



## How Autonomous Vehicles will Transform the In-Car Voice Assistant – Part 2

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In [part one of this series](#), I outlined how voice assistants will play an important role in autonomous vehicles, particularly when it comes to mobility-as-a-service, transforming automotive cabins, and expanding sensor-based capabilities. Read on for more on what we can expect from automotive VAs in the increasingly connected and autonomous vehicles of the future.

**Multi-Modality.** Providing drivers and passengers with various possibilities for interaction has enormous potential for improving UX in AVs. At CES 2020, Cerence displayed our intent to lead the world of multi-modality for AVs by displaying how voice technology can be combined with hand gestures to [grab and swipe](#) things onto a smart windshield. We also showed how [Cerence Look](#), our gaze detection technology, enables the VA to better understand a user's intention and, for example, when a driver asks, "how much does that hotel cost per night?" while looking at a hotel, reply "A stay at the hotel costs between 100 and 150 euros per night." This provides a glimpse into how multi-modal interaction can contribute to a future of fluid autonomous transportation experiences.

**Voice Commerce.** It is often said that eye level is buy level, and with AVs enabling a world in which eyes will no longer be required on the road, the in-car UX will soon be open for further opportunities for retailers as online shopping for the next killer outfit becomes a regular feature of our daily commute. Cerence has already geared up for the boom of in-car commerce, recently introducing [Cerence Pay](#) to ensure drivers are able to perform safe and secure transactions for parking, fuel, charging, food, and more via voice. Furthermore, with [Cerence Tour Guide](#), drivers can even book tickets for events and local attractions via voice. Beyond drivers' typical in-car needs, the emergence of location-based advertising and geotargeting will also provide brands with the opportunity to dynamically personalize advertisements both inside and outside the car, similar to what we currently see on social media platforms. Imagine this: during your two-hour morning commute, you might soon be seeing your favorite football team's brand new shirt on the side of a nearby building, or an airfare deal for that summer holiday you've been longing for popping up on your windshield. The world of AVs will change the road into a virtual, interactive superstore.

**The Virtual Voice.** An interesting trend we're seeing in futuristic concept AVs is to provide VAs with a distinct visual appearance. In recent years, we have seen how VAs can be brought to life, from anthropomorphic-centered designs such as [Mitsubishi's robot-like concept](#) and [Toyota fun.vii's](#) human-like assistant to a more abstract hologram approach as seen in the [VW Vizzion](#). The benefits of having a more "physical" representation of VAs are clearly seen when looking in scientific research, especially when it comes to conveying system transparency and consequently increasing trust in AVs. Considering such trends, do not be surprised if one day you open your car and have your own virtual companion sitting on your dashboard ready to follow you every word.

With all that's on the horizon, you can rest assured that your in-vehicle "voice" will not be lost in the future; if anything, the possibilities for voice assistant usage will only continue to grow with increasing technological advancements, vehicle automation, and vehicle connectivity. So, whether you want to make in-car changes to your smart home or just want a digital friend to chat to during your long commute home, there will more than likely be a voice assistant for you. "Now Cerence, read the next blog post and activate relax mode."