



ArgusCore SC™

OpenGL SC 1.0.1 / SC 2.0 Graphics Drivers for Safety Critical Systems

CoreAVI's **ArgusCore SC™** a suite of real time OpenGL SC 1.0.1 and OpenGL SC 2.0 scalable graphics drivers that are designed to enable the best performance capabilities of lower and higher powered graphics processors and achieve the highest levels of safety critical certifications, including FAA DO-178C / EASA ED-12C Level A, ISO 26262 ASIL D and CENELEC EN-50128 SIL 4 certification.

Proven, Avionics Certified and Flying Today

The **ArgusCore SC** family of products are industry proven solutions that have successfully achieved rigorous avionics FAA/EASA certifications and are currently deployed in civil, commercial and defense aircraft display systems worldwide. Today, the products are being deployed by avionics manufacturers from 23 different countries into a wide range of avionics display systems, such as primary flight displays, multifunctional mission computers, UAV ground control stations, and synthetic vision enhancement systems.

ArgusCore SC1™

CoreAVI's ArgusCore SC1 drivers are a superset of Khronos' OpenGL SC 1.0.1 API specification (OpenGL for safety critical applications). The OpenGL SC 1.0.1 graphics libraries are implemented to support a fixed function graphics rendering pipeline. Today, CoreAVI's ArgusCore SC1 libraries are used extensively in certified avionics display systems utilizing fixed function safety critical graphics applications.

ArgusCore SC2™

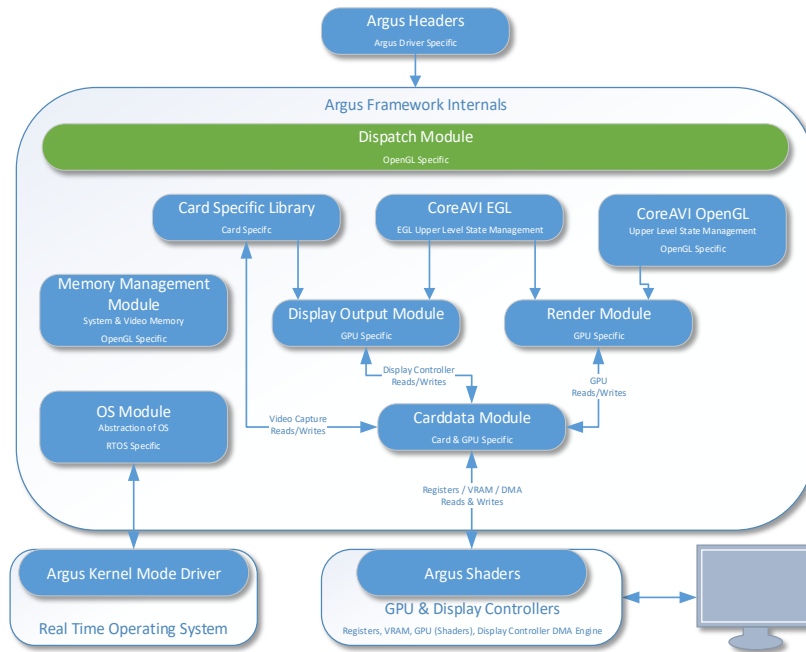
CoreAVI completed and deployed the industry's very first OpenGL SC 2.0 graphics driver. CoreAVI's ArgusCore SC2 drivers are a superset of Khronos' OpenGL SC 2.0 API specification. The OpenGL SC 2.0 graphics libraries support a programmable graphics rendering pipeline. The drivers allows safety critical applications to take greater advantage of the performance gains by utilizing modern graphics processor shader engines while still maintaining the ability to achieve the highest levels of safety certification. **ArgusCore SC2** enables users to deploy modern GPU shader programs in safety certifiable environments.

CertCore178™

Available today, CoreAVI's complete FAA DO-178C and EASA ED-12C Level A certification data packages support the use of ArgusCore SC graphics drivers in any FAA DO-178C / EASA ED-12C avionics safety certification.

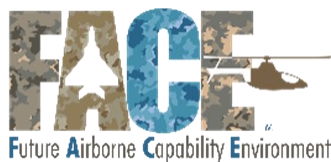
Modular and Adaptable Architecture

Based on a highly modular architecture, CoreAVI can optimize their customer's specific applications and quickly adapt the OpenGL libraries to new hardware platforms, operating systems and even add customer specific features. Video capture enhancements, display controller settings, and deterministic memory management modules can be quickly modified to address unique device specific requirements.



Features & Benefits

- Designed and developed from ground up for high performance, resource constrained devices and safety critical certification (including FAA DO-178C / EASA ED-12C Level A, ISO 26262 ASIL D, CENELEC EN-50128 SIL 4).
- Configurable and scalable power and performance management
- Specialized BIT integrated into driver; monitors registers and GPU integrity
- Integrated and compatible with popular safety critical HMI tools, SCADE, iData, GL Studio, VAPS XT
- CoreAVI drivers contains no open source and no 3rd party software
- Supports multicore partitions, hypervisor and Guest OS configurations
- Customizable display controller interface to support variable sync modes and custom resolutions
- Optimized offline compiler available for **ArgusCore SC2** applications
- Supports RTOS, including Wind River VxWorks, SYSGO PikeOS, QNX OS, Green Hills Integrity, DDCI Deos, Lynx Software LynxOS, Linux and configurable for proprietary RTOS
- Available with **CertCore178™** (Avionics DO-178C / ED12-C Level A) safety certification packages
- Available with **CertCore26262™** (Automotive ISO 26262 ASIL D) safety certification packages
- Available with **CertCore50128™** (Railway CENELEC EN-50128 SIL 4) safety certification packages
- EGL_EXT_compositor extension option
- Solutions aligned with latest Future Airborne Capability Environment (FACE™) Technical Standard





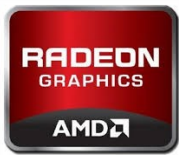
Supported Graphics Processors

The **ArgusCore SC** product family supports a number of popular graphics and system on chip processor families. CoreAVI's R&D and certification teams are continuously evaluating all GPUs available on the market and continue to add new graphics processors to its growing list of supported platforms.

Temperature Screened AMD Radeon E4690, E8860 GPUs, G Series SoC

NXP i.MX6 SoC Processor Families
VIVANTE GC880 to GC7000 GPU Cores

Intel HD 4000, HD 5000 GPU families
Atom™, Core™ i3, Core™ i5, and Core™ i7 CPUs and SoCs



Enhancement Modules

To compliment **ArgusCore SC** graphics libraries, CoreAVI provides a number of interoperable plug-in modules to enable feature rich integrated video, enhanced multicore functionality and GPU safety certification.

DecodeCore™ (H.264/MPEG2 video decode drivers)

CoreAVI's video decode drivers enable the use of integrated HD video decoders within graphics processors to be used in real time and safety critical platforms. **ArgusCore SC** video capture API facilitates the display and easy integration with 2D or 3D graphics-video overlays.

HyperCore™ (Graphics Hypervisor GPU Manager)

CoreAVI's **HyperCore** enables the virtualization of simultaneous graphics/video capabilities using one or more GPUs across multiple instances of guest operating systems. The **HyperCore** module allow users to set GPU prioritizations and virtualize CoreAVI's **ArgusCore SC** graphics libraries safely and efficiently across partitions within a hypervisor RTOS.

TrueCore™ (GPU Safety Monitor for Avionics DAL A certification)

CoreAVI's **TrueCore**, a real time GPU software safety monitor, operates in conjunction with **ArgusCore SC** functions, to analyze and monitor the data integrity of advanced graphics processors and display controllers used in safety critical display systems.