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NEWS RELEASE

Digital displays enable feature updates over-the-air

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Visteon's Platform Delivery Manager Saminathan Venkatasubramanian was recently featured in **Auto Parts Asia** to share his thoughts on cockpit electronics trends and Visteon's market position.

Until recently, exterior design, engine power and fuel efficiency determined a vehicle's success. Today, consumers lead a digital lifestyle with a connected, contextual and personalized experience and expect a vehicle to offer much more than transportation – they want a best-in-class experience.

Automakers are responding consumer's expectations by incorporating a new generation of intelligent cockpit electronics systems – such as digital instrument clusters and connected infotainment systems – with large, intuitive displays that mimic the performance of consumer devices.

The advantage of an **all-digital cluster** is that it enables vehicle manufacturers to add or update a feature over-the-air, rather than developing a new instrument cluster. It makes it easy for OEMs to change the color of the drive mode or introduce new graphics, ensuring the cluster is updated and upgraded frequently.

Infotainment systems are also becoming increasingly connected to the internet through built-in connectivity modules or smartphones. In the mass market segment, we see a fast migration from commodity audio to display audio. In the case of display audio, mirroring solutions such as CarPlay and Android Auto are fast gaining popularity, given the ease of operation owing to a familiar interface. In the luxury segment, infotainment systems

are loaded with features such as built-in connectivity, haptics, voice assistance, etc., thus offering a lot of convenience options to the end-user.

Based on an automaker's preference, the infotainment system can either be based on Linux (Phoenix) or Android (Pie). Visteon's Phoenix infotainment platform is enhanced with a powerful simulation tool chain called Phoenix Studio for developers to develop apps using HTML and JavaScript, while the Android infotainment platform is based on Android Automotive. Both platforms are designed to unlock innovation by enabling third-party developers to create apps easily while delivering built-in cybersecurity and over-the-air updates.

In addition, we are working with a number of global vehicle manufacturers to host an app store to support third-party apps and meet regional needs for both Android and Phoenix-based IVI platforms.

WHAT IS THE NEXT FRONTIER OF COCKPIT ELECTRONICS?

We are now building **cockpit electronics systems** that converse, understand, entertain and safely take the occupants to their destination. Furthermore, with the increase in the levels of automation, the cockpit will transform into a smart, learning, mobile assistant. The system is always connected, automatically updates/learns in the background, and provides contextual information to the passengers via their smart devices, vehicle interface and the cloud – improving safety.

The smart cockpit leveraging machine learning for voice and image recognition was demonstrated at CES this year. Visteon has developed an in-vehicle conversational smart assistant for voice recognition called "Say 'n Serve," which is designed to use natural language processing for on-board or off-board commands in vehicles without always needing cloud connectivity. In addition, we also demonstrated a driver monitoring solution called "See 'n Sense." This is an in-cabin monitoring solution for head pose detection, gaze detection and identification capabilities that are key for enhanced safety.

It is interesting to note that the intelligence of the cockpit is powered by software. The extent of connectivity modules, graphical interfaces, intuitive interaction (gesture, voice, touch, haptics) and the level of autonomy will influence the number of lines of code in the vehicle. Our technical centers across the globe are a powerhouse for software development and contribute significantly to the new user experience introduced by global OEMs.

Read the full article as featured in **Auto Parts Asia**.

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