



## Gesture Controls Point to the Future of Automotive Controls

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By Lynn Walford

Gesture controls similar to XBOX gaming or like the "Minority Report" are coming to cars in the future with hand gestures to control music, climate, and other functions.

There are different levels of how far gesture controls can be incorporated into controlling a vehicle. I recently saw three demos of gesture technology in varying degrees of implementation, BMW iDrive, Volkswagen Golf R Touch concept, and Visteon's Semper Novus cockpit.

"Suppliers have studied gesture technology closely, and consumers who have been trained on how gesture works, quickly adopt the technology and prefer it to lengthy menus or touch screen interactions, for certain functions," reports Mark C. Boyadjis Senior Analyst & Manager, IHS, who notes that the trend of gesture use in cars is driven by the presence of gesture recognition in consumer electronics.



### A Few Pointed Fingers from BMW

In the new iDrive system, BMW adds a few gesture controls to other ways to control features including a touchpad in the center of the console and the touchscreen above the air vents. A 3D sensor in the roof detects whether one or two fingers are being pointed or a hand is swiped to initiate a function.

A developer for BMW gave a demo of the next generation iDrive with gestures similar to smartphone gestures at CES. The simple hand and finger gestures are meant to simplify basic entertainment and phone features. The climate controls are separate hard controls while hand gestures are used for short cuts, phone functions or circling in the air with a finger to increase volume. With the BMW system, you point to accept a call or swipe no to decline the call. Striking two fingers can be designated by the driver from a list such as strike two out for navigation or to turn the display off.

### Big Hand Movements for Volkswagen Golf R Touch

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The Volkswagen Golf R Touch concept car uses gesture controls to control infotainment and other features. The gesture controls incorporate arm gestures, such as pulling a hand over the driver's head opens up the sun roof. Hands up and down movements open or close the windows. A camera in front of the center stack converts the driver's hands movements to car functions. The touchscreen gives the driver feedback via haptic feedback, the screen vibrates and makes a noise.

Volkswagen claims that the infotainment unit uses cameras to not only detect hand gestures, but understands and assigns meaning to them. These gesture controls make it possible for drivers to control displays and functionality without having to use a touchscreen. When the drivers holds up a hand, it can point to something in the control center, to select something the driver can "air click it" to activate it. The sensors are proximity-aware, only illuminating and activating their icons when a hand is nearby, adding context to actions and reducing the amount of unnecessary ambient light in the car at night.

Holding a hand over the shift knob causes the car to recognize the hand. VW contends the system offers control without requiring a look away from the road, reduces driver distraction and creates a closer relationship with the car.

### Visteon Semper Novus is "Always New"

The Visteon Semper Novus cockpit demonstrates a more distant future of car controls. The system can be upgraded by adding a module. A camera tracks the eyes of the driver to highlight objects on the screen below the wind shield, such as the song tracks available. Since eyes are not on the road, eye control is more likely to be used in autonomous cars. Twisting an imaginary knob raises or lowers numbers or audio volume.

When Visteon tested the earlier Horizon gesture control cockpit in its [research clinic](#). 70% showed a strong interest in a virtual volume knob in their next vehicle, stating that it was easier and more convenient than searching for a traditional volume knob.

### The Future of Gesture Tech in Cars

Boyadjis says that one challenge for gesture technology in cars is that consumer adoption will require user learning, which could take some time. Early systems will be the test beds for the development of gesture recognition platforms. The IHS Global Automotive Forecast for basic gesture technology in cars with the launch of 2016 BMW 7-Series is expected to be 22K unit sales in 2015, and 4.3M unit sales in 2021. IHS predicts that advanced gesture recognition with two sensors and multiple types of swipes will launch in 2017 or early 2018.



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