

A BRILLIANT PARTNERSHIP

In the development phase of the world's first virtual reality flight simulator training device (FSTD) for the Airbus Helicopters H125, several Airbus test pilots and instructors traveled to the VRM Switzerland facility near Zurich to put this game-changing technology through its paces.

The pilots were part of an unprecedented training partnership between Airbus and VRM Switzerland, aimed at ensuring maximum fidelity in an FSTD that could massively disrupt the flight simulator industry and push safety standards to new levels.

"Our roots were meant to be together," said Sabrina Barbera, vice president and head of training at Airbus Helicopters. "The idea is really to take the advantages of the VRM technology and pair it with the expertise of Airbus Helicopters to enhance training safety for this aircraft. There are around 4,000 H125s flying around the world today, so we want this device to become a tool not only for recurrent training, but also for qualification type training."

VRM Switzerland launched in 2018 as a small startup made up of engineers and aviation experts who wanted to enable safer, more efficient and environmentally friendly flight training.

Their first major step in this direction was in fact a giant leap.

In 2021, VRM Switzerland introduced an immersive virtual reality (VR) flight training device for the Robinson R22 helicopter, the first VR device ever to be qualified by an aviation authority — in this case, the European Union Aviation Safety Agency (EASA).

Immediately after finishing the Robinson R22 device, they began working on a similar platform for the H125, an iconic single-turbine aircraft

VRM SWITZERLAND WORKS CLOSELY WITH AIRBUS HELICOPTERS TEST PILOTS AND INSTRUCTORS TO ENSURE MAXIMUM FIDELITY FOR ITS NEW VIRTUAL REALITY SIMULATOR FOR THE AIRBUS H125

BY BEN FORREST

that represents approximately one-third of the Airbus in-service fleet.

Although flight test data ensured baseline fidelity, the team at VRM Switzerland wanted to go beyond objective standards and capture the subjective feedback of pilots who have flown the H125 for hundreds of hours and helped shape its design.

"That's in our DNA," said Fabi Riesen, co-founder and CEO of VRM Switzerland. "You can ask every employee — we definitely want to go above that ... the goal here is not to get the checkmark from the [aviation] authority. The goal is to get the pilots on board, so it needs to be super-realistic to satisfy the operator's need in terms of sustainability and affordability."

This FSTD for the H125 uses a VR headset to create an immersive 3D environment for pilots, with extraordinary renderings of the cockpit, instruments, and airframe that are true to life.

The pilot sits in a small, lightweight cockpit that takes up less than 215 square feet (20 square meters) of floor space and has a total mass of just 1,279 pounds (580 kilograms). It's small enough to fit in any mid-sized aircraft hangar and can be easily transported to multiple sites.

This H125 simulator also has a full-motion platform powered entirely

by electricity, with remarkable responsiveness to activity within the simulation. In comparison to traditional simulator domes, which rely on screens to replicate terrain, VR goggles produce an unrestricted immersive 3D environment that responds to the pilot's head movements in real time.

The result is a more precise replication of real-world conditions. Airbus pilots worked with the engineers at VRM Switzerland to ensure the simulated environment goes beyond technical accuracy and has the precise look and feel of physical flight in the H125.

"It is much more powerful to have this validated by those [pilots]," Riesen said. "Here we have much more consistency in the way these aspects get validated, and the next step is to have a huge harmonization in the way we are going to train people. Having coordinated training brings us much more safety because everyone is going to take the same approach."

"We are complementing VRM and performing the subjective tests that only the pilots and flight test pilots who designed the device can do. It's very important for us to take their comments into account," Barbera said.

Improved safety is the most important goal of any training device, but the VRM Switzerland H125 FSTD is a potential game-changer because of its realism, size, and affordability.



**VRM[®]
SWITZERLAND**

vrm-switzerland.ch
+41 44 211 15 15
Visit us at Hall E, Booth #8860

**Airbus Helicopters
Hall E, Booth #7750**