

# LIDAR SENSING PLATFORM FOR AUTONOMY

All lidar is not equal. Only Doppler lidar provides the range, signal-to-noise and real-world performance necessary for ADAS and autonomous vehicles to operate safely in real world conditions.

## Advanced Doppler Performance

Doppler lidar measures the frequency shift of returning light as opposed to the light's time-of-flight, increasing range and signal-to-noise performance 100-fold. For automakers this means fast, accurate ranging at extended distances in all weather regardless of light pollution from other sensors. Plus the knowledge of an objects direction and speed – critical information for moving vehicles.

## Configurable Platform

Only Psionic's **Sensing Platform** provides a configurable sensing platform adaptable to specific needs. Starting with a 360-degree 500m view, it allows creation of specified *areas-of-interest* (say expected lane of travel) and to focus more sensing power straight ahead.

Because Doppler lidar measures object direction and speed, additional sensing power tracks *objects-of-interest* moving relative to the vehicle, a technology known as **Smart Detection™**.

## Integrated at Inception

Psionic sensing platform is designed to be integrated into the car at manufacture and not extruding from the vehicle. Each system and performance component is entirely

configurable including static or dynamically defining *areas-of-interest* and *objects-of-interest* by the user, stack, or in combination with external or additional platform sensors such as RGB or thermal cameras.

## More than Sensing – Control

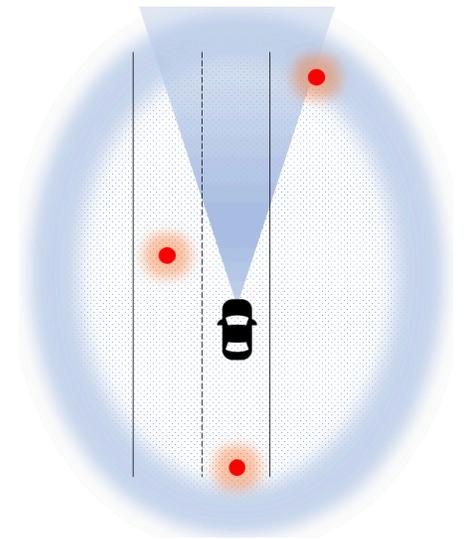
An entirely new capability, Psionic's patent-pending Reference Sensor™ measures vehicle driving state relative to the ground in real time. Sensing sub-second loss of control (weather conditions, driver error, in-motion collision) the vehicle can immediately and automatically execute **Control Recovery™**.

## Born in Space

Psionic's core technology was originally developed by NASA for the Mars Lander. It is a mature, production-ready mass manufacturable technology and economic at scale.

## Psionic for Safety

Whether utilizing Psionic's **Sensing Platform** for advanced AV perception, or in combination with Psionic's **Reference Sensor™**, automakers now have a safe, proven, reliable technology choice for their ADAS and autonomous vehicle product offerings.



<b>System FOV</b>	360 degrees, up to 16 vertical
<b>Transceiver FOV</b>	90 degrees horizontal
<b>Transceivers per System</b>	Configurable
<b>Angular Resolution</b>	0.1-0.25 degrees
<b>Range</b>	500m+
<b>Precision/Accuracy Range</b>	+/-15cm, zero bias
<b>Precision/Accuracy Speed</b>	+/- 0.25MPH, zero bias
<b>Scene Update Rate</b>	Configurable
<b>User Defined AOI</b>	Configurable
<b>Target Tracking Rate</b>	Configurable
<b>Beam Diversion</b>	Configurable
<b>Laser Class</b>	Class 1 Eye Safe
<b>Output per channel</b>	Distance, Speed, Direction, Timestamp

Safe. Reliable. Advanced.

**PSIONIC**