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Digital Summit

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Executive Leadership Provided By

mazda

Partnership for Analytics Research in Traffic Safety

Millions of Miles: What is the Real World Data Telling Us?

TM

Overview

Introduction to PARTS Program
Joseph Kolly
Chief Safety Scientist, NHTSA, and Co-Chair
of PARTS Governance Board

PARTS Phase 2 Overview
Paul Teicher
Senior Policy Analyst, U.S. Department of
Transportation

Industry Perspective
Tim Czapp
Senior Safety Manager at FCA, and Industry
Co-Chair of the PARTS Governance Board

Overview

Advanced Driver Assistance Systems Effectiveness Research

Schuyler St. Lawrence

Senior Engineer at Toyota, and Co-Chair of ADAS Effectiveness Work Group

PARTS Roadmap

Michelle Michelini

Senior Manager of Global Vehicle Safety Analytics at GM, and Co-Chair of PARTS Roadmap Working Group

PARTS is a Unique Public-Private Partnership (PPP) for Safety Analysis

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Pools real-world data, information, and resources for collaborative safety analysis and discovery that cannot be accomplished individually

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Goal: Gain real-world insights into safety benefits and emerging safety opportunities that can improve performance of advanced safety technologies

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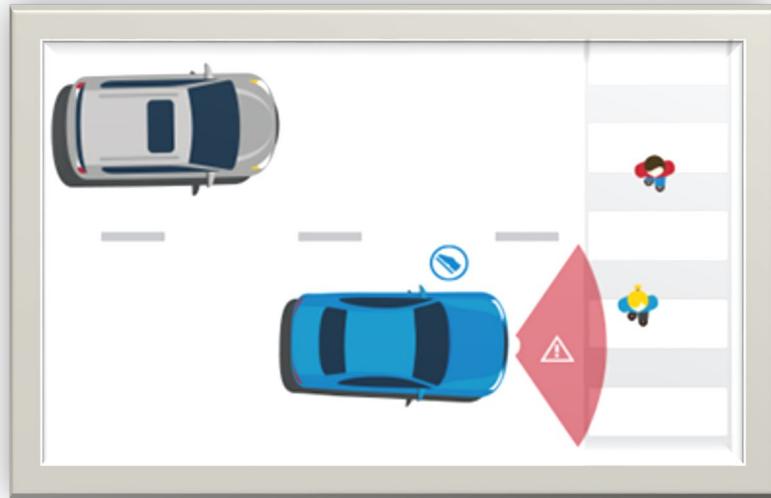
Focus on ADAS now to lay the foundation for automated driving systems, connected vehicles, and other real-world advanced technologies in the future

PARTS Phase 1

Achievements

- Trusting and collaborative working relationships formed and demonstrated

- Partners voluntarily shared sensitive data

- Aggregated, standardized & analyzed disparate data

- Agreement of partners to move forward
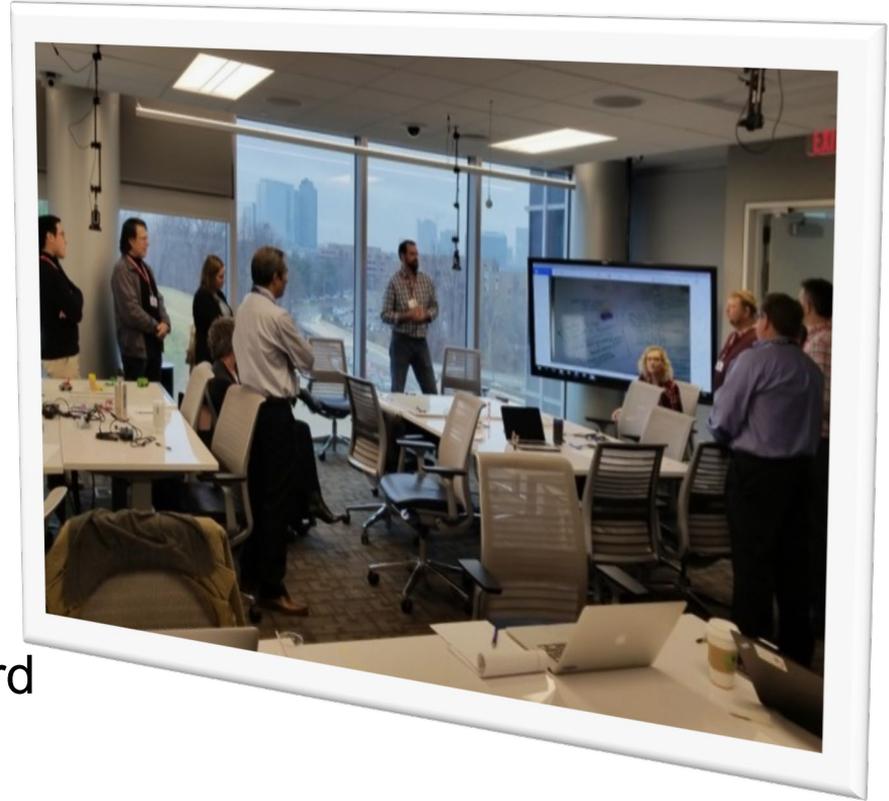
PARTS Phase 2

Overview

- U.S. DOT funded Phase 2

- $2.1M contract between the MITRE Corporation and U.S. DOT

- 2-year period of performance

- Began September 2020

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Goals

- Expand scope and complexity of analyses performed

- Expand membership

- Mature governance & management

- Lay foundation for Phase 3

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Success Criteria

Meaningful results that are communicated and applied

PARTS Participation, Operations, and Value Proposition

2020
- Organizing for Scale

2021
- Operating at Speed
- Planning for Growth

Phase II
Eight Automakers
70% Market Share
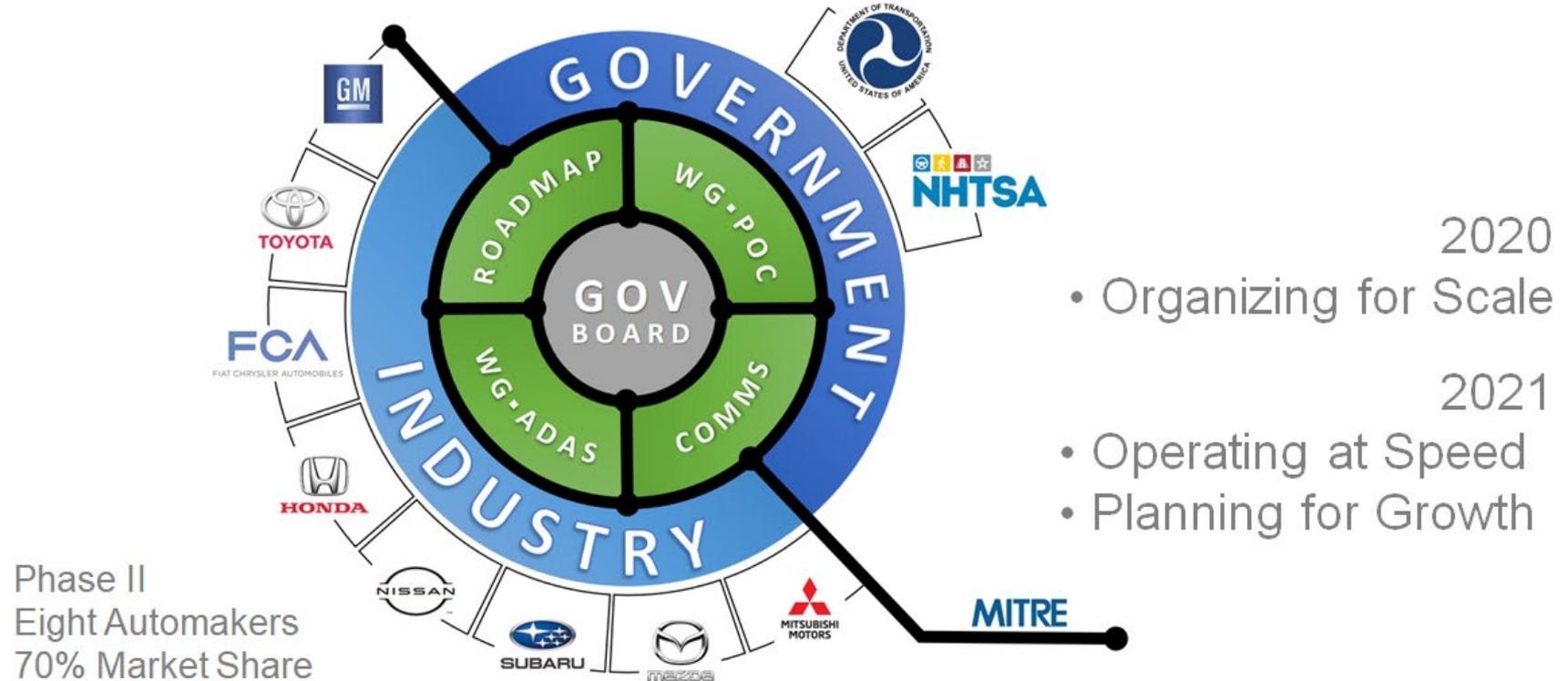
PARTS Participation, Operations, and Value Proposition
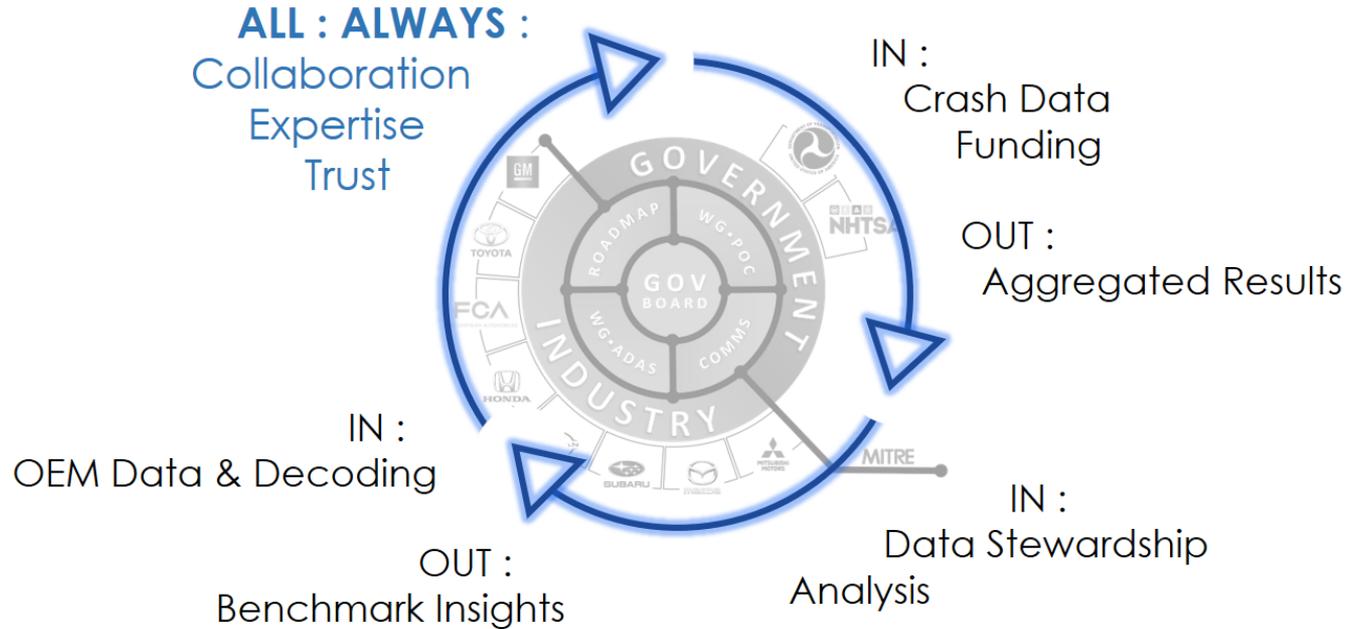
Large Partner-Provided Dataset Enabling Meaningful Results

	Phase 1	**Phase 2**
NHTSA Crash Data	• All police-reported crashes • 4 million crashes • 9 states	• Start with 9 states and expanding to 15-plus
Vehicle Build Data	• 10 million vehicles in study • 26 models • 4 vehicle segments • Model Year 2015 – 2017	• 40+ million vehicles • 90-plus models • 7 vehicle segments • Model Year 2015 – 2021

Phase 2 Study: Research Objectives

- What is the overall effectiveness of ADAS features against relevant crashes?

- What factors influence ADAS feature effectiveness and to what extent?

- What combination of ADAS features contribute to the reduction of fatalities, injuries, and crashes?

Phase 2 Study: Research Objectives and ADAS Features

- What is the overall effectiveness of ADAS features against relevant crashes?

- What factors influence ADAS feature effectiveness and to what extent?

- What combination of ADAS features contribute to the reduction of fatalities, injuries, and crashes?

- Forward Automatic Emergency Braking
- Forward Collision Warning
- Pedestrian Detection Warning
- Pedestrian AEB
- Lane Departure Warning
- Lane Keeping Assistance
- Lane Centering
- Blind Spot Warning
- Blind Spot Intervention

Methodological Approach

Two Methods:

1. Odds-Ratio Comparison (Quasi-Induced Exposure)

- Compare the rates of system-relevant crashes/control crashes for equipped and unequipped vehicles
- Logistic model verifies significance of estimated effects and impact of covariates

2. Crash Risk Rate Comparison

- VIN-level exposure measured based on time-in-service
- Relevant crashes identified from PAR data fields
- Metrics used: crash rate ratio and % reduction in crashes

Aggregate results to be shared publicly later in 2021

PARTS Evolution

2020-2022

2022-2025

2025-2030

Foundational Stage
(Phase 2)

Expanding Stage

Advancing Stage

Increase the depth and breadth of analyses by expanding to most U.S. passenger vehicles and integrating new datasets – all while building enabling capabilities, maturing technical environment, and expanding public presence of the partnership.

PARTS Evolution

2020-2022

2022-2025

## 2025-2030

Foundational Stage
(Phase 2)

Expanding Stage

Advancing Stage

Become a leading source for accelerated safety insights through rapid collection of data directly from vehicles to provide a better window into emerging issues and traffic safety.

PARTS Evolution

As PARTS integrates new datasets and matures capabilities, it will answer increasingly complex and nuanced research questions.
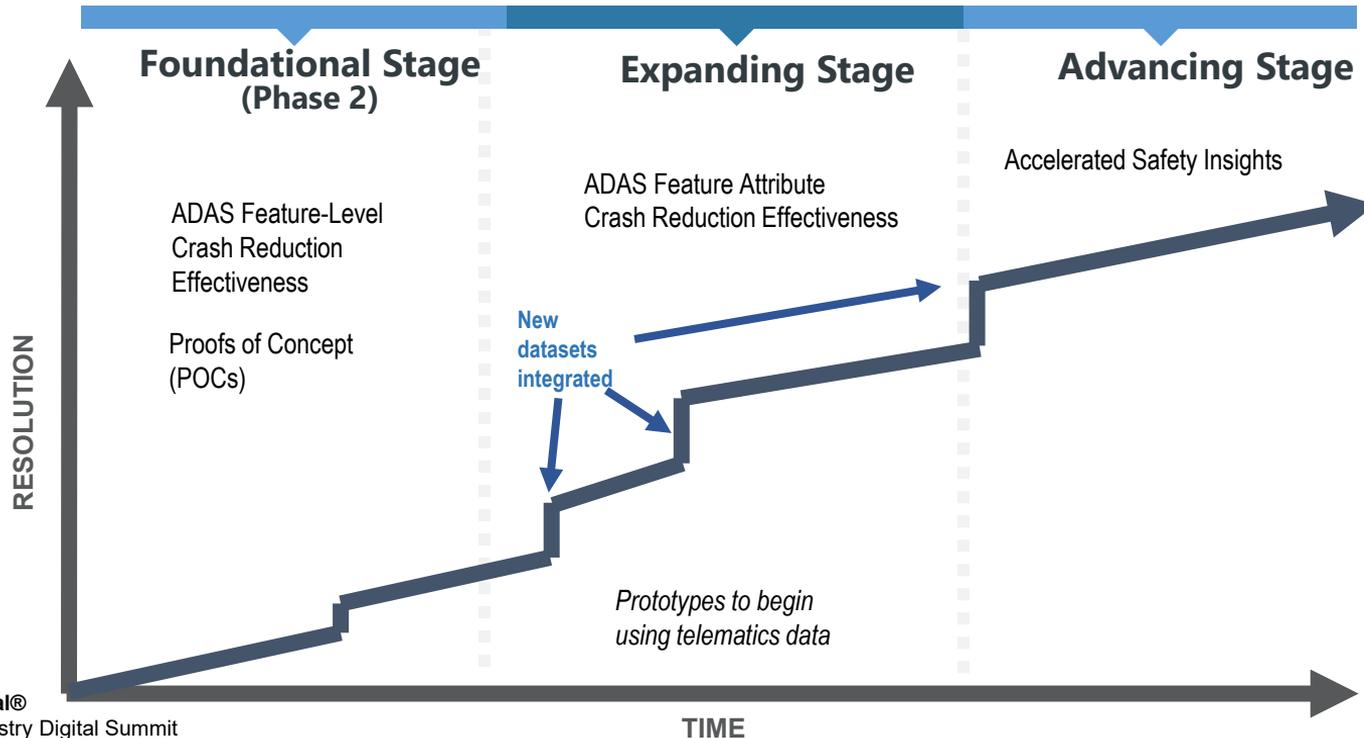
More Information on PARTS

Website:

NHTSA.gov/PARTS

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PARTS
Partnership for
Analytics Research in
Traffic Safety

PARTS, short for **P**artnership for **A**nalytics **R**esearch in **T**raffic **S**afety, is a partnership between automakers and the U.S. Department of Transportation's National Highway Traffic Safety Administration in which participants voluntarily share safety-related data for collaborative safety analysis. The goal of this government-industry initiative, which is operated by an independent third party, is to gain real-world insights into the safety benefits and opportunities of emerging advanced driver assistance systems and automated driving systems.

Current Study: What is the effectiveness of advanced driver assistance systems in real-world scenarios?

40 M	94	7
VEHICLES	VEHICLE MODELS INCLUDED	MODEL YEARS INCLUDED