



## HARMAN AUTOMATED HMI DEVELOPMENT SUITE FOR AUTOMOTIVE

### Create state-of-the art HMI for vehicles effortlessly

Consumers have grown to expect the same type of connectivity that is provided on their mobile devices in their vehicles as well. Additionally, they expect an integrated experience across all the screens in the vehicle. In order to facilitate this type of rich user experience, HARMAN offers a new development suite.

HARMAN Automated HMI Development Suite for Automotive assists in the creation of connected, multi-screen and adaptive In-Vehicle Infotainment (IVI) systems. It provides the following components:

- **HMI Framework** – Provides a pre-established sub-system with a flexible architecture that allows the user to develop HMI more expediently while creating better user experiences.
  - Includes multi-screen support, allowing a unified user experience across all digital displays in the vehicle.
  - Supports rapid iterative design/deploy cycles so the HMI may evolve through time.
  - Permits reusable HMI business logic across different vehicle models and brands.
- **Tool Chain** - Allows the OEM to take and trace the end-to-end HMI process (leveraging Enterprise Architect, Doors Axure and Qt Creator; with additional plugins for code auto generation and UI design).
- **Software Development Tool Kit (SDK)** - Supports multi display solutions for the centerdisplay and rear seat entertainment systems using an HMI server.
- **Applications** - Provided as separate (downloadable) modules.

### Top-line Benefits

- Allows multiple HMIs to be developed based on the same state and business logic hence maximizing re-use as the platform evolves.
- Is flexible and supports various distributed system architectures like; Multi-SoC and Single SoC with Hypervisor.
- Creates stunning, high-performing and quickly adaptable UIs by allowing maximum HMI re-use at the requirements, wireframe and software development stages.
- Empowers rapid, continuous development that includes simulation, development on target devices and validation with test cases.
- Uses best in class tool chains to meet rapid, agile HMI development.

### 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

Multi – Screen Strategy	GUI Presentation Layer acts like a HMI Server. To scale the number of displays simply add more HMI processes with a specified display resolution.
One Business Logic, Multiple HMIs	Allows multiple HMIs to be developed based on the same state / business logic thereby maximizing re-use of code.
Single Code base	Permits OEMs to completely reuse their HMI for multiple brands but build the business logic just once.
One-stop solution supporting end-to-end HMI development	Framework has abundant built-in function modules, including 2D/3D graphical interface, multimedia, online communication, data storage, web engine, Bluetooth and GPS which reduces the cost and risk of technology selection and procurement.
Reduces development time	Professional UI design tool enhances cooperative work between designers and engineers, which significantly reduces the development period.
More efficient development, less design Complications	Pre-built optimization software stack has realized direct deployment of particular development panel applications which significantly reduces development time in early environment configuration and deployment in embedded development environments.
More artistic, stereoscopic and vivid interface	Abundant 2D and 3D graphics support, including seamless animation across displays, as well as tables. It also supports OpenGL ES 2.0. The 3D graphic system provides better user experience.

## Partner with an industry expert

HARMAN ([harman.com](http://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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