MISSION READINESS FOR VIRTUAL REALITY

MRVR Software Overview

MRVR (Mission Readiness for Virtual Reality) is a high-tech flight simulation and procedural training platform built from the ground-up for virtual reality. Its capabilities include:

- Built for VR, MRVR supports the latest VR headsets and input technologies.
- A modern platform, MRVR makes full use of multi-core systems and high-end GPUs.
- MRVR includes a high-fidelity flight model and is capable of simulating both fixed-wing and rotary flight.
- Behind the flight model lies an even deeper systems model, and a capable checklist training system. Checklists, emergency procedures, engine run-ups, and more can be trained and practiced in VR.
- Beyond individual training, MRVR can be used to rehearse as a group. Thanks to shared-cockpit procedures, multi-ship flight, and DIS integration, the possibilities for crew training are endless.
- The world outside the windscreen is important too, and MRVR includes a state-of-the-art scenery system. Visually appealing geo-typical terrain is available out-of-the-box for the continental US (full-world available upon request), while CDBs can be easily loaded for specific areas.
- Weather is a critical factor pilots must train with, and MRVR has best-in-class weather visuals and customization.
- MRVR isn't limited to the content it ships with. A developer-friendly yet powerful scripting system gives us the ability to extend the simulator with additional functionality, while a native C API allows integration with the most advanced simulator plugins. An emulation layer makes it easy to port existing FSX and Prepar3D plugins as well.
- Pilot's Edge integration for ATC work or internal communications between pilots.
- Video capture feature that could allow pilots to record flights for use inside briefings.
- Ability to place an Avatar ship while flying and adjust the distance and position via slide bars in the cockpit so that pilots can practice Range, Bearing and Aspect for formation flying.
- Debrief function for importing flight data from the aircraft back in the sim engine to evaluate and debrief a pilot's mission.
- Leap motion hand tracking and Focal Dot interaction tool, two ways to quickly toggle buttons in a virtual cockpit.
- Networked hand tracking so that two pilots in different simulators can see each other's hand gestures for comms out communication.
- Ability to link into JMPS mission planning computer route files.
- Multiple window presentation within VR, PDF publication presentation.
- iPad/Android tablet integration so you can mirror Foreflight or IFLYGPS and link it to the simulator to train flying with a tablet in the cockpit.
- Ability to tune and fly an approach in a Degraded Visual environment for TACAN /ILS/VOR/ where the gauges not only allow you to set your ILS approach, but the cockpit gauges will display correctly when flying that approach in the simulator engine.

ARMICK

Built for Virtual Reality

Our competitors built their simulators for use on desktop, and it shows. Low frame-rates are sickness inducing, visual fidelity is lacking, and the problems only become worse with newer, higher-resolution HMDs. The user interfaces are not built for VR, and often feel unintuitive. Worst of all, VR input is tacked on, with controller support technologies feeling tacked-on, and more advanced VR input technologies left completely unsupported.

MRVR was built for VR, by a team with years of VR flight simulation experience. With performance an important consideration, MRVR can drive modern VR headsets (with 5k+ render resolutions) at full VR frame-rates (90fps+), delivering perfect fluidity and avoiding simulation sickness. It can do so while supersampling for a clearer image and more readable text.

At the same time, virtual reality input devices are first-class. The user can choose anything between an intuitive 3d mouse cursor and high-end gloves with haptic feedback. They can reach out and flip virtual switches, completing entire procedures as if sitting in a real cockpit.

Finally, MRVR's patent-pending user interface is sleek and intuitive. Virtual windows allow full customization and configuration of the simulator from within VR. Checklists, procedures, and charts can be placed around the virtual cockpit, and customized to each pilot's liking.

Designed for Modern Hardware

MRVR is engineered to make full use of modern-core processors and high-end GPUs. Many simulators max out one or two CPU cores, depending upon high-clocked CPUs to reach passable frame-rates. Utilizing patent-pending technology, MRVR spreads CPU load around 4-8 cores, increasing frame-rates and eliminating the need for overclocking or more extreme processors.

At the same time, MRVR's graphics engine is optimized for modern GPUs. On a standard 1070 it can deliver a smooth 90fps VR, at high resolution. Patent pending techniques make this possible even with high object counts, HDR-style night-lighting, and dense weather. The latest technologies like VR SLI are also supported, to push high-end systems to their limits.

A Flight Model for Pilots

MRVR features a realistic flight model tuned with extensive feedback from pilots. Airplanes handle responsively and realistically, while helicopters are a joy to hover. The flight model is supported by a complex systems simulation, enabling accurate checklist rehearsals, and the ability to practice full emergency procedures with realistic results. Between startup, takeoff, navigation, and landing, pilots can learn a wide range of skills.

ARMICK

In-Depth Training Made Possible

With MRVR, training becomes immersive and engaging. Our unique checklist system enables cost-effective development of checklist procedures. Every checklist includes a guided training mode, and a non-guided testing mode. Testing results can be logged and analyzed, making testing and review easy.

Flexible Multiplayer Support

Pilots don't usually work alone, and MRVR lets them train the same way they'll fly. Multiple pilots can sit in a shared cockpit, rehearsing checklists while practicing CRM. Multiple aircraft can fly in formation and communicate via hand-signal or radio. You can even link MRVR up to your existing DIS-enabled simulators.

Beautiful Scenery

MRVR's default scenery includes the entire continental USA. It blends satellite photo-scenery with detail textures using a patent-pending system which utilizes machine learning. The result is an eye-pleasing recreation of the USA which will keep pilots engaged and wanting to fly more.

MRVR also supports the import of CDB (Common Database), meaning that you can fly any location you can acquire in high fidelity. The MRVR scenery system is made completely open, allowing you to create any scenery you can imagine.

Jaw Dropping Weather

Realistic weather is crucial to any flight simulation, and MRVR's patent-pending weather system is incredible. Thick and beautiful cloud cover runs without issue at VR frame-rates and resolution. Aircraft respond realistically to turbulence, which can be customized by layer and altitude. Weather is fully scriptable, facilitating complex and challenging scenarios.

An Open Platform

Although MRVR's core software package includes a huge amount of functionality, it's easy for your software developers to add even more. A light-weight scripting system enables junior level programmers to extend the simulation in a matter of hours. It supports hundreds of APIs, allowing scripts to add graphical effects, place objects in the world, control aircraft, extend user input, modify aircraft systems, and much more.

At the same time, experienced programmers can utilize our native API, to create complex and deep simulator plugins. FSX and Prepar3D add-ons can be ported to MRVR upon request (and with permission from the plugin author)

ARMICK