

DATASHEET

Virtual Integration Workspace (VIW)

The VIW is a powerful platform for collaborative manipulation of digital twins to enable cloud-based mission system emulation for rapid integration and evaluation of capabilities. The VIW provides a fully customizable platform for configuring and pre-integrating systems, including Parry Labs and third-party software, all from an intuitive web-based user interface (UI).

The VIW (<https://viw.mosa-toolkit.com/>) provides:

- Government and businesses the ability to collaborate in the cloud, shortening timelines and easing effort for integration and test.
- A virtual representation of mission systems including compute components, sensors/actuators, and virtual infrastructure (emulating physical interconnects) in an intuitive and user-driven workspace for digital test and integration.
- Hardware-emulated digital twins allowing users to apply software baselines, operating systems, and capabilities including **Stratia** to create representative virtual mission environments.
- The ability to create mission-critical and safety-critical deployments.
- Connectivity to **StratFac** artifact archives to enable software, Operating System (OS) images, and hardware data to flow directly from a customer or Parry Labs internal StratFac engineering development toolchain into digital twins.

The **VIW-StratFac workflow** assures the preservation of traceability into the virtual integration process, remains highly observable within both the VIW and StratFac, and demonstrates automated consumption of artifacts between modular systems. This provides the unprecedented ability to automate the engineering lifecycle from design to integration fully virtually.

The VIW allows you to “try before you buy”:

- Test integrations with emulated Parry Labs products to gain confidence in rapid capability deployment to any platform.
- Augment hardware and software evaluations for new or updated systems by creating custom hardware specifications and performing load testing, suitability evaluations, and mission stack integration before procurement.
- Collaborate within shared digital twins to enable multi-party integration without co-location.



STRATIA + HARDWARE = DIGITAL TWIN

Collaboratively create digital twin emulated hardware by using Parry’s simulated software to rapidly integrate and test capability anywhere, at anytime.









VIW curates best-of-breed third party technologies in an embedded application marketplace, extending the try-before-you-buy paradigm into the software domain to enable the virtual creation and evaluation of highly optimized mission systems.

Parry Labs' expertise in hypervisor, operating system, and hardware-software integration allows the VIW to abstract modular mission compute integration behind the scenes, creating a plug-and-play design architecture.

The VIW's intuitive user interface and embedded documentation allow equal use by system integrators and non-technical personnel.

Parry Labs identifies crucial industry needs from our own experiences as mission system integrators. The VIW demonstrates an innovative approach to addressing the gap in the government and industry's ability to perform virtual integration.

VIW provides customers with limitless potential to optimize integration workflows, such as:

 Advanced Simulation and Testing	<p>Dynamic Simulation Environments: Create dynamic simulation environments that can adapt to real-time changes, enabling predictive analysis and validation within digital twins.</p> <p>Mission-Based Testing: Simulate real-world mission integrations to evaluate system responses and performance under different mission/environment conditions.</p>
 Integration with StratFac DevOps Pipeline	<p>Continuous Integration and Deployment (CI/CD): Integrate CI/CD pipelines that automate the testing, deployment, and scaling of applications within the VIW environment, enhancing productivity and reducing manual effort.</p> <p>Version Control Integration: Incorporate version control in deployments and validation of digital twins and software baselines within digital twins.</p>
 Data Analytics and Visualization	<p>Real-Time Analytics: Embed and utilize real-time analytics tools to gain insights into system performance, bottlenecks, and optimization opportunities within the virtualized integration.</p> <p>Visualization Dashboards: Create/populate customizable dashboards for visualizing data and metrics, enabling users to make informed decisions based on analytical insights.</p>
 Security and Compliance	<p>Enhanced Security Protocols: Implement, test, and validate security measures, including encryption, access controls, and compliance with industry standards, to protect sensitive data and ensure privacy.</p> <p>Audit and Logging: Create and test comprehensive audit trails and logging features to maintain transparency and accountability in system operations and changes.</p>
 Artificial Intelligence and Machine Learning Integration	<p>AI/ML Insertion: Incorporate and evaluate AI and machine learning algorithms into missions rapidly without required expertise and investment.</p> <p>Automated Anomaly Detection: Deploy machine learning models that automatically detect anomalies and notify users of potential risks or irregularities.</p>
 Interoperability and API Support	<p>API-First Design: Leverage local and external APIs for integration with tools and services, enhancing flexibility and extensibility, and encouraging MOSA-driven development.</p> <p>Cross-Platform Compatibility: Facilitate and test interoperability with various platforms and technologies to assure cohesive mission performance across different environments.</p>