



NEWS RELEASE

How Safety Regulations Are Redefining Truck Architecture

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The commercial vehicle industry is undergoing one of its most significant transformations in decades.

Europe remains the industry's primary regulatory catalyst, with GSR2 (General Safety Regulation), Blind Spot Information Systems, Moving-Off Information Systems, Camera Monitoring Systems, Vulnerable Road User Detection, Direct Vision initiatives and EURO NCAP 5-Star safety targets accelerating adoption of ADAS, cameras, digital cockpits and centralized computing architectures.

This momentum is being mirrored across other regions. In North America, NHTSA-led safety initiatives and Advanced Emergency Braking (AEB) are shaping the next generation of commercial vehicles.

Across Asia, China is expanding active safety mandates through GB 7258 (Motor Vehicle Safety Technical Conditions) and AEBS requirements, while Japan and South Korea continue to advance ADAS adoption through UN-ECE aligned regulations. India, meanwhile, is strengthening vehicle safety requirements through the Central Motor Vehicles Rules (CMVR) and Automotive Industry Standards (AIS).

European heavy-duty truck platforms have traditionally set the pace for safety and technology innovation, with developments eventually influencing global markets and cascading across medium-duty trucks, buses, and light commercial vehicles.

While regulatory priorities may vary by region, the direction of evolution remains consistent: safety is increasingly influencing vehicle design and accelerating the adoption of intelligent technologies.



Regulations that were once viewed primarily as compliance requirements are now influencing how trucks are designed, how information is presented to drivers, and how different vehicle systems interact.

And this evolution is fundamentally reshaping truck architecture.

The Biggest Redesign in Decades

Traditional truck architectures were built around largely independent systems, with clusters, displays, cameras, and safety functions operating separately. Today, commercial vehicles require these technologies to work together in real time.

Information from cameras, driver assistance systems, displays, connectivity solutions, and vehicle software is increasingly delivered through a unified digital cockpit. Instead of isolated functions, modern trucks rely on coordinated systems that enhance driver awareness and simplify information delivery.

For drivers, that means improved visibility and reduced distraction.

For automakers, it means managing greater complexity more efficiently.

Cameras Are Becoming the New Mirrors

Perhaps nowhere is this transformation more visible than in vehicle vision systems.

A truck driver operating in urban environments must simultaneously monitor pedestrians, cyclists, surrounding traffic, and multiple blind spots. Traditional mirrors alone are no longer enough.

Modern commercial vehicles are increasingly adopting:

- Front ADAS cameras
- Surround-view systems
- Driver monitoring
- Blind spot and object detection capabilities
- Moving-off assistance
- Rear visibility technologies

These technologies are changing how trucks "see" the world around them and helping improve protection for vulnerable road users. Regulations such as UNECE R151 and R159 are accelerating this transition.

Integration Is Becoming the Real Challenge

For automakers, compliance is only part of the challenge.

The real opportunity lies in bringing increasingly sophisticated technologies together to create a seamless driver experience that improve safety, enhance driver productivity, and simplify vehicle architectures. Success will not only depend on adding more features, but on building architectures that remain flexible as requirements continue to evolve.

As safety systems become more advanced, managing them through standalone electronic architectures become increasingly complex. This is accelerating the industry's shift toward centralized computing platforms and is driven by the need to handle growing software complexity, enable proper over-the-air (OTA) and support transformation of electric propulsions.

Cockpit Domain Controllers (CDCs) are emerging as the digital backbone of the modern truck cabin, bringing together displays, camera feeds, driver information, and safety applications into a unified platform.

By consolidating functions, automakers can reduce complexity, improve system coordination, and create a scalable foundation for future software capabilities.

The result is not just a safer vehicle.

It is a smarter one.

That's where Visteon plays a critical role.

Enabling the Next Generation of Truck Architectures

As a leading provider of cockpit electronics, Visteon enables OEMs to bring together:

- CDCs
- Digital clusters and displays
- ADAS camera systems
- Driver information and safety applications
- Software-defined cockpit architectures

By delivering scalable solutions, Visteon helps customers address evolving regulations while creating a foundation for future innovation because the future of commercial vehicles is not simply about complying with regulations.

It is about using safety as a catalyst for innovation and building intelligent cockpit platforms that will define the next generation of connected trucks.

Safety regulations are no longer changing features. They're changing architectures.