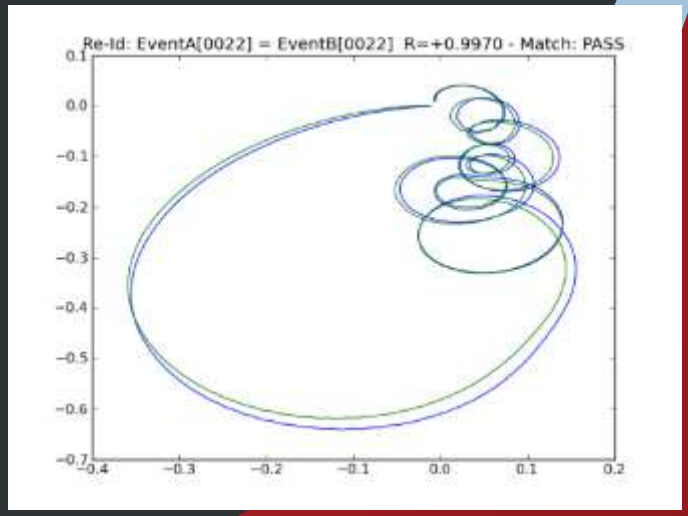
Typical ALPR Accuracy as Stand Alone *Sub-System*	**80-90%**
ALPR Accuracy at Ramp Speed (5-55mph)	85-90%
ALPR Accuracy at High Speed (55-75mph)	80-85%
Systems must be designed for their environments	

ALPR + USDOT+ Database

Accuracy of Identifying a Specific Truck using database cross reference and true validation algorithm	***94-98%***
Combined Accuracy at Ramp Speed (5-55mph)	96-98%
Combined Accuracy at High Speed (55-75mph)	94-96%

Vehicle Waveform Identification (VWI)

- Patent-pending advanced vehicle identification, matching and tracking sensor system
- In-road sensors uniquely identify specific vehicles based on an electronic vehicle signature
- Provides the ability to track and verify vehicle movement within a weigh/inspection station

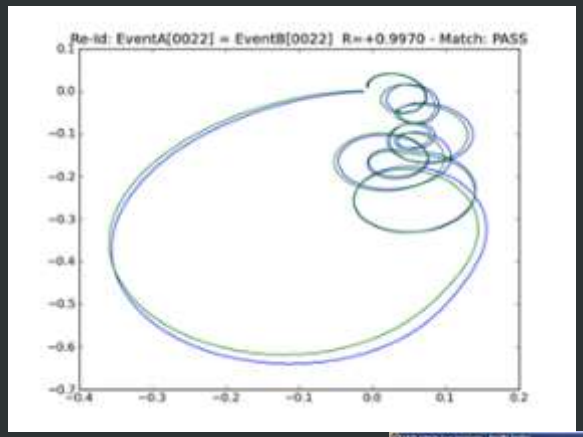


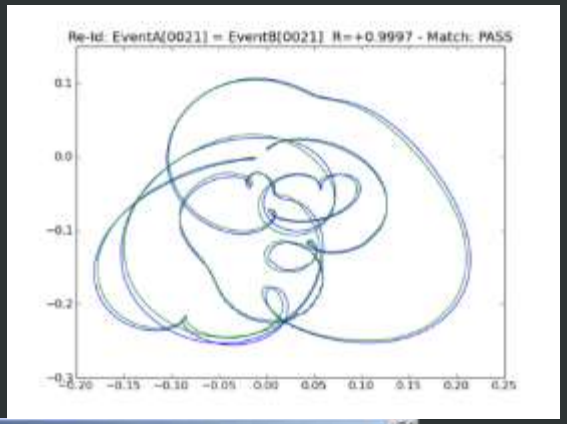
Sensor installed between wheel paths for simple installation and long life

Vehicle Waveform Identification (VWI)

High Accuracy Tracking

Absolute and unique matching of specific vehicles based on magnetic fingerprint





Vehicle Waveform Identification (VWI)

VWI Unique advantages

Performance matching unaffected by:

- **Rain, Fog or inclement weather**
- **Congestion**
- **Occlusion**
- **Time**

Total cost of Ownership advantages

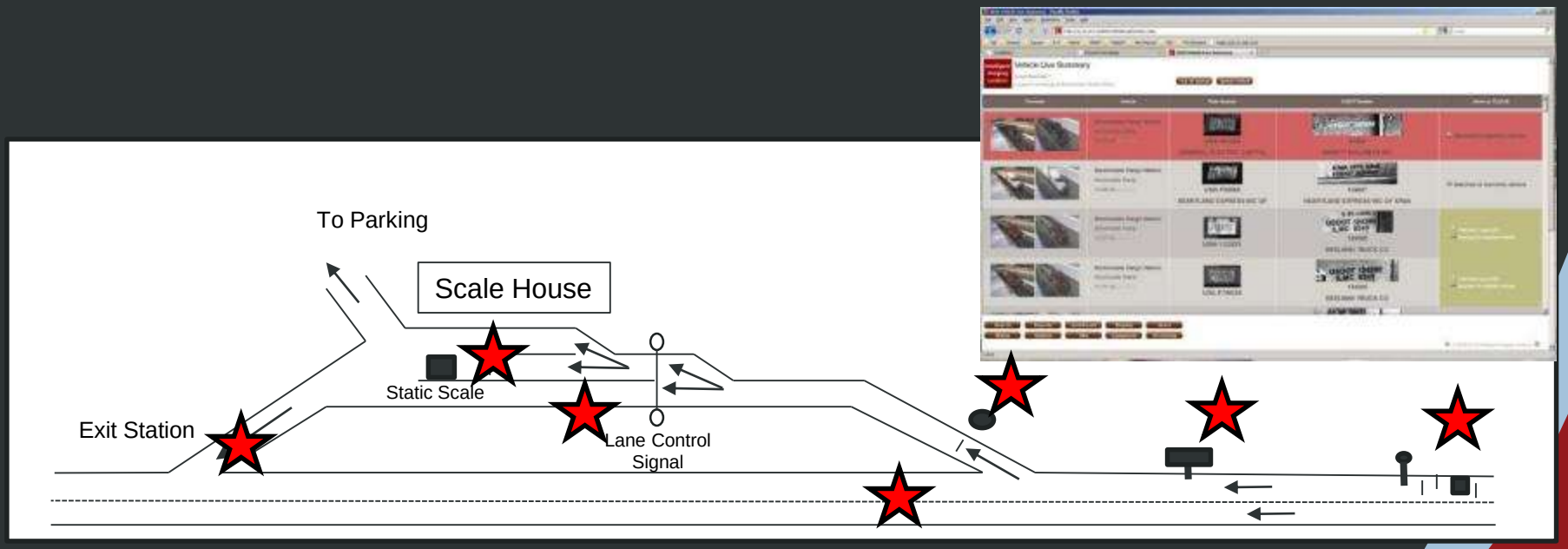
- **No re-calibrations required.**
- **No lens cleaning**
- **No camera repositioning**
- **Not easily vandalized, tampered with**

98% accuracy

Vehicle Waveform Identification (VWI)

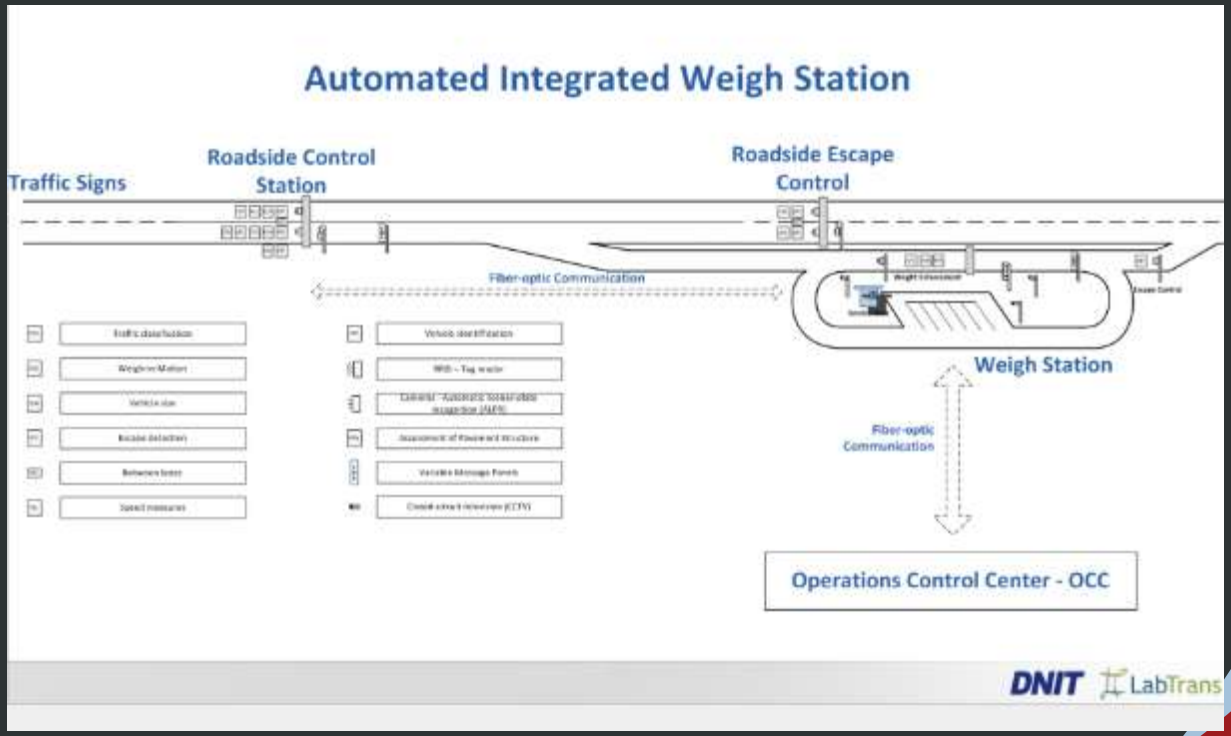
Automated Sign Control/Sign Over-Rides
Mainline or Ramp

Vehicle Waveform Identification (VWI)



- **Ideal for**
  - Mainline to Mainline & Mainline to Ramp matching, tracking and verification
  - In-station tracking and verification
  - Ability to accurately correlate and match WIM to VMS for mainline sorting.
  - Ability to accurately correlate and match WIM to Static scale measurements for auto-calibration and verification

PIAF is more than a sensor



Smart Roadside Inspection System

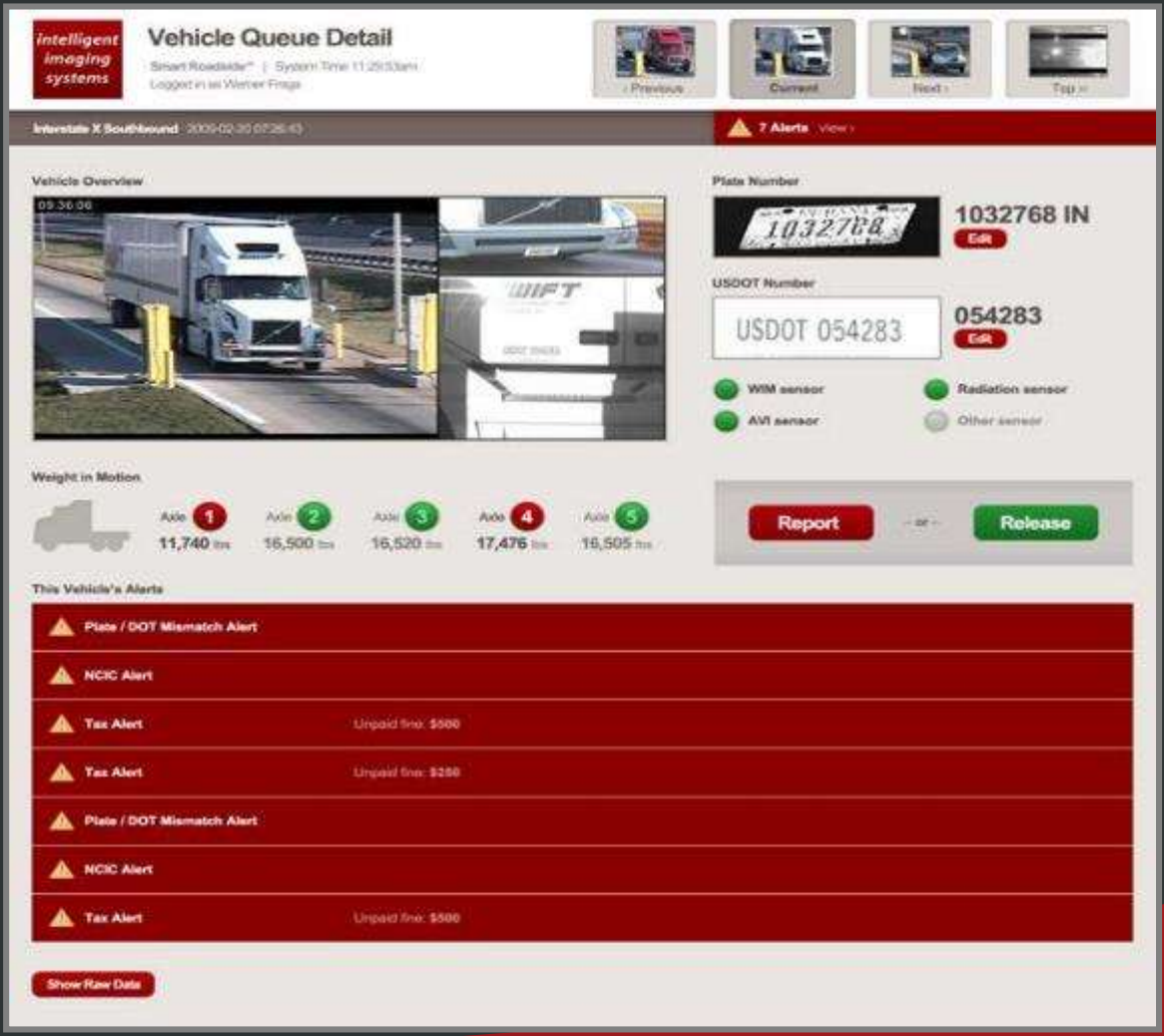
- Goals and objectives
  - Screen truck traffic and identify those with the most serious issues.
  - Efficiently and productively use your limited staff to focus on high risk trucks.
  - Leverage your existing infrastructure and roadside equipment.
  - Accommodate future truck traffic increases using a technical approach, not more bricks and mortar.

Smart Roadside Inspection System Platform

- **Modular Software Platform for Screening at Weigh/Inspection Stations;**
  - **Accepts** hardware **inputs** for all weighing, measuring, identification of truck, and identification of truck features
  - **Incorporates** interfaces to a variety of Commercial Vehicle **Data** sources
  - **Applies** a set of agency defined screening **rules** to the sensor inputs, against the data sources
  - **Generates alarms** based on these rules
  - **Directs** truck **traffic** according to the alarms generated
  - **Tracks and confirms** vehicle movement to the direction

Smart Roadside Inspection System

Electronic Screening Software

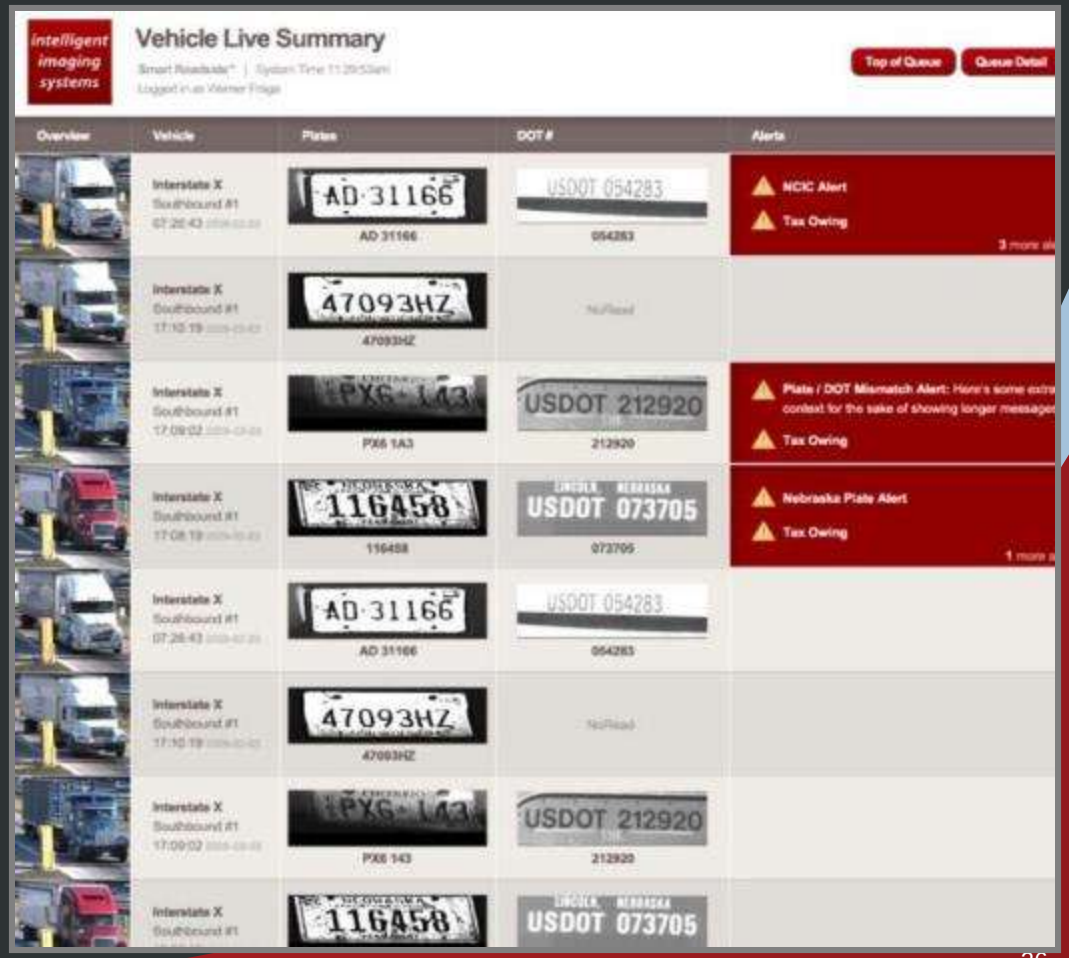


- **The most advanced & flexible electronic screening platform for commercial trucks**
- **Deployed at over 500 weigh stations**
- **On premise and cloud-based solutions**
- **Hardware neutral, over 40 off-the-shelf sensor integrations**
- **Customizable language, interface**

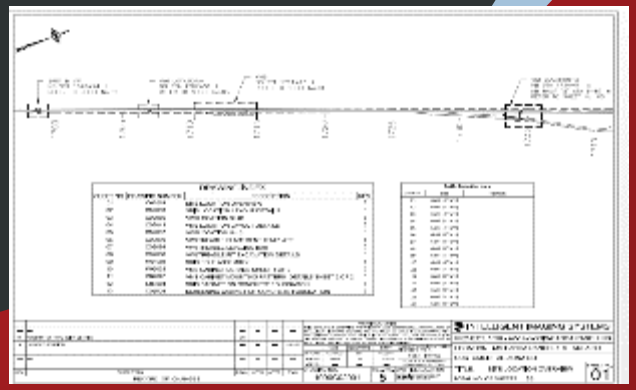
Smart Roadside Inspection System

Electronic Screening Software

- **Provides automated alerts to roadside inspectors**
- **Includes user-definable screening / filtering rules**
- **Allows both live/historical monitoring**
- **Provides modular site by site configuration to accommodate existing infrastructure**



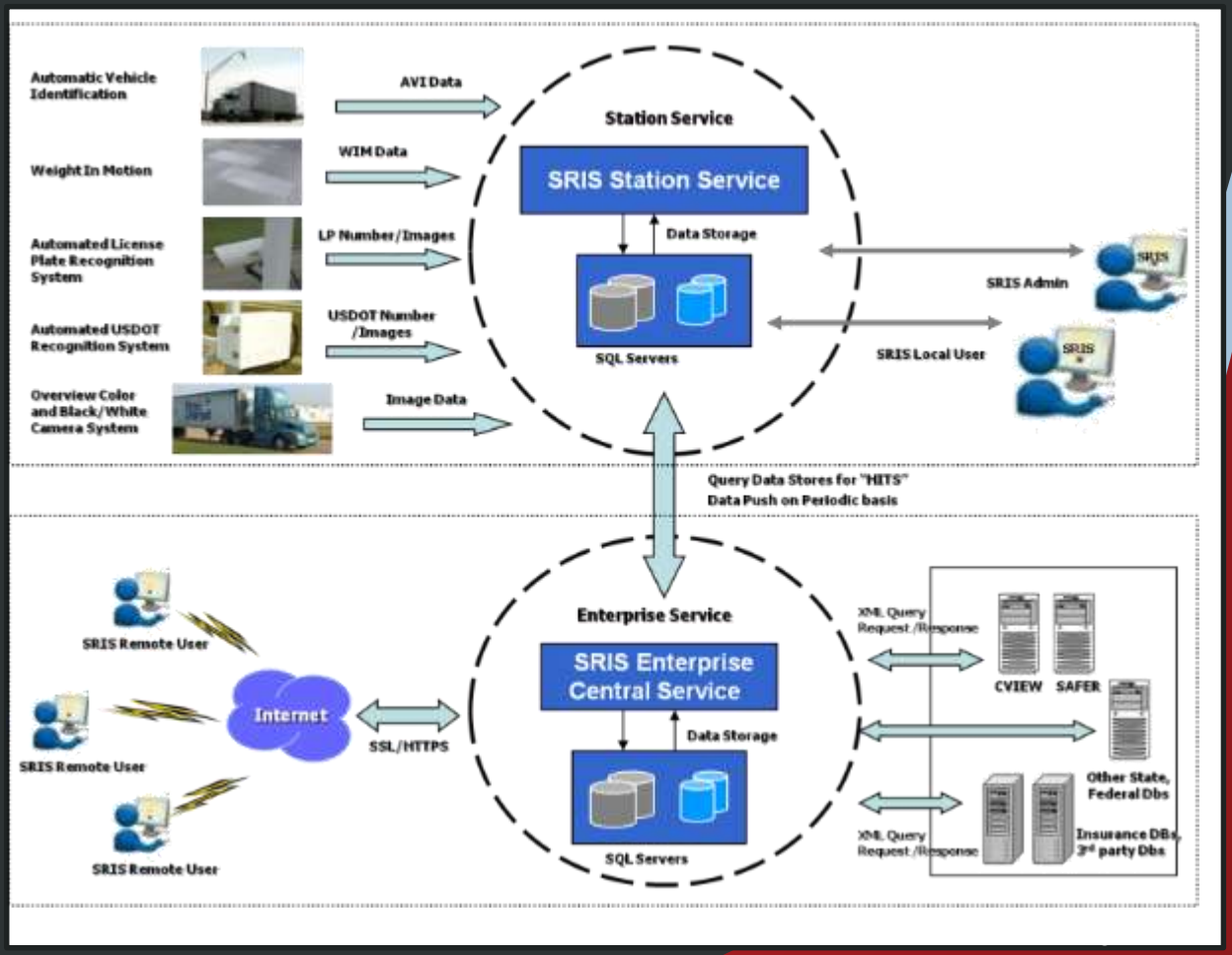
Smart Roadside Inspection System



Canoa Ranch, Arizona

Enterprise Software

- Ties roadside data to back-end information networks
- Integrates to operations software
- Automatically identifies unsafe vehicles for advanced roadside screening
- Designed with flexible / extensible architecture
- Allows both local/ remote access
- Provides a cohesive, centrally managed enforcement program

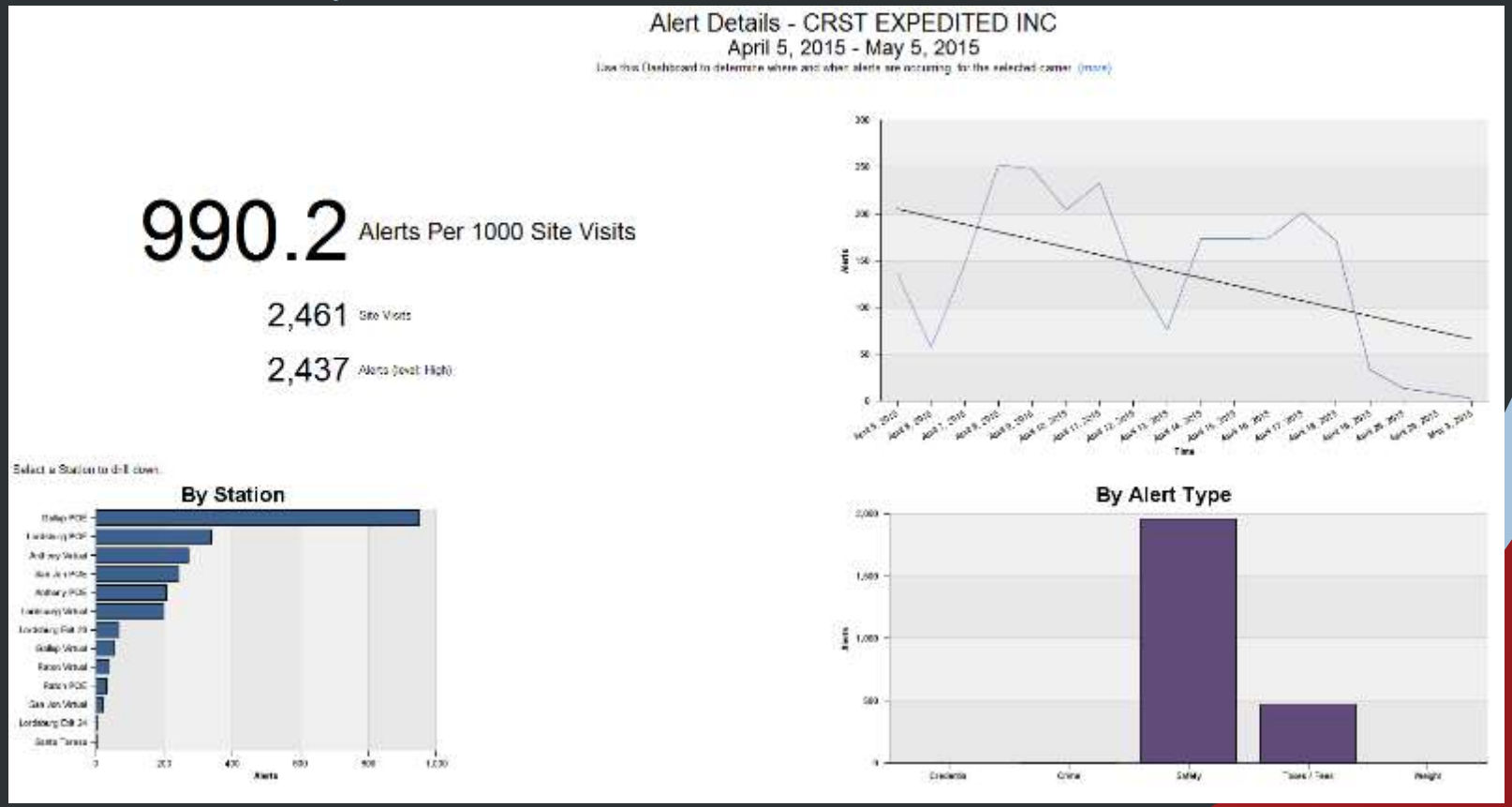


Smart Roadside Inspection System

REPORTING

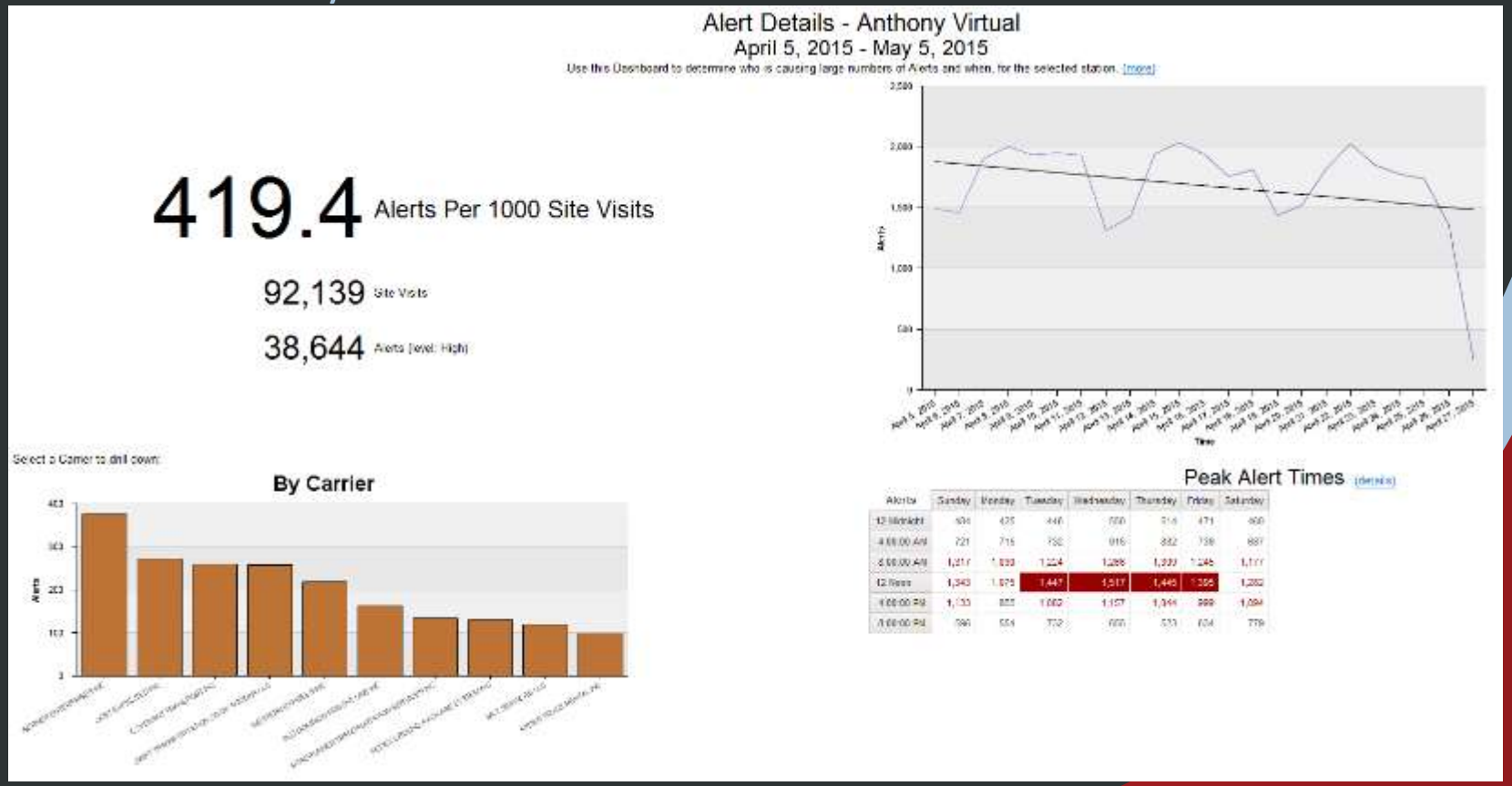
SRIS Dashboards

- Alerts – by carrier



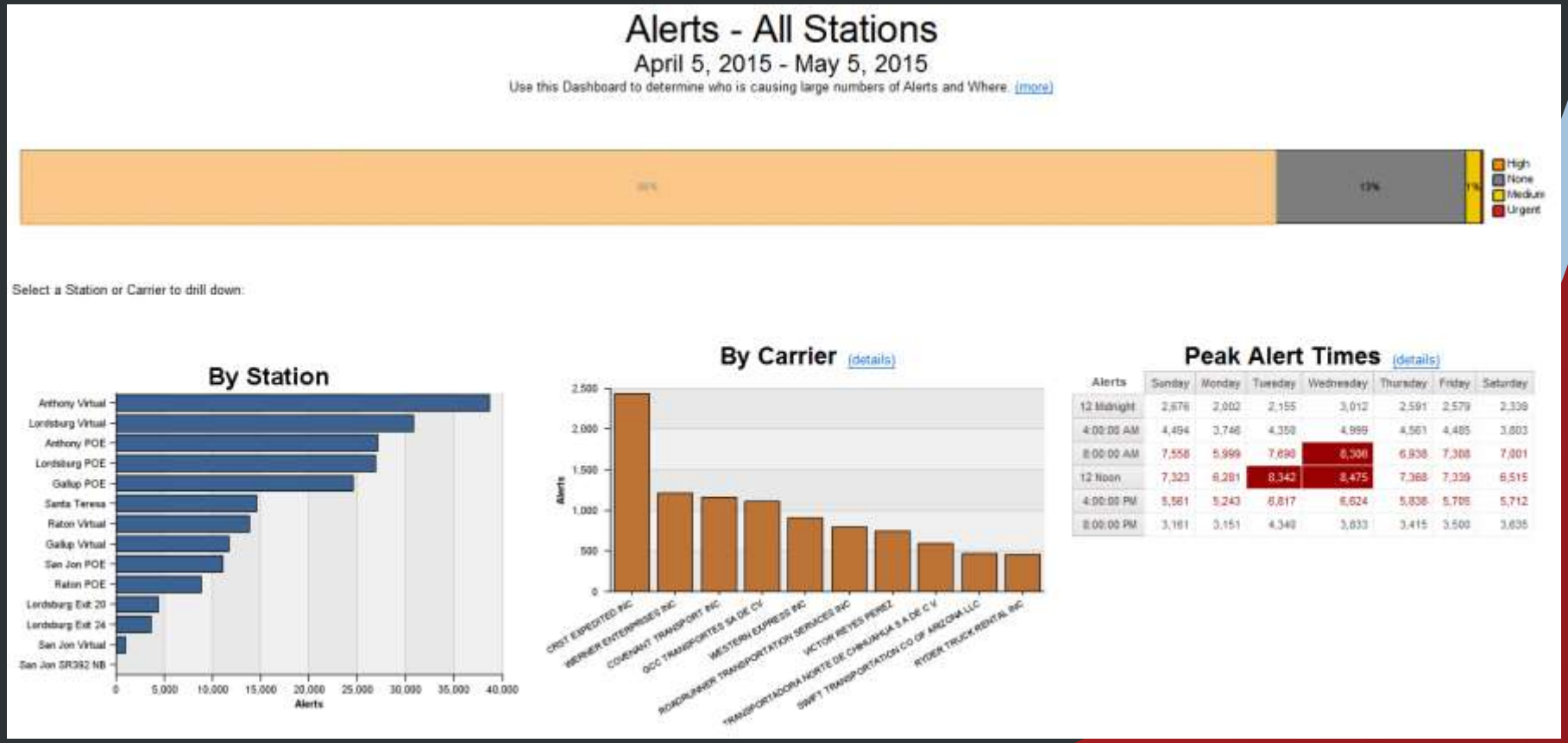
SRIS Dashboards

- Alerts – by station



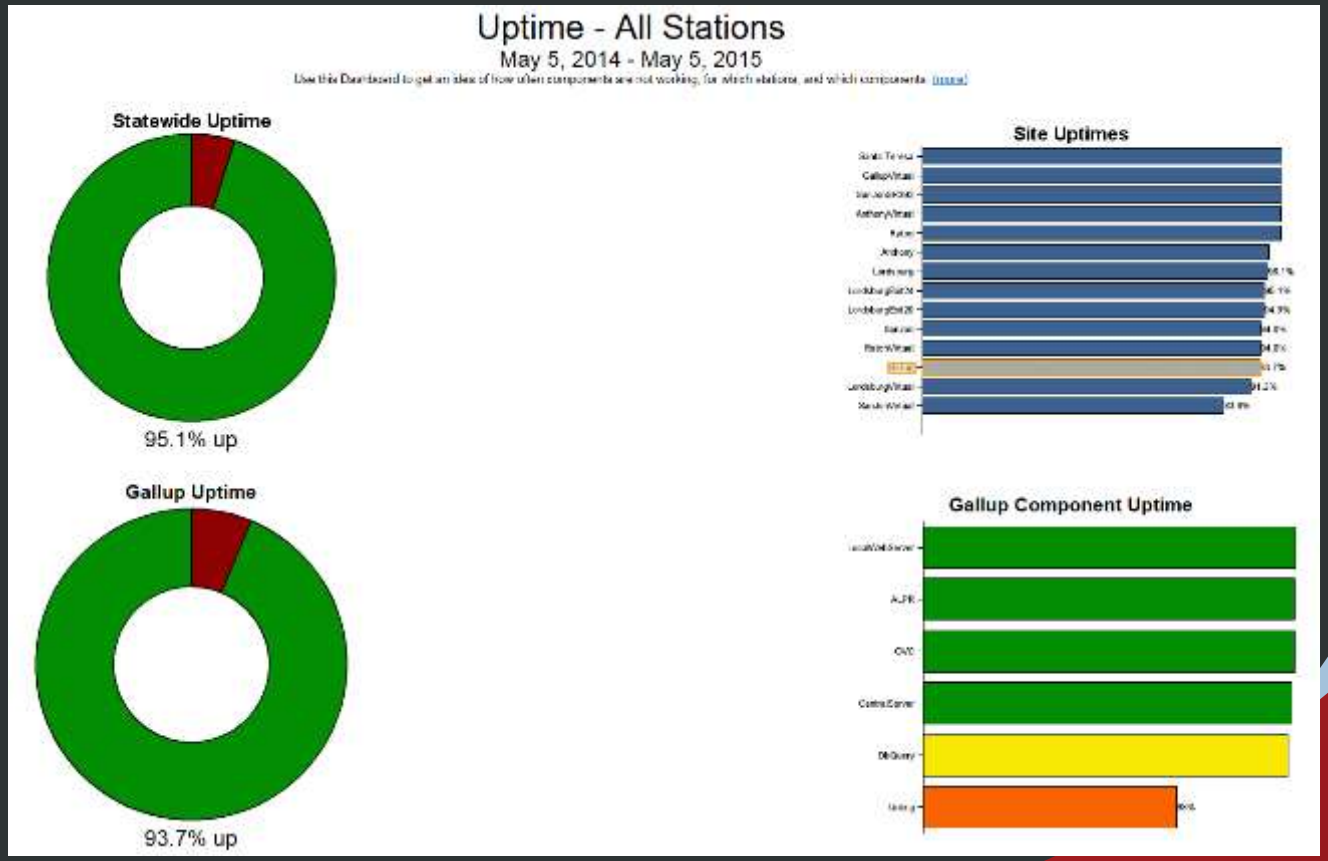
SRIS Dashboards

- Alerts



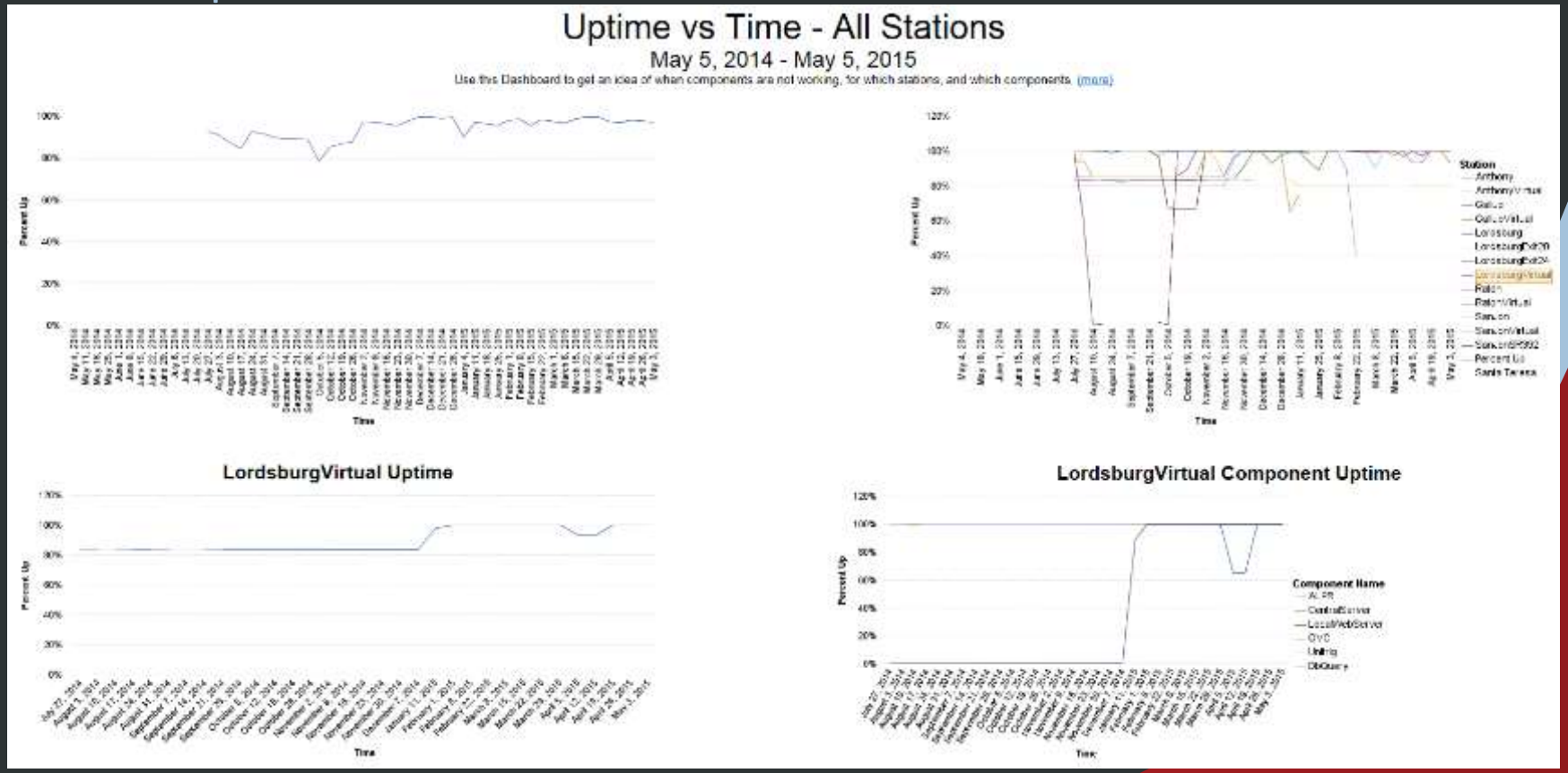
SRIS Dashboards

- Uptime



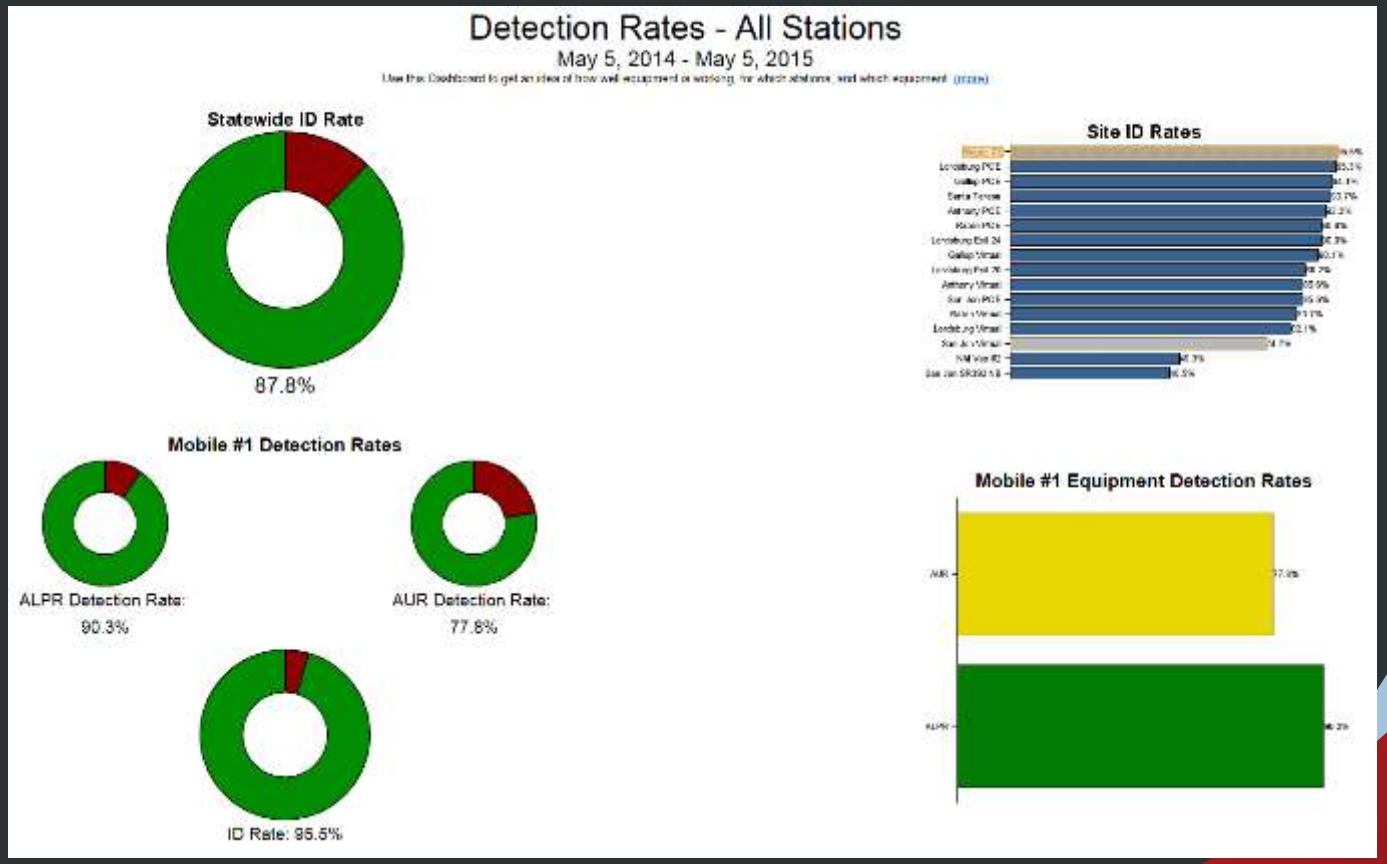
SRIS Dashboards

- Uptime - Trend



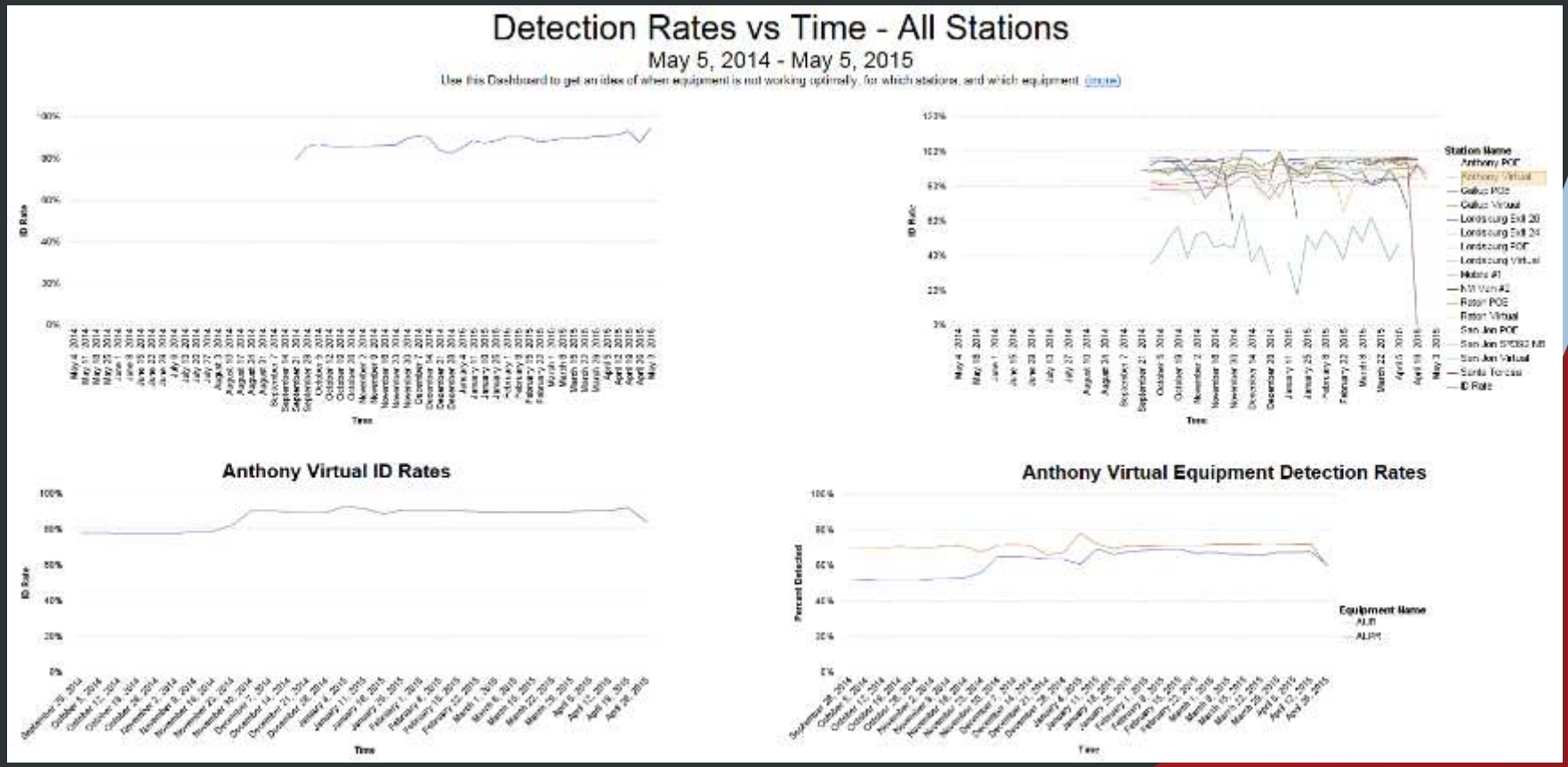
SRIS Dashboards

- Detection Rates



SRIS Dashboards

- Detection Rates - Trend



SRIS Dashboards

- Business

Commercial-off-the-Shelf

- VWI & Smart Roadside
- Fully developed
- Deployed and working solutions
- Commercial –off-the-shelf

Reduce RISK

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