CHANGING THE WORLD WITH AV
GM’s World View

GM is committed to a future of:

ZERO CRASHES

ZERO EMISSIONS

ZERO CONGESTION

Technology will help unlock this future
GM’S AV STRATEGY

OUR PLAN IS TO DEPLOY AUTONOMOUS VEHICLES:

IN
RIDE-SHARE FLEETS

AT
LEVEL 4 TECHNOLOGY

WITH
ELECTRIC POWERTRAIN

SAFER, CLEANER, MORE ACCESSIBLE TRANSPORTATION FOR ALL
OF ALL TRAFFIC ACCIDENTS ARE CAUSED BY HUMAN ERROR

94%

TRAFFIC ACCIDENTS ARE CAUSED BY HUMAN ERROR

* Source NHTSA, Fatal Accident Reporting System (FARS).
THE SELF-DRIVING HIERARCHY OF NEEDS

FOCUSED ON SAFELY GETTING CUSTOMERS WHERE THEY NEED TO GO

- Get me there safely
- Get me where I want to go
- Get me there smoothly
- Get me there cheaply
- Get me there quickly
- Entertain

Working on these concurrently
SYSTEMS DIVERSITY AND REDUNDANCY

**Self-Driving Computer**
The Cruise AV has two main computer systems operating simultaneously, so if the primary computer has a problem, the secondary system is there to take over.

**Vehicle Localization**
The vehicle’s location is estimated by many different methods, which means that even if the localization information from one system becomes unavailable, the vehicle can use localization information generated by other sources, such as from UDAR data or from our inertial tracking system.

**Electrical Power**
We have included redundant electrical power sources and power distribution for all important systems. Main power is provided through the high voltage electric vehicle battery. Should power from that battery fail, backup batteries will power all critical sensors, computers and actuators.

**Steering and Braking**
On our self-driving vehicles, the steering and braking systems have redundant motor actuators, electrical power and computer electronics so the vehicle can respond safely and keep performing during a failure.

**Signal Communications**
Communications between computers, sensors and actuators have an alternate path if the primary fails.

**Perception Sensors**
Sensor diversity provides confidence that the self-driving system can detect, track and classify objects around it. Field of view overlaps enable 360-degree vision even if a sensor fails.

**Redundant Collision Detection**
Our vehicle includes a crash-imminent braking system calibrated to work as a backup to the self-driving system that can apply the brakes to stop the car if necessary.

**Integrated Vehicle Health Monitor**
Keeps track of diagnostics for all self-driving systems in the vehicle and determines operating state of the vehicle.

**System Robustness**
All critical systems have been designed, tested and validated through intrusive testing, test track durability testing and extensive on-road mileage accumulation.
GM IS ONLY COMPANY BUILDING AVs IN AN ASSEMBLY PLANT
LEVERAGING GM EXPERTISE TO FULLY TEST AND VALIDATE AVs
OUR UNIQUE APPROACH

ONLY FULLY INTEGRATED DEVELOPER OF AVs WITH TRUE SCALE CAPABILITY

FOCUSED ON ACHIEVING SAFE FULLY DRIVERLESS DEPLOYMENT BY 2019

IN PARTNERSHIP WITH ONSTAR TEAM, FAMILIARITY IN WORKING CLOSELY WITH FIRST RESPONDERS