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NEWS RELEASE

Video: Integrating driver monitoring with Visteon's 4K instrument cluster

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Appearing as one of the highlights at Visteon's 2018 CES® showcase, a new 4K-by-1K instrument cluster concept integrates – for the first time – driver monitoring infrared cameras for facial recognition and head and eye-gaze tracking, which will be important to assessing driver readiness to resume control of an automated vehicle. The cluster also features integrated side-view e-mirrors for improved monitoring and awareness of the vehicle's surroundings.

As the global market leader in digital instrument clusters, Visteon's new cluster concept addresses one of the most challenging use cases in autonomous driving - the transition between manual and automated driving mode.

The cluster is designed to provide a large high-resolution solution that incorporates driver monitoring and ADAS virtualization, utilizing a 4K-by-1K high resolution 20.3-inch color TFT display with local dimming backlight, offering good contrast ratio and high image quality. Two additional 7-inch screens – placed on either side of the main display – integrate infrared and color cameras for digital side mirror functionality.

Watch Paul Morris, display product manager, demonstrate the features and autonomous use cases of the 4K cluster concept:

The cluster combines the large high-resolution display with integrated driver monitoring infrared cameras and digital side mirrors, demonstrating Visteon's systems capabilities with seamless cohesion of multiple lens and 'hidden behind glass' cameras, among other features.

The autonomous transition to ‘assisted driver’ mode is enabled by the driver monitor camera system which is able to confirm a driver’s state (awake, alert, attentive) and if they are ready to assume control of the vehicle. The head/eye-tracking functionality enables placement of vital driver information to be presented in the appropriate location, specific to the individual driver.

Other features of the driver monitoring cameras include Cloud-based applications where the system takes pictures using the integrated cameras which are then sent to the Cloud in order to process facial identification which can establish the mood of the driver. If the driver is, for example, stressed, the system can be adapted to change settings in the vehicle’s HMI or alter the music being played - producing a more appropriate response to ensure that the vehicle is aware of what the driver is doing at that specific time.