

The National Academies Transportation Research Board  
(TRB) - EMS Transport Safety ANB10(5)

Welcome to the




**EMS**

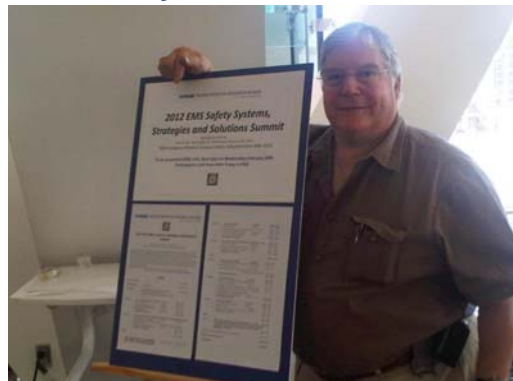
**Fleet Management Tools Seminar**  
today's event - #EMSFleet

Wednesday March 6<sup>th</sup> 1-3pm USA EST, 2013  
Simulcast from EMS Today & the Keck Center

Nadine Levick, MD MPH  
Chair Emergency Medical Services Subcommittee ANB10 (5), TRB  
CEO, Research Director, EMS Safety Foundation  
Eileen Frazer RN  
Co-Chair ANB10(5) TRB  
Executive Director of Commission on Accreditation of Medical Transport Systems (CAMTS)

 TRANSPORTATION RESEARCH BOARD  
OF THE NATIONAL ACADEMIES

## Thank you AJ and JEMS!!



ARD  
REVIEWES

## Welcome to those joining us at EMS Today



D  
REVIEWES

## This afternoon's Webinar

- Will cover:
  - An overview of the TRB ad ANB10(5)
  - A review of ANB10(5) EMS Fleet activities
  - Fleet Management Tools update
  - Introductory presentation by Nancy Bendickson, AON
  - Operational presentations:
    - Bruce Farr
    - Charlene Cobb

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## A lot is now possible and for less!

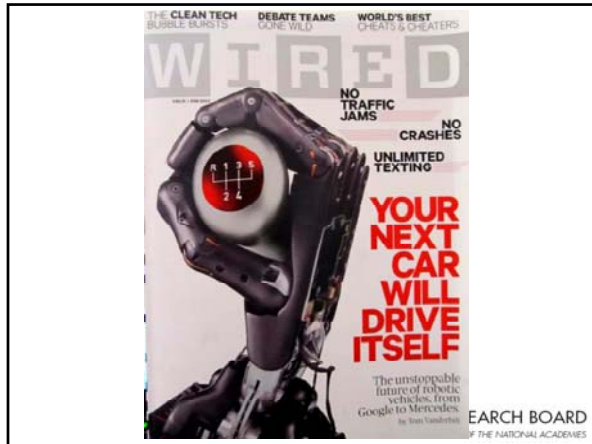
- Driver behavior
- Vehicle behavior
- Roadside ITS
- Fuel consumption/Economics
- Resource modeling

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## How?

- Deployment technology tools
- Invehicle telematics
- Smartphone telematics

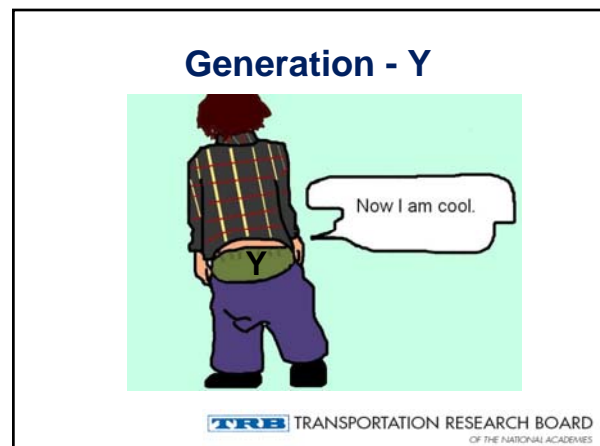
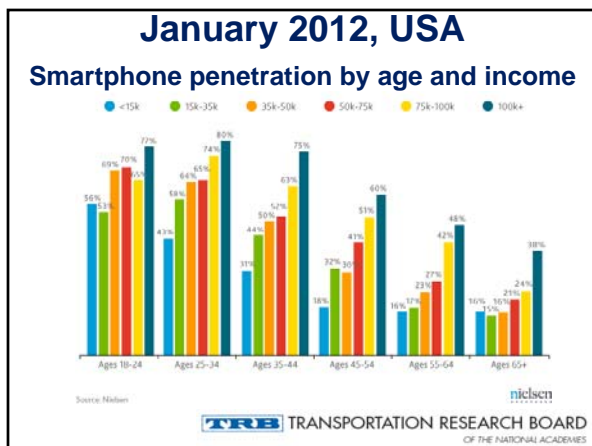
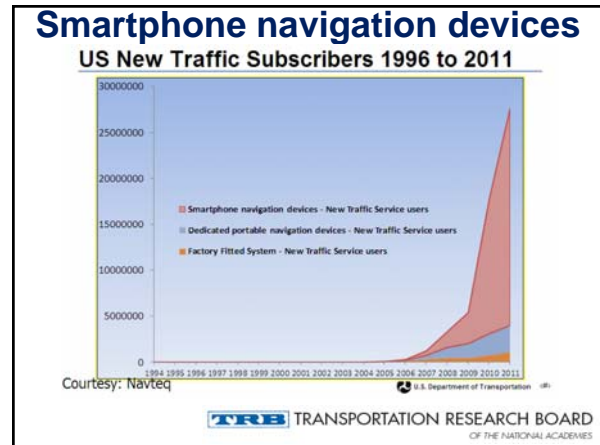
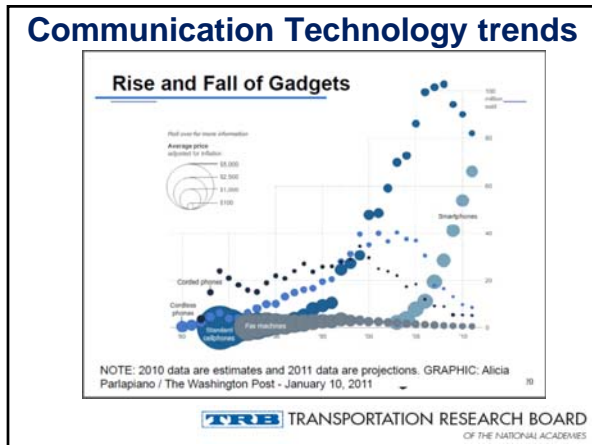
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## Since 2009

- New perspectives
- New technologies
- New generations focus
- New vehicles
- New platforms
- New policies/standards
- New international models

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## The new world of social media

A History of the Business of Social Media ... :-)

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## The Cloud is Global

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### TRB MISSION

- To provide leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal.

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### Special role for EMS at TRB

- One of the Key 4 E's
  - Engineering
  - Education
  - Enforcement
  - Emergency Medical Services**

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### Transportation Research Board is an excellent resource... we should be using it!!

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### ANB10 (5) TRB EMS Subcommittee Mission

- 'Bridging the gap between what we do and what is known - Enhancing ambulance transport safety through shared knowledge of technical data'.

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## Fragmentation

- There are now numerous and variably sound or technically sophisticated events occurring sporadically on ambulance safety – none under a transportation umbrella

## Fragmentation Panacea

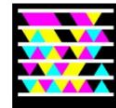
- ANB10(5) is an independent platform for:
- Bringing fragmented information together
  - Uniting diverse disciplines
  - Focus on technically robust information

## Whats out there?

- Integrated systems with mapping, safety and economy
- Deployment systems
- Driver management systems
- Intelligent transport system

## Fleet Management technologies

- ACETech/Ferno
- FleetEyes – Intermedix
- Zoll rescuenet and roadsafety fleet management systems
- Marvlis
- Telematicus
- Optima
- Northrop Grumman



## ACETech/Ferno



**ACETECH** 877.733.0911

### Integrated Vehicle Intelligence System

ACETECH is a fully integrated, vehicle performance monitoring & control system with unique tools to boost efficiency. ACETECH modules can be installed together or individually, and they seamlessly merge with your vehicle's onboard electronics and components to give you insight into every facet of operational conditions.

**Intelligence and insight** empower you to increase the efficiency and safety of your vehicles and fleet, while reducing your fuel and operating costs.

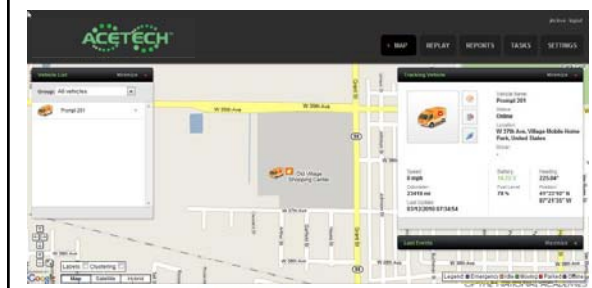
Click Modules to the Right to Learn More

CLICK HERE TO WATCH THE WEB SEMINAR

**ACETECH SYSTEM**

## ACETECH™ Web

- Mapping, reports, alerts, hotspots, vehicle data



## Fleet eyes

**intermedix**

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## ZOLL systems

**ZOLL**

PRODUCTS | MARKETS | SERVICES | SUPPORT | EDUCATION | ABOUT US | RESOURCE LIBRARY

**EMS Market Resources**

- RescueNet Billing
- RescueNet Code Review
- RescueNet Crew Scheduler
- RescueNet Dispatch
- RescueNet ePCR
- RescueNet Flight
- RescueNet Insight
- RescueNet Link
- RescueNet Navigator
- RescueNet Resource Planner
- RescueNet Road Safety

**RescueNet Experience Video**

RD  
MES

## Telematicus

**Telematicus**

Home | About | Products | Solutions | Support | Contact Us

**Global Green Drivers**

Changing the way that private telematics data is collected, analyzed and feedback with an innovative software application that runs on all major mobile and handheld platforms.

**Efficiency** | **Safety** | **Environmental**

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## Telematicus

Fleet Management capability

Vehicle database

- Individual vehicle/ data
- Fleet mileage collection/Checklists
- Link to other systems (SAP, Fleet)

Maintenance & Service Plans

- Repair history & Scheduling
- Action planning

Reporting

- Export to Excel for manipulation
- Scorecards views, Crystal Reports reporting
- Direct Feedback

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## Optima: Demand/Resource analysis and modeling and base location planning

**optima**

Demand analysis

Do you have a good understanding of your call demand? Would you like to know in more detail how and where you can improve your coverage plan?

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## Northrop Grumman

**NORTHROP GRUMMAN**

INFORMATION SYSTEMS

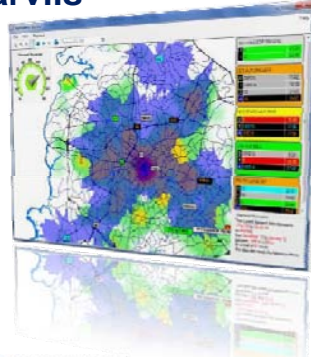
**CommandPoint™ Computer-Aided Dispatch System (CAD)**

Enhanced operation of the emergency communications center is the most visible impact of CommandPoint CAD, but the system also provides operational benefits throughout a public safety agency as well as benefits to the citizens of the community it serves.

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## Marvlis

- The dashboard calculates:
  - current percent of demand coverage
  - three closest vehicle recommendations for recent incidents
  - realistic travel time estimates for each possible responder



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## Marvlis

- The web interface:
  - individual choice of reference maps
  - integration of AVL/ARL and other live feeds
  - native Android client
  - creation/update of spatial data direct to ArcGIS Server
  - customization options to extend functionality



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## Priority Dispatch

Priority Dispatch

ANNOUNCING THE NEW NATIONALQ  
Case Review, Quality Assurance, LEARN MORE

PRODUCTS TRAINING COMPLIST SALES/CONSULTING SUPPORT CUSTOMER SERVICE RESEARCH/LINKS NEWS

MEDICAL (EMR)

- ProQA
- AGUA
- Carcell
- Quality Assurance Guide
- Fast Responder Guide
- Case Entry Pad
- Adv. Feedback Series (CDE)
- ECHO CD
- ECHO CD
- Principles of EMD
- EMD CASC

EMR (EMS)

- PMS Overview
- ProQA
- AGUA
- Carcell
- Quality Assurance Guide
- Fast Responder Guide
- Case Entry Pad

POLICE (EPR)

EMD MEDICAL PROQA PARAMOUNT

Click here to learn more

ProQA Dispatch Software integrates the power of the National Academy Protocols with today's critical computer technologies. It helps emergency dispatchers move smoothly through Case Entry and Key Questioning. It assists dispatchers in quickly determining the appropriate Determinant Code for each case and clearly displays the response configuration specifically assigned to the code by local agency authorities. ProQA then guides dispatchers in providing all relevant Post-Dispatch and Pre-Arrival instructions, as well as important case completion information. [MORE](#)

SOFTWARE TRAINING ProQAB

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## SAAB

SAAB

Police and Rescue Solutions

Introduction

SAAB's offer include solutions designed to support Special Police Forces, Police Strategic Command, Rescue Services and Fire Brigades, in extending and maintaining a common understanding of the situation between command centres and mobile units.

Effecting public security and social order requires the support of officers and equipment that ensure safety and reliability.

SAAB focuses on the emerging solutions that provide a common operational picture that increases awareness and decision-making and optimises resource management with appropriate software and equipment. From the tools will be well prepared for the tasks and here containing critical to real-time information.

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## The Transportation Research Board (TRB)

- History
- TRB was established in 1920 as the National Advisory Board on Highway Research to provide a mechanism for the exchange of information and research results about highway technology.

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## TRB divisions

- Technical Activities supports standing committees and task forces.
- Studies and Special Programs convenes specially appointed expert committees to conduct policy studies and program reviews, maintains the TRIS database, provides library services, prepares synthesis reports on behalf of the Cooperative Research Programs, and manages the Innovations Deserving Exploratory Analysis (IDEA) programs.

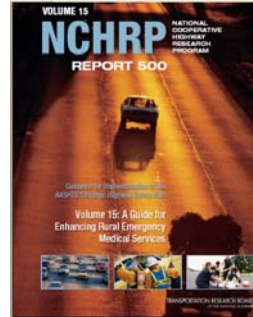
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## TRB research programs

- Cooperative Research Programs manages
  - National Cooperative Highway Research Program - NCHRP
  - Transit Cooperative Research Program - TCRP
  - Airport Cooperative Research Program – ACRP
  - National Cooperative Freight Research Program - NCFRP
  - Hazardous Materials Cooperative Research Program. -HMCRP
- Strategic Highway Research Program 2 (SHRP-2)
  - manages a targeted, short-term, results-oriented program of contract research designed to advance highway performance and safety for U.S. highway users.
- Administration and Finance provides financial, information technology, and other administrative support, including financial oversight of the contracts and grants that support the work of TRB, administration of publications sales and distribution, and maintenance of benefits and services for sponsor and affiliate organizations.

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## Transportation Research Board is an excellent resource... we should be using it!!



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## The TRB and EMS

- **TRB Mission:**  
To provide leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multi modal.
- Provides service to government, public, and scientific and engineering communities.
- **TRB Goals:**
  - Being prepared for challenges.
  - Conduct and promote knowledge.
  - Provide timely and informed advice.
  - Act as an effective and impartial forum.
  - Promote collaboration.
  - Contribute to the professional development
  - Conduct and promote communications efforts.
  - Contribute to public's understanding.
  - A resource to the nation and to the transportation community worldwide

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## What is ANB 10 (5)?

- ▶ Emergency Medical Services Safety Subcommittee, ANB 10 (5)
  - Subcommittee of the Transportation Safety Management Committee ANB 10, of the Transportation Research Board of the National Academies

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## EMS Safety Subcommittee ANB10(5)

- Subcommittee supported by Transportation Safety Management ANB10
- Established July 2007
- First Subcommittee meeting – Jan 2008
- Chair, Nadine Levick MD, MPH
- Co-Chair, Eileen Frazer, RN
- Scope – Medical Transport Safety

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## Multidisciplinary research

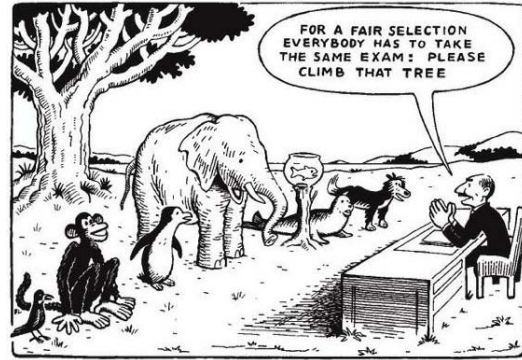
- Encompassing all aspects of transportation
- The expertise that EMS needs to address its transportation safety challenges includes:
  - Systems design
  - Transport systems safety
  - Human factors
  - Vehicles
  - Vehicle operations
  - Air medical transport safety
  - Impaired operators
  - Road design and egress and access
  - Highway and operational hazards

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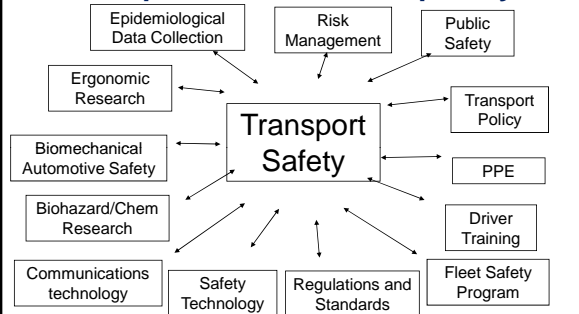
## Integration

ANB10(5) is an independent platform for:

- Bringing fragmented information together
- Uniting diverse disciplines
- Focus on technically robust information



## Ambulance Transport Safety IS Complex AND Multidisciplinary



## Negative impact on system performance...

- A medical error may kill a patient BUT
- An EMS crash can kill all those involved AND wipe out a rural EMS system AND negatively impact a regions response capacity.....

## USA EMS transport safety data estimates

- ~ 81,000 vehicles
- ~ 9,000 crashes a year
- ~ One fatality each week
  - ~ 2/3 pedestrians or occupants of other car
- ~10 serious injuries each day
- Cost estimates > \$500 million annually

## Ambulance transport a serious USA transport safety problem...

- the most lethal vehicle on the road both per mile travelled and per vehicle
- is exempt from federal commercial fleet safety oversight (FMCSA)
- 2/3 fatalities not in the ambulance
- Exempt from most FMVSS standards



**In the USA there are more safety standards for moving cattle than for moving patients**



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**Social media – twitter #ANB10(5) & today's event - #EMSFleet**



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**How do you use an eTag for the first time?**

Get Microsoft Tag App on your smartphone (free from your App store, it reads ALL eTags)

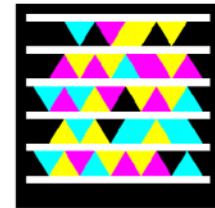
open Tag App and scan the eTag



[www.objectivesafety.net/TRBSubcommittee.htm](http://www.objectivesafety.net/TRBSubcommittee.htm)  
page will open directly on your phone

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**TRB Subcommittee info etag will take you here**  
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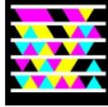


**Fleet management approaches**

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## Fleet Management technologies

- ACETech/Ferno
- FleetEyes – Intermedix
- Zoll rescuenet and roadsafety fleet management systems
- Marvlis
- Telematicus
- Optima
- Northrop Grumman



**ZOLL** TRANSPORTATION RESEARCH BOARD  
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## Data Collection & Driver Feedback System

- Onboard computer installed in each vehicle to assess driving performance
- Audible feedback puts drivers in control of performance



Onboard Computer



Audio Speaker

**ZOLL**

## Data Upload and Reporting

Data collected onboard is transferred via wireless data hub to ZOLL online for reporting and analytics.

Vehicle	Driver	Event Type	Severity	Location	Date	Time	Status	Notes
1001	John Smith	Hard Braking	High	123 Main St	2013-01-15	14:30	Resolved	Driver notified
1002	Jane Doe	Speeding	Medium	456 Elm St	2013-01-16	09:15	Pending	Reviewing footage
1003	Mike Brown	Unsafe Lane Change	Low	789 Oak St	2013-01-17	18:45	Resolved	Driver coached

**ZOLL**

## 5% of Drivers Cause 95% of Problems

Vehicle	Driver	Events	Severity	Location	Date	Time	Status	Notes
1001	John Smith	15	High	123 Main St	2013-01-15	14:30	Resolved	Driver notified
1002	Jane Doe	5	Medium	456 Elm St	2013-01-16	09:15	Pending	Reviewing footage
1003	Mike Brown	2	Low	789 Oak St	2013-01-17	18:45	Resolved	Driver coached
1004	Sarah Green	1	High	101 Pine St	2013-01-18	11:00	Resolved	Driver notified

Identify safe, efficient drivers and provide additional incentives and rewards.

Identify and manage the exceptions.

**ZOLL**

## ABC's of Safe Driving


- Driver grading system
- Average miles
- Between
- Counts (violations)



**ZOLL**




## Other events and behaviors monitored

- Braking, acceleration and side/sway forces
- Emergency lights and sirens
- Engine RPM
- Engine idle time (indicates wasted fuel)
- Distance driven
- Turn signals
- Numerous others—what's important to you?



## Telematics

CABIS® Business Solutions

### Global Green Drivers

“Low Cost Safe Driving Platform”

Software solutions for business process operations and management

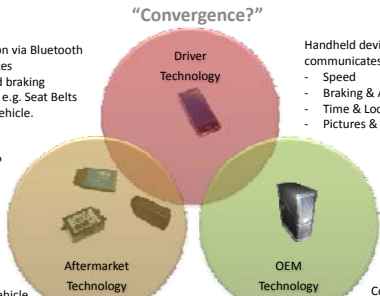
## Telematics

CABIS® Business Solutions

### “Convergence?”

More information via Bluetooth  
OBDII, Black Boxes

- More refined braking
- Specific data e.g. Seat Belts
- Tracking of vehicle.



Handheld device collects and communicates key data

- Speed
- Braking & Acceleration
- Time & Location
- Pictures & Video

Installation to vehicle

Connected vehicle becomes an IP point, data access

Software solutions for business process operations and management

## Telematics

CABIS® Business Solutions



### Safety Capability

- Driver Alarm
  - Instant SMS & Email location
- Driver Risks
  - Scorecards and Graphs
  - Automated Messages
  - Training
- Trip playback
  - Speed, Braking, Acceleration
- Incident Recording
  - Accident/Breakdown
  - Photographs

Software solutions for business process operations and management

## Incident Reporting

### global green drivers

**GGD Data Capture**

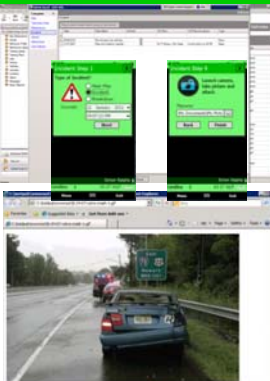
- Real time
- Key details
- Photographs
- Details on application

**Business System**

- Individual records linked to drivers and vehicles
- Action planning and assignment
- Attachments e.g. photos


**Reports**

- Launch accident reporting process
- Export to Excel for manipulation
- Scorecard or crystal reporting



## Telematics

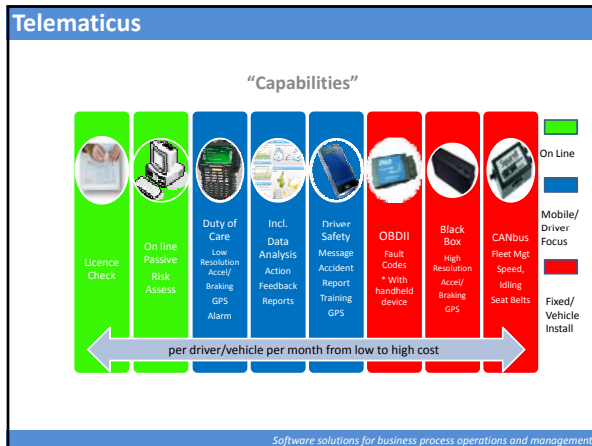
CABIS® Business Solutions



### So What

- Capability
- Computing Power
- Convergence
- Costs

Software solutions for business process operations and management



### Integrated business system

### global green drivers

Outlook view on home page with GGD modules included

List of Drivers within the system with key details, easy access to sorting information.

### Emergency Vehicle Intelligence

The Future Is Now with

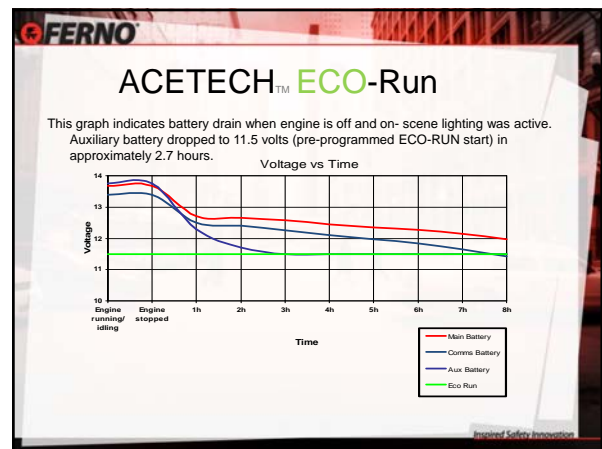
The ACETECH System provides system wide, on-board intelligence that improves the efficiency and safety of your emergency vehicles and staff, while reducing your operating costs.

### Four Modular Functions

1. Vehicle operations center
  - Driver & vehicle operations
2. Patient Compartment
  - Mobile trauma bay environment; passive support
  - Communication, temperature, lighting, securement & access, storage, & overall interiorly & exterior safety
3. Medic platform – work environment & safety
  - Seating, operating areas, reach & access
4. Patient platform – care & safety focused
  - Cot & restraint system, patient care accessories

### ACETECH Core Benefit

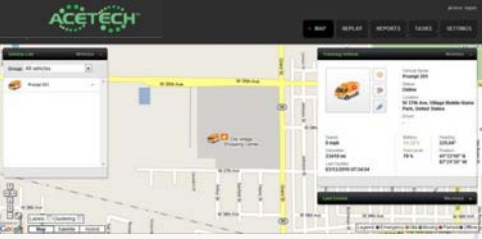
1. Integrated/Modular Solution
2. ROI
3. Vehicle Performance
4. User Power
5. Service
  - Affordability
  - Excellent warranty
  - Reliable
  - Modular design
  - Forward thinking
  - Product/OEM Support



**FERNO**

### ACETECH™ Web

- Mapping, reports, alerts, hotspots, vehicle data



Inspired Safety Innovation

**FERNO**

### ACETECH™ Safety System Benefits ROI

- The following is a partial list of benefits that may be realized through a properly managed vehicle safety program.
  - Fewer collisions
  - Fewer collision/near collision related injuries
  - Reduced insurance premiums
  - Fewer lawsuits
  - Reduced repair costs
  - Fewer towing bills
  - Reduced light duty
  - Increased vehicle life
  - Less time spent investigating incidents- more time for beneficial activities
  - Improved image
  - Improved financial performance




Inspired Safety Innovation

**FERNO**

### ACETECH™ Geo Fencing

- Set boundaries for vehicle travel and to receive automatic notification when a vehicle leaves this boundary
- Important in theft control.
- Maintain vehicles at expected locations thereby reducing response times, speeding events and fuel expense.



Inspired Safety Innovation

**FERNO**

### ACETECH™ in the Future

- Advanced camera systems. Use of cameras to improve safety and security is not new. Camera systems include:
  - Rear view
  - Side View
  - Front view
- Cameras may also be used to provide real time consult with on-line medical control.



Inspired Safety Innovation

### Now on to our presentations

- Nancy Bendickson, Senior Consultant, AON, Minneapolis
- Bruce Farr, Ornge, Vice President of Operations, Ontario
- Charlene Cobb, Sunstar EMS, Florida

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### TRB EMS Fleet Webinar

Nancy Bendickson, CDS, CSP, ARM  
Senior Consultant,  
Aon Global Risk Consultants  
March 6, 2013

**AON** **TRB** TRANSPORTATION RESEARCH BOARD  
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## Introduction

- Focus for today's webinar is on operational fleet management technology tools
- Technology alone will not create a sustainable, effective, fleet safety process
- It provides a means to monitor on-road performance, which did not exist before



## Why Manage Your Fleet?

### Fleet Crash trends:

- Leading cause of occupational fatality in US
- Vehicle crashes shown to be most likely cause of work-related fatality in EMS

- **Driver Decisions were major factor in occurrence of motor vehicle crashes**

**Employers need to promote safe driving behavior and enforce driver safety policies**



## Definitions

- Fleet Safety Management
  - Effective management of vehicles
  - Effective management of people while driving
- Fleet Safety Program
  - Series of elements permitting fleet to meet assigned objectives, safely, cost effectively, and on schedule
  - Basic goals are to reduce motor vehicle crashes, protect employee health, and reduce potential for property damage or injuries to general public or customers



## Measures of Effective Fleet Safety System

- Fleet Safety & Operational Practices that can be defended
- Management Accountability and Controls
- Loss prevention efforts that identify key loss drivers
- Establish action plans to control/reduce risk factors leading to losses



## ANSI/ASSE Z 15.1 2012

- Standard sets forth practices for safety operation of motor vehicles within an organization:
  - Definitions
  - Management, Leadership, & Administration
  - Operational Environment
  - Driver Considerations
  - Vehicle Considerations
  - Incident Reporting and Analysis



## EMS Fleet Practices

- EMS Practice/Policy
  - Operating with Due Regard
  - Seat belt use for all occupants
  - Equipment secured
  - Intersection/Traffic Device Procedures
  - EVOC – Emergency Vehicle operators course
  - Distracted Driving Controls
  - Communications
    - Cell phones / texting
    - In-vehicle communication



## FMCSA's Safety Management Cycle



AON

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## Fleet Audit

- Management Support
- Written Operational Policies
- Driver Management / Journey Management
- Driver Training / Communication
- Vehicle Management
- Accident Reporting & Investigation
- Program Performance Review

AON

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## Path to Sustainable Fleet Safety System

- Implement systems
- Utilize fleet safety team to assist with implementation & communication
- Measure performance to systems
- **RESULT** – a sustainable fleet safety management accountability process

AON

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## Distracted Driving

- Distracted driving is any activity that could divert a person's attention away from the primary task of driving.
- Effects of cell phone use:
  - ✓ delays reaction time as if you had .08 blood alcohol concentration,
  - ✓ increases crash chances by 4X crash-handheld phone & 23X by Texting

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## Types of Distraction:

- Visual – takes your eyes off road.
  - Cognitive - takes your mind off the road
  - Manual - takes your hands off the wheel
  - Auditory - takes your focus off the road
- Tasks that can be a driving distraction often fit into more than one category.

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## Sample of Non-Driving Tasks

Task	Odds Ratio	95% Confidence Interval	Frequency of Safety-Critical Events	Frequency of Baselines	Mean Eyes Off Forward Road Time (out of 6 sec)
Text message on cell phone	23.24	9.69 - 55.73	31	6	4.6 sec
Interact with/look at dispatching device	9.93	7.49 - 13.16	155	72	4.1 sec
Write on pad, notebook, etc.	8.98	4.73 - 17.08	28	14	4.2 sec
Use calculator	8.21	3.03 - 22.21	11	6	4.4 sec
Look at map	7.02	4.62 - 10.69	56	36	3.9 sec
Dial cell phone	5.93	4.57 - 7.69	132	102	3.8 sec
Talk/listen to hand-held phone	1.04	0.89 - 1.22	195	837	1.3 sec
Talk/listen to hands-free phone	0.44	0.35 - 0.55	91	901	1.6 sec
Talk/listen to CB radio	0.55	0.41 - 0.75	50	399	1.3 sec

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## Summary

- Systems – Evaluate your level of fleet safety systems in your service for Fatigue Mgmt, Driver Fitness & Focused Driving
- Strategies – Increase focus on fleet safety to same level as patient and employee safety
- Solutions – Audits, Perception Survey to address behavior change in all levels of organization, Education, & use of Technology



TRB EMS Subcommittee ANB10(5)  
March 6<sup>th</sup>, 2013

## EMS Fleet Safety Seminar

**Fleet safety systems & “Putting invehicle telematics to use”**  
Bruce Farr, Ornge, Vice President of Operations, on behalf of John Cunnane, Niagara, Canada



### Niagara Region

#### Niagara Region Demographics

Population: 430,000 (12 Municipalities)

Niagara region: 1850 square km

Ambulance call volume: 75,000 (annually)

Mileage: 2,000,000 km driven annually

26 Peak Vehicles



### Acetech

#### Integrated Vehicle Intelligence System

Fully integrated, vehicle performance monitoring and control system with on-board intelligence.

- Safety Systems
- Eco-Run Module Benefits
- Asset Protection Benefits

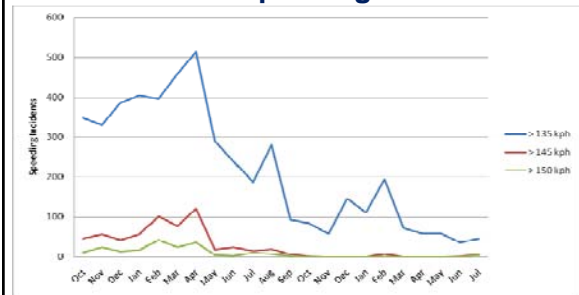


### Safety System (Integrated into AVI)

- Speeding infractions, Unbelted, Unsecured occupants
- Lights and siren compliance
- Create Driver Safety Reports- provide feedback to employees
- Set pre-defined speed limiters



### Niagara EMS Decrease in Speeding Infractions





## Optimize your fuel efficiency and reduce your carbon footprint

- Reduce idle times by as much as 40% to lower your fuel consumption and costs
- Reduce carbon emissions and contribute to a greener environment
- Prevent flat batteries
- Reduce engine wear and reduce maintenance costs while extending vehicle & engine life
- Monitor driver behaviour to reduce excessive rpm for additional reduction of fuel consumption

## Report Generated for One Week of Excessive Idling and Potential Savings on 5 vehicles



## Summary

### Automatic Vehicle Informatics (AVI) Benefits

- Protect assets with theft protection and geo-fencing
- Reduce engine wear and reduce maintenance costs while extending vehicle & engine life
- Modify driving behaviors with real time dashboard and full featured reports, and automatic updates on driving violations
- Improve fleet efficiency and operations with remote vehicle diagnostics & real time Fleet Management
- Track information through web based interface or integration with established dispatch software



TRB EMS Subcommittee ANB10(5)  
March 6th, 2013

## EMS Fleet Safety Seminar

**Fleet safety systems &  
“Putting invehicle telematics to use”**  
Charlene Cobb, Sunstar, Florida

## Safety Technology A System Perspective



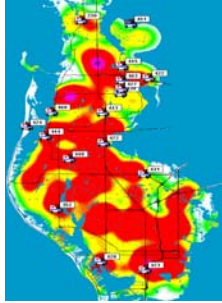
## Marvlis System Overview

### Front End Technology



## Marvlis at Sunstar

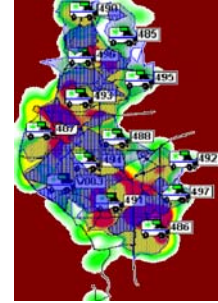
- Prior to Marvlis: We used history and geography
- Since Marvlis: We have data based on Year, week, day minute (17 years)
- We now weather the "storms" with more efficiency



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## Utilization of Marvlis

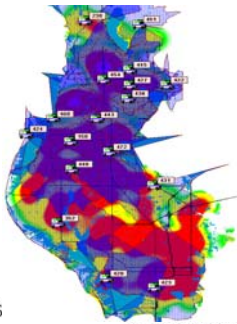
- ✓ Improved response times
- ✓ Helps determine post plans
- ✓ Forecasts
- ✓ Routes



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## Dynamic Service Area

- Blue overlay shows us what parts of the county are covered
- Takes into account dead ends, traffic, geography water ways



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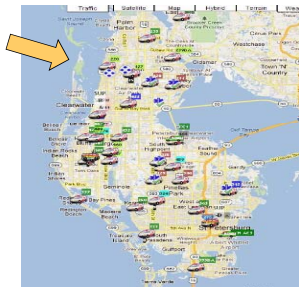
## Fleet Eyes Overview Back End Technology



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## Fleet Eyes Functionality

- Weather
- Traffic
- Routing
- Speed
- Tracking
- Area Resources



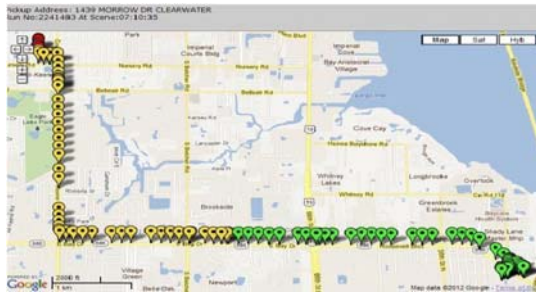
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## Fleet Eyes/Geo-Fencing



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## Route Review



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## Real Time Tracking



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## Call Details



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## Road Safety Overview

Retrospect Technology



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## Road Safety Provides Data for Incident Investigation



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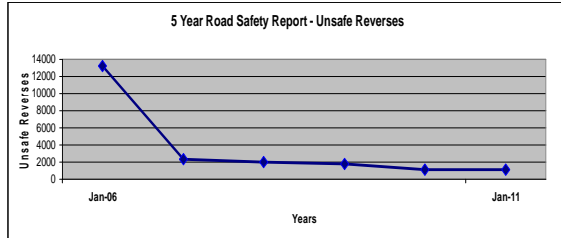
## Monthly Driver Reports

- Identifies high risk behaviors
- Provides real time feedback to driver
- Provides reports for employee evaluation

Road Safety Summary												
Driver Safety Summary (Summary & The Summary Data)												
Driver ID	Driver Name	Summary	Percentage	Percentage	Summary	Summary	Summary	Summary	Summary	Summary	Summary	Summary
00001	John Doe	100	100	100	100	100	100	100	100	100	100	100
00002	Jane Smith	95	95	95	95	95	95	95	95	95	95	95
00003	Mike Johnson	90	90	90	90	90	90	90	90	90	90	90
00004	Sarah Lee	85	85	85	85	85	85	85	85	85	85	85
00005	David Kim	80	80	80	80	80	80	80	80	80	80	80
00006	Emily White	75	75	75	75	75	75	75	75	75	75	75
00007	Chris Brown	70	70	70	70	70	70	70	70	70	70	70
00008	Alex Green	65	65	65	65	65	65	65	65	65	65	65
00009	Olivia Black	60	60	60	60	60	60	60	60	60	60	60
00010	Noah Gray	55	55	55	55	55	55	55	55	55	55	55
00011	Aria Blue	50	50	50	50	50	50	50	50	50	50	50
00012	Liam Red	45	45	45	45	45	45	45	45	45	45	45
00013	Mia Purple	40	40	40	40	40	40	40	40	40	40	40
00014	Ethan Yellow	35	35	35	35	35	35	35	35	35	35	35
00015	Ava Pink	30	30	30	30	30	30	30	30	30	30	30
00016	Lucas Orange	25	25	25	25	25	25	25	25	25	25	25
00017	Sophia Silver	20	20	20	20	20	20	20	20	20	20	20
00018	Benjamin Gold	15	15	15	15	15	15	15	15	15	15	15
00019	Charlotte Bronze	10	10	10	10	10	10	10	10	10	10	10
00020	James Platinum	5	5	5	5	5	5	5	5	5	5	5
00021	Avery Diamond	0	0	0	0	0	0	0	0	0	0	0
00022	William Ruby	0	0	0	0	0	0	0	0	0	0	0
00023	Isabella Sapphire	0	0	0	0	0	0	0	0	0	0	0
00024	Matthew Emerald	0	0	0	0	0	0	0	0	0	0	0
00025	Madison Topaz	0	0	0	0	0	0	0	0	0	0	0
00026	Christopher Garnet	0	0	0	0	0	0	0	0	0	0	0
00027	Grace Amethyst	0	0	0	0	0	0	0	0	0	0	0
00028	Andrew Citrine	0	0	0	0	0	0	0	0	0	0	0
00029	Chloe Peridot	0	0	0	0	0	0	0	0	0	0	0
00030	Robert Malachite	0	0	0	0	0	0	0	0	0	0	0
00031	Skylar Labradorite	0	0	0	0	0	0	0	0	0	0	0
00032	Jonathan Smoky Quartz	0	0	0	0	0	0	0	0	0	0	0
00033	Savannah Aventurin	0	0	0	0	0	0	0	0	0	0	0
00034	Christopher Labradorite	0	0	0	0	0	0	0	0	0	0	0
00035	Madison Smoky Quartz	0	0	0	0	0	0	0	0	0	0	0
00036	Andrew Labradorite	0	0	0	0	0	0	0	0	0	0	0
00037	Chloe Smoky Quartz	0	0	0	0	0	0	0	0	0	0	0
00038	Robert Labradorite	0	0	0	0	0	0	0	0	0	0	0
00039	Skylar Smoky Quartz	0	0	0	0	0	0	0	0	0	0	0
00040	Jonathan Labradorite	0	0	0	0	0	0	0	0	0	0	0
00041	Savannah Smoky Quartz	0	0	0	0	0	0	0	0	0	0	0
00042	Christopher Labradorite	0	0	0	0	0	0	0	0	0	0	0
00043	Madison Smoky Quartz	0	0	0	0	0	0	0	0	0	0	0
00044	Andrew Labradorite	0	0	0	0	0	0	0	0	0	0	0
00045	Chloe Smoky Quartz	0	0	0	0	0	0	0	0	0	0	0
00046	Robert Labradorite	0	0	0	0	0	0	0	0	0	0	0
00047	Skylar Smoky Quartz	0	0	0	0	0	0	0	0	0	0	0
00048	Jonathan Labradorite	0	0	0	0	0	0	0	0	0	0	0
00049	Savannah Smoky Quartz	0	0	0	0	0	0	0	0	0	0	0
00050	Christopher Labradorite	0	0	0	0	0	0	0	0	0	0	0

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## Measuring Our Success at Sunstar Paramedics



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## Summary

Through these technologies:

- ✓ We realized dramatic change in our drivers attitude toward safety
- ✓ We have evidence based data to use for individual driver training and refresher courses
- ✓ We are able to identify drivers that fail to align themselves with our mission of safety

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