



VFS TECHNICAL MEETING
Modern Operations with Future Integrated
Vehicle Management Systems

CALL FOR PAPERS

August 17–19, 2021

Philadelphia Region

Sponsored by the VFS Mideast Region and Hosted by the Philadelphia Chapter

The US Mideast Region of the Vertical Flight Society (VFS) is pleased to host the 2021 Technical Meeting on Vehicle Management Systems (VMS), August 17-19, 2021. Now is an ideal time for this event, with the extraordinary level of vertical takeoff and landing (VTOL) aircraft design and development activity underway and planned in both the commercial and military sectors, and the unparalleled criticality of VMS to safety, performance and affordability. *The meeting is planned to take place in-person, but VFS HQ and the Mideast Region will continue to monitor the pandemic to ensure an in-person event is a safe, viable option, including moving to a virtual event if necessary.*

Over the last several years, there has been an explosion in commercial (electric) VTOL aircraft developments, with more than 400 new platforms being designed and promoted for advanced air mobility, as documented on the VFS website, [Electric VTOL News](#). This revolutionary increase in investment has been inspired by the achieved and projected advances in electric energy and power components, and in no small part by VFS's [Transformational Vertical Flight \(TVF\) initiative](#), begun in 2014.

In addition, military VTOL aircraft development is more vigorous than it has been in a generation, with an exceptional range of development underway and planned in the Future Vertical Lift (FVL) initiative in the US, the modular Next Generation Rotorcraft in NATO, and other emerging needs.

Furthermore, there is a dramatic level of activity in unmanned vertical flight, with a focus on automation and autonomy to enable safe and affordable vertical flight aircraft across a wide range of operations.

In each of these applications there is a call for unprecedented levels of speed, survivability/safety and affordability. All of these applications rely upon capable and robust VMS, and offer opportunities to leverage emerging technologies and approaches.

This meeting offers a first, best opportunity to collaborate across industry, academia and government, to discuss current VMS challenges, as well as how available and emerging technologies can influence design methodologies and decisions.

Advancements in VMS have moved far beyond vehicle control during mission execution to considering and integrating operations across the entire lifecycle of the system. Robust databases of platform operating and maintenance data are available for intelligent condition-based decisions at the platform level to the fleet level, and potentially — for military aircraft — to the entire joint force level. Advanced intelligent subsystems offer unbounded opportunities for diagnostics and prognostics, for unprecedented improvements in capability and affordability together. This meeting provides a forum to present, discuss, debate and accelerate the opportunities and capabilities of vertical flight VMS.

CHAIRS – questions please email VMS21@vtol.org

- **General Chair: Mr. Dan Wells of Leonardo** (Tel: 972-730-6982)
- **Technical Chair: Mr. Kevin W. Wise of Boeing Vertical Lift** (Tel: 484-768-4330)

The VMS Technical Meeting is an open meeting forum therefore it is VFS policy that all final written papers and presentations are completely unrestricted. Potential authors should make note of this policy.

TOPICS – the VFS Mideast Region is excited to invite papers in all areas relating to Vehicle Management Systems and Air Vehicle Systems of VTOL aircraft, including but not limited to the following:

- Systems for commercial and military, manned and unmanned, traditionally and alternatively fueled rotorcraft applications
- New developments in system architectures, components or technologies in the actuation, electrical power generation and distribution, engine controls, flight controls and vehicle state sensing technologies
- Advancements or novel applications of technologies for fault detection and isolation
- Advancements in applications of Model-Based Design approaches, tools, simulation, and testing applied to VMS applications

ABSTRACT SUBMITTAL – abstracts must follow these guidelines:

- Written in English
- Paper title, author(s), affiliation(s) and contact information
- Not exceed 5-pages, including background, approach, key results, conclusions and sample supporting figures
- The approach and results should be presented in sufficient detail to allow the reviewer to determine the quality, scope, significance and the current status of the work that will be described in the final paper

Please submit abstracts by email in PDF format no later than April 30, 2021, to the Technical Chair Kevin Wise at VMS21@vtol.org. Please include paper title, author name/affiliation and contact information in the email.

Authors will be notified of abstract selection by May 10, 2021. *Acceptance of an abstract is a professional commitment to write the technical paper and present during the meeting*

COMPLETED PAPERS/PRESENTATIONS:

- **Final written technical papers will be due July 30, 2021 (in PDF) and will be published as online meeting proceedings**
- Presentations will be given in an open forum during the meeting dates
- A “no paper, no podium” policy will be observed for this conference
- The author is responsible for any necessary clearances and approvals
- All questions should be directed to the Technical Chair at VMS21@vtol.org