

# HARMAN INTELLIGENT PLATFORM



## Proprietary Machine Learning Algorithms to accelerate Connected Vehicle programs

Most design considerations and manufacturing operations in automotive are largely based on human experiences. Big Data in conjunction with Artificial Intelligence (AI) and machine learning algorithms is helping OEMs to increase the level of accuracy in decision making, analyzing vehicle performance and determining business outcomes. With a remarkable ability to discover hidden relationships among data sets and make contextual and relevant predictions, Machine Learning Algorithms have become an important component of emerging vehicle technologies.

HARMAN Intelligent platform includes machine learning algorithms to support a variety of connected vehicle solutions including personalization, Analytics, Driver Monitoring, and Vehicle Health and Diagnostics. More algorithms are being developed and refined every day. The development of machine learning algorithms requires significant data to promote learning and to validate results. Deploying pre-built algorithms requires significantly less effort and results in faster deployment times and lower cost. The platform's Over-the-Air (OTA) capabilities enable OEMs to continue to update and refine the algorithms once installed in the vehicles.

## A Spot Solution or Complete Platform

Algorithms are developed to support analysis and any single algorithm can be independently deployed in the vehicle or accessed from the HARMAN Ignite cloud platform. The HARMAN Ignite Platform can manage ongoing data collection, algorithm refinement and subsequent update of the software in the vehicle.

### Top-line Benefits

- Reduces time to deploy by using pre-defined solutions
- Focused on several vehicle functions
- Proven track record in the automotive industry for various vehicles
- Flexible enough to be deployed individually or through HARMAN Ignite
- Enables continued refinement of algorithms
- Offered as a subscription service

### Why HARMAN?

#### Shortening Time-to-Market

Shorten your time from concept to delivery using our best practices, turn-key delivery models and rich talent pool.

#### Cross-platform

Take advantage of our experience in multiple industry verticals and leading platforms to rapidly exploit new market opportunities.

#### Global delivery footprint

Our skilled, talented engineers deliver solutions to companies like yours from centers throughout the world.

#### Solution accelerators

Get access to leading edge innovation and best practice by using our solution accelerators and global pool of partnerships.

[www.harman.com](http://www.harman.com)

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## Features and Benefits

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Flexible deployment methods	Flexible for individual deployment or through HARMAN Ignite platform
Provides ability to update and refine based on additional data	<ul style="list-style-type: none"><li>• Enables building models that can be easily trained and optimized so that they can be deployed to any OEM system quickly.</li><li>• Predictive models can be built to discover critical information, such as traffic movement patterns, driving behavior, peak fuel usage, and vehicle component wear.</li><li>• Delivered through Over-the-Air (OTA) updates and managed for the entire vehicle with low processing and memory resources</li></ul>
Supports a wide variety of use cases	<ul style="list-style-type: none"><li>• Incorporate analysis results of customer feedback in social media, for example, text and tweet analytics. This helps in building vehicle and sub-systems performance for guiding future product design.</li><li>• Helps in detecting failure patterns by establishing a relationship between the failure and causes of failure.</li><li>• Aids in effective planning and execution of predictive maintenance. The platform also helps in accurate prediction of future failures.</li><li>• Incorporates analysis results and learns traits of user personality, thereby creating driver-specific and rider-specific profiles, which can then be leveraged to provide personalization and smart personal assistance.</li></ul>
Domain expertise	The data scientists at HARMAN are domain experts and are experienced in selecting the correct algorithms for any scenario in automotive. Once they define issues and business objectives, and validate the selected algorithm in terms of functionality and performance metrics, the HARMAN Intelligent platform can accurately demonstrate tangible business benefits.

## Partner with an industry expert

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HARMAN (harman.com) designs and engineers connected products and solutions for automakers, consumers, and enterprises worldwide, including connected car systems, audio and visual products, enterprise automation solutions; and services supporting the Internet of Things. With leading brands including AKG®, Harman Kardon®, Infinity®, JBL®, Lexicon®, Mark Levinson® and Revel®, HARMAN is admired by audiophiles, musicians and the entertainment venues where they perform around the world. More than 50 million automobiles on the road today are equipped with HARMAN audio and connected car systems. Our software services power billions of mobile devices and systems that are connected, integrated and secure across all platforms, from work and home to car and mobile. HARMAN has a workforce of approximately 30,000 people across the Americas, Europe, and Asia. In March 2017, HARMAN became a wholly-owned subsidiary of Samsung Electronics Co., Ltd.

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