RAYTHEON TECHNOLOGIES COMPLETES FIRST ENGINE RUN OF REGIONAL HYBRID-ELECTRIC FLIGHT DEMONSTRATOR

News / Manufacturer

Raytheon Technologies announced successful first engine run of the company's regional hybrid-electric flight demonstrator, marking a key milestone towards flight testing, targeted to begin in 2024. The propulsion system's initial run took place at Pratt & Whitney's innovation facility in Longueuil, Quebec and performed as expected. The system fully integrates a 1 MW electric motor developed by Collins Aerospace with a highly efficient Pratt & Whitney fuel-burning engine, specially adapted for hybrid-electric operation. This powerplant technology will enable more efficient engine performance during the different phases of flight, such as take-off, climb and cruise, reducing fuel burn and CO2 emissions by up to 30% compared to today's most advanced regional turboprop aircraft.

Jean Thomassin, executive director new products and services, Pratt & Whitney Canada, commented: "Hybrid-electric propulsion technology offers significant potential to optimize efficiency across a range of different aircraft applications, helping our industry meet its ambitious goal for achieving net zero CO2 emissions. With our ground test program now well underway, planned flight testing will enable us to accelerate the demonstration of this next generation sustainable propulsion technology as we continue to expand our collaboration within Canada's aerospace

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ecosystem and beyond."

Flight Test Centre of Excellence (Cert Center Canada - 3C), will modify and operate the De Havilland Canada Dash 8-100 aircraft, serving as the platform for future flight demonstrations.

John Maris, 3C president and chief test pilot for the project, said: "We are honoured that Raytheon Technologies has chosen our Design Approval Organization to lead the flight test program for this historic demonstrator project. 3C has assembled a trusted Quebec team that includes Chrono Aviation, WAAS Aerospace, and Elisen & associés to integrate the hybrid-electric powertrain, battery system, and high voltage electrical harness into 3C's Dash 8 research aircraft. I am confident that 3C's extensive flight test experience and historical relationship with Transport Canada will complement Raytheon Technologies' outstanding team to safely demonstrate this important technological advance."

Since Raytheon Technologies launched the demonstrator project via its Pratt & Whitney Canada and Collins Aerospace businesses in July 2021, supported by the Governments of Canada and Quebec, numerous organizations in Canada and around the world have joined the initiative.

H55 S.A., recently the subject of a minority investment by Raytheon Technologies' venture capital arm, RTX Ventures, will supply battery systems. The development of battery component designs and associated electrical control systems will also be supported by the National Research Council of Canada and the Innovative Vehicle Institute. Ricardo PLC is also supporting the project with component design, system integration, and testing. De Havilland Canada is supporting integration of the propulsion system on the experimental aircraft.

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