WIND

DELIVERING ELECTRIC VERTICAL TAKEOFF AND LANDING VEHICLES TO THE SKIES

MEETING THE CHALLENGES OF SECURITY, SAFETY, AND RELIABILITY

Electric vertical takeoff and landing (eVTOL) vehicles offer the promise of advanced air mobility in support of dual-use commercial and military missions—but, like all new technologies, they come with challenges:

01

DESIGN

The successful design of eVTOLs must incorporate software solutions that address the range of flight and the size, weight, and power (SWaP) that will allow safe takeoff and landing.

"THE EVTOL MARKET IS PROJECTED TO GROW AT A CAGR OF 20.42% FROM 2025–2030.[1]

02

DEVELOPMENT

The development of an intelligent compute system relies on DevOps, which supports constant integration and delivery of updated code. In order to incorporate security into system development, developers must use a DevSecOps process that builds security in by combining commercial off-the-shelf (COTS) software, virtualization, containerization, and automation.

03

SAFETY

For eVTOL safety, developers must keep in mind flammable batteries, spinning rotors and propellers, navigation systems, flight control systems, and the populated areas that aircraft will fly over. Meeting safety certification requirements ensures that both hardware and software can handle these variables.

"UBER, AIRBUS, BOEING, BELL, AND EMBRAER HAVE ATTRACTED MORE THAN $1 BILLION IN INVESTMENTS IN EVTOL.[2]

04

SECURITY

It is essential that eVTOLs have security planned and built into their systems to protect against cybersecurity threats. If a DevSecOps-compliant process is followed, manufacturers can assure the safety of their system, while maintaining updates.

"93% OF SURVEY RESPONDENTS AGREE THAT UNMANNED AIRCRAFT SUBSYSTEMS NEED TO BE ABLE TO RUN AT THE SAME TIME (E.G., NAVIGATION/GPS AND COLLISION AVOIDANCE).[3]

The U.S. Air Force established the Agility Prime program to help aviation companies overcome these evolving challenges as new innovations surface. And Wind River, the #1 edge compute OS platform in aerospace and defense, is likewise committed to making eVTOL a reality while ensuring the security, safety, and reliability of its software.

TO LEARN MORE ABOUT AGILITY PRIME AND HOW WIND RIVER IS ENABLING EVTOLS TO RELIABLY, SAFELY, AND SECURELY TAKE FLIGHT, READ OUR WHITE PAPER OR CONTACT US AT INQUIRIES@WINDRIVER.COM.

1. www.marketsandmarkets.com/Market-Reports/evtol-aircraft-market-28054110.html
2. www.rotorandwing.com/2019/01/03/vertical-flight-society-1-billion-already-invested-evtol-companies
3. 2019 Urban Air Mobility industry study commissioned by Wind River