

Solutions to limit eVTOL noise



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Short bios

Arnaud Le Pape is the rotorcraft program director at ONERA managing the rotary wing and VTOL research activities. He joined ONERA in 2001 after a master degree in aerospace. He has over 20 years of research and project management experience in the field of rotorcraft with a focus on aeromechanics. He managed from 2016 and 2018 the helicopter, propeller and turbomachinery aerodynamics team and joined then in 2019 the aeronautics programme directorate.

Dr. Julien Caillet is an acoustic expert at Airbus Helicopters, also in charge of noise certification activities. He had a PhD on helicopter interior noise diagnosis and modelling in 2006. He has over 20 years of acoustics engineering and project management experience with expertise in developing low noise technology for helicopters. He currently supports UAM acoustics activities within Airbus Group and coordinates research projects on Helicopter & eVTOL Low noise design and acceptance.

Abstract

Helicopters are rotorcraft that already perform missions over densely populated environments. Despite their utility for applications such as medical emergency transport, obstacles have limited the growth of passengers transport missions in urban environments. Noise is one of the most reported barrier identified. New vehicle concepts, favoured by the emergence of new technologies such as distributed electric propulsion, may offer new degrees of freedom to reduce noise. This in turn will require to mature appropriate simulation methods, new noise control technologies, but also an accurate assessment of noise impact of such operations and the related factors that will drive their acceptance. The joint presentation by ONERA & Airbus Helicopters will highlight some studies set up to reduce the noise of future eVTOL operations.