



## INTELLIGENT PERSONAL DIGITAL ASSISTANT SOLUTION

### Easily deploy multiple Personal Assistants for different purposes

Personal Assistants can enhance the in-vehicle experience with full conversations to support complex requests. The results are reduced driver distraction, increased features and functions available through voice instruction, and lower learning curve with no need to remember "commands." There are multiple successful intelligent agents used in the market today, each with access to different sets of data and with different specialized focus areas. Together, their strengths complement each other.

Samsung Bixby, Microsoft Cortana, Amazon Alexa, and others are key cloud-based solutions in the ever-evolving world of Personal Assistants. Now, you can deploy multiple Personal Assistants in your vehicle with one integration. HARMAN Ignite provides the cloud orchestration and supplemental skills for OEMs need to achieve this type of deployment. This unique feature enhances the Voice Recognition and Natural Language Processing functions traditionally found in vehicles with the cloud-based features of popular Personal Assistants.

### Fully conversational solutions for the Vehicle

Intelligent Personal Digital Assistant Solution from HARMAN supplements Personal Assistants' cognitive services by adding skills focused on driver activities. Engaging a vehicle's cruise control or adding waypoints to a destination require some skill development for the various Personal Assistants. With HARMAN Ignite, the right skills are available to support in-vehicle or home-to-vehicle features (e.g., remote start, etc.), and the list continues to grow.

### Top-line Benefits

- Allows multiple passengers to use their preferred Digital Personal Assistant of choice
- Increases speed to market by using a pre-defined solution based on the HARMAN Ignite Platform
- Full conversations to support complex requests
- Reduces driver distraction
- Adds flexibility with multiple Personal Assistants
- Can be 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)

©2018 HARMAN INTERNATIONAL INDUSTRIES, INCORPORATED

This document is for informational purposes only. All rights reserved.

## Features and Benefits

---

Provides flexibility with multiple Personal Assistants	HARMAN Intelligent Personal Digital Assistant Solution helps to provide a combination of Personal assistants of preference in one vehicle
Uses real-time cloud-based data for better results	<ul style="list-style-type: none"><li>• HARMAN enables real-time data capture to be used for vehicle feedback-improvement loops and machine learning supporting personalization, contextual awareness and algorithm refinement (e.g., ADAS, autonomous driving, etc.)</li><li>• HARMAN abstracts the core elements of cloud-based Location Based Service (LBS), social media, audio, and other data streams to keep the in-vehicle components consistent while managing the ongoing changes required to keep connectivity with various cloud providers like Yelp, Trip Advisor, Twitter, Facebook and others.</li></ul>
Continuous development expands capabilities over time	<ul style="list-style-type: none"><li>• Second largest automotive R&amp;D budget in the world</li><li>• HARMAN's continued investment in HARMAN Ignite is focused on using the vehicle and driver data for predictive, prescriptive and machine learning training</li></ul>
Supports in-vehicle and home-to-vehicle functions	Some in-vehicle and home-to-vehicle functions that the solution can help to support: <ul style="list-style-type: none"><li>• Provide helpful reminders about the day's events</li><li>• Learns the driver's weekly routine, route preference, traffic statistics and suggest the optimum time to begin the journey</li><li>• Help sense the driver fingerprint and can set the parameters such as cabin temperature, seat position, entertainment options and more - even before the driver's journey begins</li><li>• Anticipates upcoming journeys and notifies about refueling needs and ideal fuel stations</li></ul>
Supplements embedded solutions with more capabilities	HARMAN has extended the use of Personal Digital Assistants by bringing settings to the cloud, adding more capabilities for personalization, enabling contextually aware features, enabling crowd sourcing of data to support recommendations, and leveraging settings for machine learning functions.
Low operating cost	<ul style="list-style-type: none"><li>• The solution is delivered through an integrated architecture that is designed to abstract services through remote configurability.</li><li>• The result is greater flexibility, reduced risk with end-to-end integration, minimize need for over-the-air updates, opportunities to monetize through third-party connections and, ultimately, lower operating cost for the OEM</li></ul>

## Partner with an industry expert

---

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.

Visit our website at [harmanconnected.services/intelligent-personal-digital-assistant](https://harmanconnected.services/intelligent-personal-digital-assistant)

