



PARTS

PARTNERSHIP FOR ANALYTICS
RESEARCH IN TRAFFIC SAFETY

**GOVERNMENT INDUSTRY
MEETING**

April 3-5, 2019 | Washington, DC

Partnership for Analytics Research in Traffic Safety (PARTS): Demonstrating the Value of the Partnership

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*This meeting is co-located with



FORMATION OF THE PARTNERSHIP



What is PARTS?

- Voluntary, data sharing partnership between government and industry for collaborative safety analysis

Why was PARTS developed?

- Rapidly changing technologies demand new analytic approaches to ensure safety
- Proactive analysis of emerging safety issues

What is unique about PARTS?

- Data pooling improves the problem of limited data
- Collaborative analysis among industry experts
- Gives insights that cannot be obtained by any one individual partner (benchmarking, aggregation)
- Dynamic, continuous and timely capability
- New, complimentary tool for the safety toolbox

HOW THE PARTNERSHIP WORKS

Current partners are NHTSA and six OEMs representing 63% of U.S. market

INDUSTRY



- OEM data
- Subject matter expertise

GOVERNANCE

Comprised of partners working toward consensus decisions

INDEPENDENT THIRD PARTY

MITRE

- Program Management
- Data safeguards
- Analytics

GOVERNMENT



- Funding
- Government data
- Expertise

PARTS GUIDING PRINCIPLES

Strictly for Safety Advancement

- Not competitive
- Not punitive - Data and results from PARTS not to be used for punitive action

Equal Voice

- 1 partner, 1 vote

Transparency within Partnership

- Open decisions
- Documented data and security processes

Voluntary

- Participation is completely voluntary
- Partners can leave at anytime

Collaborative

- In good faith

Protection of Data

- Aggregated, de-identified and anonymized

Equitable Contribution

- Aligned to research participation

REAL-WORLD ADAS EFFECTIVENESS

Initial Research Question: How effective is AEB in reducing crash rates?

Data Sources

Vehicle Features/Content

- 10 million vehicles in study
- 26 make/models
- Model Year 2015 – 2017

State Crash Data

- 4 million crashes from nine states
- All police-reported crashes

Collaborative Analysis



Results



Aggregate Results



OEM Benchmarks

INTERACTIVE DASHBOARD

Mock Results. For Demonstration Purpose Only.



Aggregate Results:

How effective is equipage of AEB in reducing rear-end strike rate?

76.58

Crash rate *without* AEB
per 1000 vehicle years



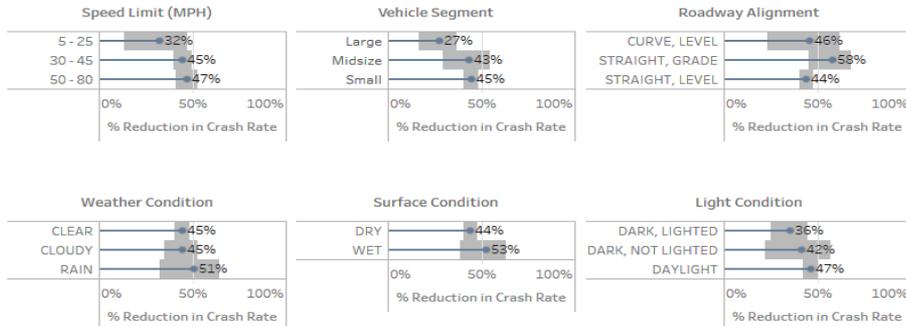
45.95

Crash rate *with* AEB
per 1000 vehicle years

42.5%

% reduction in crash rate

% Reduction in Crash Rate



Confidence Interval On or...
On

Min. # of Crashes
Threshold
15 468

- Vehicle Maneuver
- (All)
 - Changing Lanes
 - Movements Essenti...
 - Negotiating a Curve
 - Slowing
 - Stopped in Traffic
 - Turning Left
 - Turning Right

Speed Limit Buckets
(All)

Vehicle Segment
(Multiple values)

Roadway Alignment
(All)

Weather Condition
(Multiple values)

Surface Condition
(All)

Light Condition
(Multiple values)

Highest Injury Level
(All)

Mock Results

Shown to demonstrate interactive capability of dashboard

PRELIMINARY AGGREGATE RESULTS

Our study indicates that vehicles equipped with AEB measurably reduce rear-end strike crashes compared to vehicles without AEB

- Largest study of its kind
- Result is consistent with other studies

Dynamic Research Capability

- Developed interactive dashboards that enable partners to drill-down on results, which can be updated and customized
- Can view results in various environmental and road conditions obtained from the state crash data

Study Limitations

- Limited to selected models / model years from partner OEMs
- Based on VIN-level AEB equipage, not usage
- Does not account for the presence of other ADAS features
- Limited to 9 states, not necessarily representative of U.S. crashes
- Does not account for differences in state reporting practices
- Does not adjust for driver-related differences

MAJOR ACHIEVEMENTS

NHTSA, OEM Partners and MITRE established trusting and collaborative working relationships

Partners willing and able to transfer sensitive data (10M OEM build records, 4M warranty records, and 4M state crash records) and worked collaboratively to conduct safety research

Developed methodologies to aggregate, standardize, and analyze disparate data from across 6 OEMs and 9 states as a basis for analysis

Partners agree that this model offers an improved ability to gain real-world insights into the performance of safety technologies

LOOKING AHEAD



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