

Safe & Smart Streets

1330- 1500 Hours

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Chairman- International Road Federation ITS Committee

Chairman- NEMA Performance Measures Standards Committee (TS-9)

“Making Cities Safer: Traffic Data Collection for Vision Zero”

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Chairman- International Road Federation (IRF) ITS Committee

Chairman- NEMA 3TS Performance Measures Technical Committee (NEMA TS-9 Standard)



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YOU CANNOT “MANAGE”- WHAT YOU DO NOT “MEASURE”

FACTS:

- 1.3 million roadway fatalities worldwide in 2013.
- 40,000 traffic fatalities in the USA in 2016, a 6% increase from 2015.
- Traffic accidents are the #1 cause of death among those aged 15-29 years.
- 3 out of 4 road deaths are among men.
- Low and middle income countries have 90% of the world’s road traffic deaths.
- 49% of all road traffic deaths are among pedestrians, bicycles and motorcycles.

(* 2015 Per World Health Organization- "Global Status Report on Road Safety")



YOU CANNOT “MANAGE”- WHAT YOU DO NOT “MEASURE”

FACTS:

• Contributing factors to roadway fatalities-

- **Distracted driving:** (300% increase in last three years in USA)
- **Impairment:** (20% of total roadway crashes annually in USA)
- **Excessive speed:** (20% of fatal traffic crashes involve speeding)
- **Failure to yield to pedestrians:** (10% of total crashes)



What is “VISION ZERO”?

- “**Vision Zero**” is a multinational road traffic project that aims to achieve a highway system with “**zero fatalities or serious injuries**”.
- Recognizes that driver education, driver behavior, road conditions, pedestrian behavior/traffic, public transit traffic, traffic signals, visibility, weather and enforcement of traffic laws are all important variables that directly impact vehicle-related injuries and fatalities.
- It began in Sweden in 1997, with a core vision of-
 - “***Life and health can never be exchanged for other benefits within the society***” versus a widespread reciprocal view- “A monetary value is placed on life and health, and then that value is used to decide how much money will be spent on the roadway network towards the benefit of decreasing how much risk.” What is the value of a human life?

What is “VISION ZERO” ?

- **POSSIBLE SOLUTIONS:**

- Rapid deployment of V2V communications on vehicles for collision avoidance.
- Expedite deployment of V2I and I2V communications / autonomous vehicles
 - **GOAL: Reduce amount of human driver error**
- Infrastructure changes based upon “Vision Zero” policies
 - **Protected bicycle lanes** w/ bicycle signals
 - **Dedicated pedestrian signals** / DSRC or 5G Smart Phone apps for pedestrian/bicycle detection
 - **Expanded sidewalks**, extended clearance intervals for pedestrians & bicycles
 - **Enhanced law enforcement-** Emphasis: speeding, distracted & impaired driving
 - Make **emergency vehicle preemption** data available to all other vehicle’s heads-up display (I2V)



“ITS Stakeholders” are comprised of the following:

- ▶ Ministry of Transport
- ▶ Local Development Authority
- ▶ Local, County or State agency
- ▶ Ministry of Interior / Traffic Police
- ▶ Civil Defense (Police, Fire, Emergency Medical Services)
- ▶ Military
- ▶ Public Transit agencies
- ▶ Business Owners
- ▶ Motorists, Pedestrians & Bicyclists
- ▶ Traffic data publishers
- ▶ Traffic data consumers
- ▶ Public private partnerships - Traffic agencies/ Academic Institutions / Concessionaires
- ▶ Data regulator
- ▶ Traffic and Highway Planners
- ▶ Traffic consultants
- ▶ Railroad Operators



ACTION - Traffic Data Collection for “VISION ZERO”

1. Prepare an annual “**Black Spot**” report, or geographic analysis of intersections with the greatest number of fatalities/ serious injuries during the last 12 months. (“Anonymized heatmaps”)
 - Traffic police reports
 - Medical reports from hospitals & clinics
2. Analyze and quantify the root cause of every fatal or serious accident, and compare with roadway or intersection locations for commonality.
3. Have a quarterly review meeting with all ITS stakeholders to share this “Vision Zero” data and ask for their input and contribution into how to make the roadways safer.
4. Encourage all ITS stakeholders to begin a consistent data collection program.
If you can measure it- you can manage it more effectively.



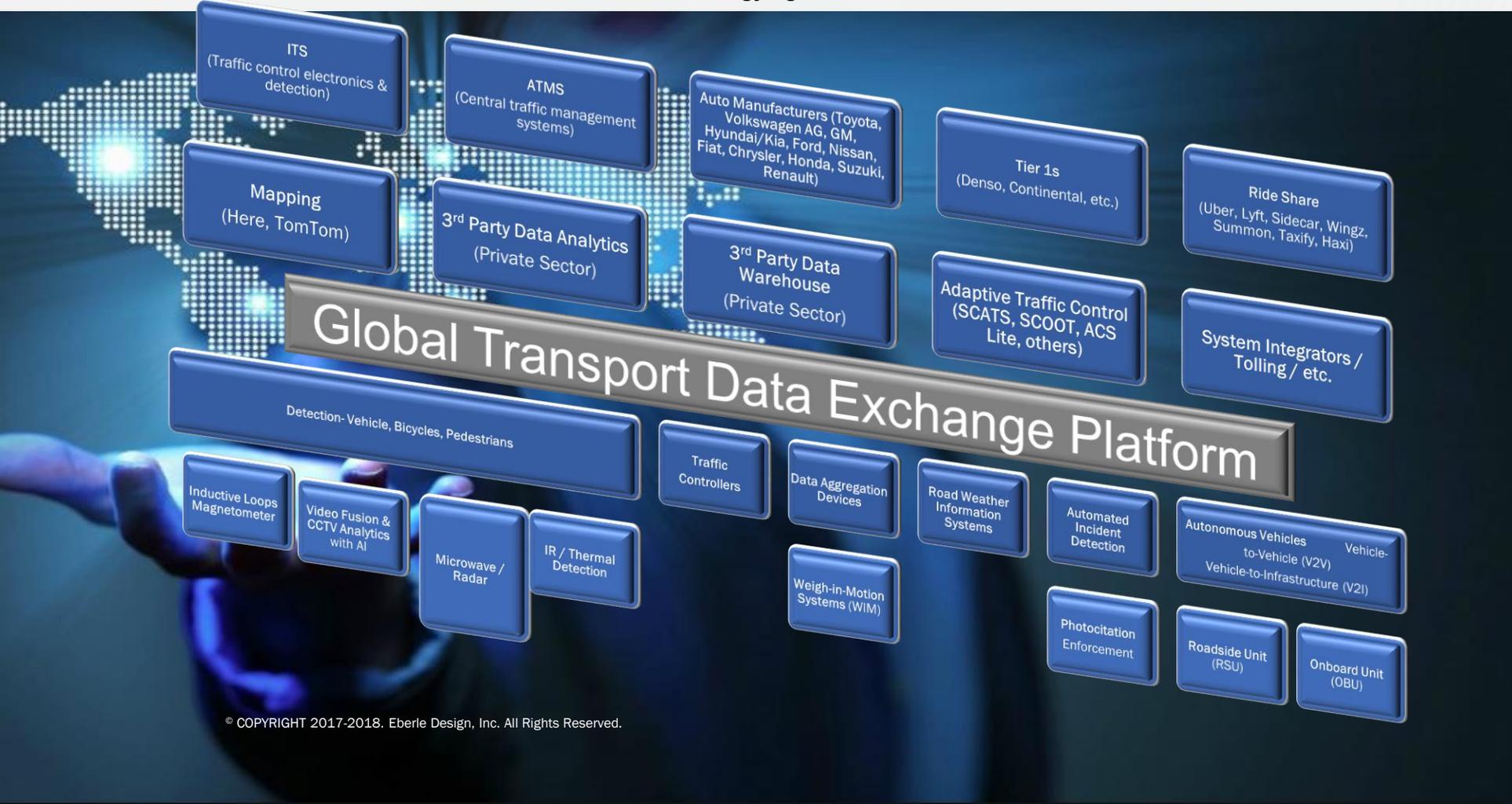
ITS and Big (Traffic) Data

Data for "VISION ZERO"



THE FUTURE OF BIG TRAFFIC DATA

“Traffic data collection must be hardware and detection technology agnostic”.



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Data – Information - Action

To Be Guiding, Predictive, and Proactive...



We must collect, analyze, and interpret data and take action



Products have been developed that can collect the data



You cannot manage what you do not measure!

Conclusion

WHERE DO WE GO FROM HERE WITH “VISION ZERO”?

- A truly “**Smart City**” must also be a “**Safe City**” for everyone.
- Begin to collect actionable traffic data now on “problem” intersections.
- Solicit input on safety improvements from all ITS stakeholders.
- Provide public service safety education for pedestrians & bicyclists.
- Add key “Vision Zero” elements to all driver education courses.
- Add “Vision Zero” test questions to all driver license examinations.
- Enhance law enforcement presence with specific focus upon-
 - Distracted (texting while driving) and impaired driving
 - Implement a “hands-free” law for cellular telephone operation for the driver
 - Over speed / speeding vehicles
 - Red light running
 - “Jaywalking” - pedestrian violation of pedestrian signal indication
- Share lessons learned with other cities with “Vision Zero” experience.

