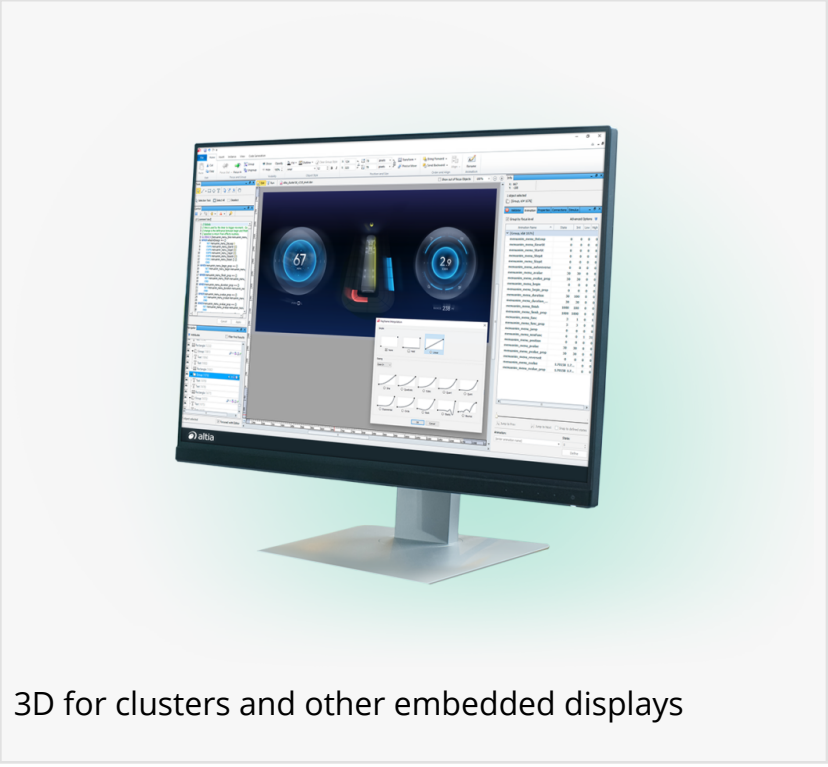
New 3D for Embedded Realism: The Integrated Power of PBR, IBL and HDRI for Next-Generation HMI

Altia tools provide new tool flow for getting higher quality embedded 3D into production vehicles and devices.



3D for clusters and other embedded displays

COLORADO SPRINGS, CO, UNITED STATES, December 5, 2025 /EINPresswire.com/ -- Altia announces enhanced capabilities for in-vehicle 3D interfaces with its advanced Physically Based Rendering (PBR), Image-Based Lighting (IBL) and High Dynamic Range Imaging (HDRI) technologies. These integrated rendering techniques bring realism to automotive HMI, simulating how light interacts with materials and environments for lifelike, high-fidelity displays.

By combining PBR's material accuracy, IBL's natural lighting from 360° environment maps and HDRI's rich brightness and color depth, Altia delivers efficient yet rich realism optimized for embedded targets. Designers gain the ability to visualize materials and reflections as they appear in the real world—without the manual lighting setups or performance trade-offs of traditional rendering pipelines.

"This is visual realism engineered for production," said Mike Juran, Altia CEO. "We've taken the best of modern rendering techniques and tuned them for the performance and predictability automotive OEMs demand."

Why It Matters:

- True-to-Life Lighting: Natural reflections and illumination captured from real environments.
- Physically Accurate Materials: PBR simulates surface response to light for authentic visual depth.
- Optimized for Embedded: Delivers premium visuals without sacrificing performance.
- Faster Design Workflow: Automatic lighting realism reduces setup time.

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>
> *Mike Juran, CEO of Altia*

• Next-Gen Cockpit Appeal: Sets a new bar for in-vehicle 3D experiences.

Discover how Altia's integrated rendering technologies bring next-generation realism to production HMIs at www.altia.com.

About Altia

Altia is a software company that provides graphical user interface design and development tools that can be used from concept to final production code. Our GUI editor, Altia Design, offers development teams the capability to implement a model-based development process enabling clear team communication and accelerated user interface development. Our code generator, Altia DeepScreen, supports a vast range of low- to high-powered processors from a variety of industry-leading silicon providers. Altia generates pure C source code that is optimized to take full advantage of hardware resources. Graphics code generated by Altia is driving millions of displays worldwide – from automotive instrument clusters, HUDs and radios to thermostats, washing machines and medical devices.

Our mission is to get the best automotive, medical and consumer interfaces into production in the shortest time on the lowest cost hardware.

Altia was founded in 1991. Its customers include automotive OEMs and Tier 1s like Continental Automotive, Denso, Stellantis, Ford Motor Company, General Motors, Honda, Hyundai, Renault, Valeo, Visteon and more – plus leading consumer device manufacturers like Electrolux, Whirlpool, Medtronic, NordicTrack and many others.

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