How Integrated Cockpit Controller Streamlines Driver Experience

Global automakers are designing and transforming the vehicle **integrated cockpits** with advanced features. Most of these features are influenced by the cutting-edge technology that consumers use on a daily-basis. The context that the cockpit future is evolving has driven the automotive industry towards automation. This future cockpit integrates advanced safety features and **android auto infotainment system** to streamline driver experience.

For a growing number of fleet operators, integrating cockpit controllers and redesigning the in-cabin driver experience has become a priority. To deliver enhanced levels of comfort to the driver which encompasses safety regulations and awareness of the new technology to promote a reduced accident risk includes seamless adoption of smart systems.

The new generation of **Integrated Cockpit** Controller (ICC) is handling these issues and offering a compelling driver experience through the following features:

- ***High-Definition Displays***

High-definition head-up display (HUD) first came into functionality in fighter aircrafts, which was later adopted by the automotive industry. The HUD comes in a transparent display projecting multiple useful information into the line of sight of the driver, such as navigation system, obstacles, motor speed, to name a few.

The display information does not cause any distraction and still all the vital information required while driving the vehicle can be accessed. HUD is highly customisable and it can be tailored in terms of size and colour to streamline the driver's experience. Moreover, it eliminates driver's fatigue because HUD takes off the struggle of searching for vital data and focuses more on the road.

- ***Automotive Infotainment System***

Automotive infotainment systems encompass the software and hardware, which offers the video and audio information as well as entertainment. It plays a crucial role in keeping the

driver engaged and entertained throughout the vehicle journey.

The former automotive had a cassette and CD system to serve the same purpose, but with the advancement in technology, vehicles now have HD touch screens and enhanced connectivity options, such as Bluetooth, WiFi and USB.

HD screens are housed into the motor's dashboard, which allows the driver to gain easy and quick access through both remote controlling it and using the touch screen option.

- ***Navigation System***

The navigation system in automobiles uses satellites to find the location of any person or place. This system also provides data on other vital aspects such as traffic, shortest route, nearby emergency service, hotels and petrol pumps, among others.

Moreover, with the advancement in technology, **integrated cockpit** controllers, navigation systems can be accessed in two forms, 2D and 3D. While this information is fed and displayed through the HUD, drivers can access the desirable data at their line of sight, without being distracted from the road and keeping safety as the priority.

- ***Smart HVAC Controller***

Nowadays, the heating, ventilation and air conditioning (HVAC) controller is fitted in every vehicle. As the **integrated cockpit** controller introduced smart HVAC that uses advanced temperature controllers, it incorporates heat sensors installed inside the car cabinet to detect the car temperature. Further, the HVAC system sends the data to the programmable controller, which adjusts the surrounding temperature accordingly.

- ***Smart Voice Assistant***

Integrated cockpit controller offers the feature that manages various tasks in the automobile, hands-free using the smart voice assistant. This feature has gained more popularity than even the smartphones considering its ease of controlling video and audio information.

Adopting this technology, OEMs are pacing ahead with connecting vehicles with voice assistant systems to take driving experience to a whole new level. It not only makes the driver focussed on the road but also makes them aware of the potential road safety hazards.

- ***Embedded Virtualization***

Integrated cockpit controller encompasses the power of a virtualized standalone system, which incorporates various functions of the vehicles such as telematics, diagnostics and **infotainment in automotive**. These functions are used by OEMs to integrate multiple electronic system units (ECU), which in turn control the vehicle's electrical system.

This system of embedded virtualization enables multiple operating systems to run on a single targeted hardware. It is not just the utilization of all the hardware resources in an efficient manner but also streamlines the driver experience with access to entertainment and vital data at the same time.

The automotive industry is focusing on development of the cockpit controller to assist in the navigation and transforming into an integrated driving experience. This demands the support of specialists to introduce innovative technology and drive product development. Sasken is one of the companies that has played a pivotal role in developing Linux, AGL & Android based IVI Systems for OEMs. Sasken offers an enhanced in-cabin experience with its leading-edge technology.

With a strong technical team and expertise in varied segments of **integrated cockpit** controllers, Sasken has developed an ecosystem relationship with chipset vendors, third party software and manufacturing partners. Sasken has a broad solution offering of Mobility and Applications such as High Precision Vehicle Tracking, Specialized apps for head unit, Native/Hybrid Consumer apps, virtual assistants and more.