

## FREQUENTLY ASKED QUESTIONS

### GENERAL QUESTIONS

**Q: Who is OpenCar® and what do you do?**

A: Founded in 2011 and headquartered in Seattle, OpenCar has built the industry's first application development platform (OpenCar Connect) and developer ecosystem (OpenCar InsideTrack) to serve automaker's needs for tightly integrated, updatable, car-centric applications. With deep experience in core platform architecture and connected services, OpenCar is partnering with automakers, suppliers and developers to define new standards and tools to transform automotive application development and the in-car experience for drivers. The OpenCar Connect framework supports a broad range of automotive application categories including telematics, device control, health, safety, convenience, digital clusters and next-generation infotainment. OpenCar InsideTrack enables collaboration between automakers, tier 1 suppliers and developers from project proposal to post-SOP management.

**Q: Company stats?**

A: OpenCar is a boutique development house with offices in Seattle and Silicon Valley. OpenCar is privately held and focused exclusively on the automotive software market. All development is funded through customer activity.

**Q: What's the news today?**

A: OpenCar is launching its InsideTrack portal and services. InsideTrack completes the OpenCar platform suite, which also includes the OpenCar Connect embedded application framework and the OpenCar software development kit (SDK). InsideTrack provides tools and services that streamline the development of automotive-grade software applications with features such as online code certification and project and program management tools. InsideTrack enables automakers to identify and collaborate directly with developers to create custom applications, and to assemble custom application bundles for each global market, by country and language.

### CUSTOMERS / TRACTION

**Q: What is the nature of your relationship with Mazda and the status?**

A: OpenCar publicly initially announced our partnership with Mazda at CES 2014. Since that time, we have worked together on next-generation telematics and infotainment software and services.

**Q: Do you have other customers or partnerships to announce?**

A: OpenCar publicly announced a strategic partnership with Nuance in Japan in summer 2015. Two additional strategic partnerships will be announced soon. At this time, OpenCar has several active lab integrations underway, but cannot yet publicly discuss our customer relationships.

---

## PRODUCT / SOLUTION

### **Q: How is the OpenCar approach unique in the market?**

A: OpenCar offers the industry's only white label, standards-based application development environment and execution framework that targets automakers, their tier 1 suppliers, and third-party developers. The framework and SDK provide a common platform that all parties can use to quickly develop and maintain automotive-grade applications for vehicles. The platform supports all stages of the vehicle lifecycle, including production applications that ship with new vehicles from the showroom, and new applications that may be introduced long after vehicle purchase, for installation over-the-air.

OpenCar application development is complemented by InsideTrack Life Cycle management and collaboration services. InsideTrack enables application developers to create and merchandise true automotive applications that can utilize vehicle sensor data and interact with common automotive features. Automakers can filter by language, country and categories to discover new applications.

OpenCar applications automatically inherit all of the brand-specific graphical, touch and voice interfaces of each automaker. This unique capability empowers automakers to build and maintain powerful, rich user experiences (UX) that satisfy consumer demand for a rich variety of applications. Drivers control new applications just as they control "native" features like radio and comfort systems. On-screen controls, steering wheel & bezel buttons, and voice commands work identically with newly downloaded applications as they do with native features. This critical feature allows automakers to continue to differentiate their brand while ensuring safe, uniform interactions with a variety of value-added applications.

### **Q: What does the "Open" in OpenCar mean?**

A: "Open" means we embrace a development process that uses familiar programming tools and methods common to the open standards community. This includes transparent access to most source code, so developers can see how the pieces fit. It also includes open collaboration and consistent, predictable application programming interfaces (APIs) that match the style and grammar of popular open source tools. The goal is to encourage use of the framework and tools to create new and valuable automotive applications.

The OpenCar Connect framework is not free to use commercially, however. As a private company, OpenCar has over 60 developer years invested in the current product, and automakers routinely require additional development and support over the life of each vehicle.

Here's how it works: no payment is required to embed and ship the OpenCar framework in a vehicle. When the OpenCar framework is first used by an application, a one-time royalty must be paid by the automaker to OpenCar. This small per-unit charge enables OpenCar to continue development of the framework, SDK and services that make the platform valuable to automakers.

## VALUE PROPOSITION

### **Q: What are the challenges of developing dynamic automotive applications?**

A: The current industry model for bringing applications into vehicles has focused on static, on-board functionality. For example, the behavior of FM radio has not changed fundamentally for decades, and thus the code that defines that behavior is typically “hard-coded” and not easily extended. However, today’s cars are now Internet-connected, allowing our predictable FM experience to be extended – presenting album artwork, lyrics, similar stations, song tagging, social sharing, seeding of streaming sites, purchasing options, and a host of other options that will become obvious over time. The only practical way to extend the trustworthy FM radio experience is to modularize it and make it part of a dynamic framework. The only practical way to “future proof” FM radio is to make it an application.

This approach is very different compared with the current “finite state machine” paradigm typically used in embedded products like automotive infotainment systems. The state machine model assumes all requirements are known in advance and new functionality will not be required over the life of the product.

The alternative is an “atomic” approach involving individual applications and an adaptive hierarchy manager that establishes new relationships as applications are loaded and unloaded. This approach has clear business advantages, but requires careful organization and reliable support code in order to achieve the reliability of a fixed state machine.

OpenCar has invested almost 60 developer years in the construction of the OpenCar framework to achieve this goal. The architecture and code have been tested many times using every conceivable use case. Test applications torture the components at each layer in the integration; ensuring API-compliant code will not encounter failures from the framework or middleware components. This disciplined approach ensures that OpenCar’s atomic load and execution model runs reliably as a fixed state machine, while simultaneously achieving enormous flexibility. In sum, the OpenCar platform is the industry’s first and only automotive-grade framework prepared to accommodate the currently unforeseen requirements of future connected cars.

### **Q: Why do developers use your platform?**

A: Both Apple and Google have built complete, end-to-end platforms that meet the business and technical needs of application developers, consumers and, of course, Apple and Google. Developers are provided effective smartphone development environments, each company’s respective application store serves as a vending outlet for submitted applications, and consumers utilize application store interfaces to discover, buy and maintain applications.

In the automotive industry, the presentation and organization of driver-accessible features is a very serious topic. While offerings like Android Auto and Apple CarPlay promise uniform access to a select set of smartphone applications, they do little to achieve the larger business goals of the auto industry. The in-car user experience is a key differentiator going forward. The development and integration model used to date has

required automakers to anticipate future trends, establish contracts with content providers and developers, design and build bespoke applications, integrate those applications in a rigid way – and then repeat the entire cycle when it is time for an update. The aggressive programs have delivered an average of 10 connected applications, and those applications are rarely updated.

The current approach is clearly ineffective, in part because the process is inefficient and the incentives to developers and automakers are inadequate. In order to meet the demand for a true automotive development environment for dynamic applications, several conditions need to be met: application developers must be provided with development tools and business processes that meet their needs and automakers must have specialized tools and processes that enable complete control over the end-user experience.

To accomplish this, OpenCar carefully crafted a framework that enables developers to build applications that dynamically adapt to any automaker interface requirements. Separately, OpenCar created highly specialized tools that empower automakers and their tier 1 partners to build rich and powerful HMI (Human-Machine Interface) profiles that best represent their brand and specific user experience goals. This unique approach allows developers to develop applications that work in many different types of cars, yielding economies of scale that the previous model could not provide. And as the universe of OpenCar-compliant applications grows, the value to each automaker will grow as well, thereby increasing adoption.

The service we are announcing today, InsideTrack, along with the OpenCar SDK, simplifies the process of developing applications, and empowers both application developers and automakers to re-use their code across many models of cars.

**Q: What types of applications are supported by the OpenCar platform?**

A: The OpenCar Connect platform supports the full spectrum of applications across categories including telematics, device control, health, safety, convenience, digital clusters, and next-generation infotainment. Automakers are increasingly turning their attention to car-centric applications that support each vehicle's unique positioning and distinguish each brand in a competitive and increasingly commoditized automotive marketplace.

## COMPETITION

**Q: Who are your competitors?**

A: OpenCar provides a complete application environment with low-level access to vehicle data and head unit resources. It's built "from the ground up" to support automaker-specific UX, letting applications seamlessly adapt to the unique personality of each car. In the past, this has been the domain of the tier 1 suppliers, but the integration model used to date can no longer keep up with consumer and automaker demand for new features and updates.

Tier 1 suppliers are increasingly turning their attention to high-performance safety functions including Advanced Driver Assistance Systems (ADAS). At the same time, Google and Apple have introduced Android Auto and CarPlay, two systems that bring simplified versions of Google and Apple's branded interfaces to

automaker's dashboards. In the near term, these offerings fill a void for smartphone-based infotainment programming, but they do not meet each automaker's competitive need to offer a differentiated user experience.

The OpenCar platform is positioned to fill automaker and tier 1 supplier needs for a stable framework, tools and processes from which to build next-generation user experiences that are unique, fast, robust and secure in Internet-connected vehicles.

**Q: What about Google and Apple?**

A: OpenCar's platform is complementary to the offerings from Google and Apple, and others, where the focus is primarily on bringing mobile infotainment applications into the car. Though the platform could easily be used to create competitive applications, OpenCar is not focusing on this segment of the application marketplace. We support Automaker's desire to develop customized, car-centric applications that enhance their brand.

## MISCELLANEOUS

**Q: What is your business model? Who is your buyer?**

A: OpenCar licenses the OpenCar Connect platform to automakers.

**Q: How does OpenCar fit in with the consortium driven open standards initiatives, such as GENIVI, W3C, AGL, etc.?**

A: With Intel, OpenCar co-chairs the W3C Automotive Business Group and Automotive Working Groups – the industry's leading efforts to standardize vehicle data interfaces for application developers. This standards-based effort currently involves over 150 participants from 65 automotive companies.

OpenCar is also a long-term member and active participant in the GENIVI community.

**Q: How do you address security issues?**

A: The OpenCar framework architecture, code, and target system integrations are routinely reviewed by several outsourced "black hat" security service providers, yielding findings that are then used to further secure the framework libraries and methods. As a result, we are confident that the OpenCar framework currently qualifies as the most secure connected application execution environment in the automotive industry.

## PRESS CONTACT

Beth Levine  
206-612-9967  
bl@opencar.com