



## CORESIM® ARCHITECTURE

# DEVELOPMENT, EVALUATION AND TEST FLEXIBILITY

## Save time, effort and costs

A central part of our development and simulation portfolio, Collins CORESIM® architecture leverages proven technologies to create an advanced, simulation-based environment. This architecture can benefit you in wide-ranging areas – from new aviation product development to simulation and training products.

CORESIM provides an ideal environment for your product development team to evaluate and test key aspects of complete systems – including whole vehicle performance – before you commit resources to hardware production.

The environment also includes human-in-the-loop system response

evaluation, flight dynamics and control evaluation.

Additionally, you'll have the tools you need to re-use the engineering you have invested in system development, so you can apply it to simulation and training products.

CORESIM is used in the complete spectrum of simulators, from desktop simulations to Federal Aviation Administration, European Aviation Safety Agency, Civil Aviation Administration of China Level D and military-equivalent full flight simulations. It is also used in aircraft original equipment manufacturer (OEM) development simulations.

We use the architecture throughout Collins Aerospace engineering labs for design, integration and research and development to increase engineering fidelity.

## KEY FEATURES AND BENEFITS

- Reduced development risk – engineers can verify design before committing resources
- Improved development time – parallel development efforts minimize redesign
- Lower cost – common architecture eliminates maintenance, training and obsolescence management of multiple systems
- Simplified collaboration – scalability and networked architecture support both internal and external efforts

## KEY FEATURES

- Facilitates connection of live, virtual and constructive (LVC) resources across networks with modular, scalable and open system architecture usable in everything from early-stage prototyping and product development to the creation of desktop and high-fidelity training environments
- Maximizes software and hardware re-use during product design and integration, seamlessly extending into training system development
- Offers a mature environment with a proven track record supporting both simulation and platform development while providing more than 99% availability
- Includes long-term support and obsolescence management plans for both hardware and software architecture components

## SYSTEM COMPONENTS

CORESIM is based on a flexible backbone framework offering tools and graphics interfaces. These include a configurable basic vehicle platform. A basic flying platform is provided as well, giving you a working, high-fidelity aircraft platform to serve as a starting point for any new simulation.

- Operating system abstraction layer for Windows® and Linux® operating systems is provided to isolate the simulation software from the operating system for code re-use
- Application executive for real-time environment with a simulation kernel – provides real-time, deterministic run time with periodic scheduling and management of models and simulations
- Virtual data network – real-time, distributed – publish and subscribe data network that simplifies tying together simulation models and software components
- Relational database management system – provides storage for simulation configuration and environmental data
- Input/output (I/O) systems – flexible, data-driven I/O system with analog and discrete I/O, ARINC 429, ARINC 708 and MILSTD-1553 interfaces, supporting many industry-leading avionics and discrete I/O interface systems
- Extensive tool suite to maintain, operate and update any CORESIM – based simulation or device
- Software Development Kit (SDK) – comprehensive, cross-platform SDK enables users to develop simulation systems using industry standard software development tools for both Windows and Linux

## DEVELOPMENT SYSTEM



## TESTING SYSTEM



## TRAINING SYSTEMS



Specifications subject to change without notice.



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