A central part of our development and simulation portfolio, CORE™ simulation 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.

Our CORE simulation architecture 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 reuse the engineering you have invested in system development, so you can apply it to simulation and training products.

Our CORE simulation architecture 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’s also used in aircraft original equipment manufacturer (OEM) development simulations.

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

KEY 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 reuse 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-percent availability.
- Includes long-term support and obsolescence management plans for both hardware and software architecture components.

SYSTEM COMPONENTS

CORE simulation architecture is based on a flexible backbone framework offering tools and graphics interfaces. These include a configurable basic flying platform, which gives you a working, high-fidelity aircraft platform that serves as a starting point for any new simulation.

- Operating system abstraction layer for Windows® and Linux® operating systems.
- 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 simulation models and software components together.
- 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 MIL-STD-1553 interfaces, supporting many industry-leading avionics and discrete I/O interface systems.
- Extensive tool suite to maintain, operate and update any CORE simulation architecture-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

<table>
<thead>
<tr>
<th>Windows or Linux development server</th>
<th>Multi-user desktop download environment</th>
<th>Sim element development and unit testing</th>
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</thead>
<tbody>
<tr>
<td>Independent software integration</td>
<td>CM client</td>
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</table>

TESTING SYSTEM

Transportable training devices

Full-flight simulators/weapons system trainers

Flight training devices

Modular – scalable – open architecture

Part task trainers

Computer-based training

Desktop trainers/classroom trainers

TRAINING SYSTEMS

Building trust every day.

Rockwell Collins delivers innovative aviation and high-integrity solutions that transform commercial and government customers’ futures worldwide. Backed by a global network of service and support, we are deeply committed to putting our solutions to work for you, whenever and wherever you need us. In this way, working together, we build trust. Every day.

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