

**SAE INTERNATIONAL**

# **SAE INTERNATIONAL ELECTRIC AIRCRAFT STEERING GROUP (EASG)**

Overview

Mark P. DeAngelo, PhD, SAE International



The Electric Aircraft Steering Group strategically identifies, landscapes, and **coordinates** the various **standardization** activities necessary to support **full-electric** and **more-electric** aircraft applications at the top level system, subsystem, and component levels.

Next meetings:  
Monthly Virtual  
April 18-19 Friedrichshafen, Germany

# Scope of the electric aircraft / more electric aircraft (EA/MEA) landscape

## Scope Topics

- **Compliance**
- **Safety**
- **Power Electronics & Modular Open Architectures**
- **More Electric Engine**
- **Energy Storage & Power Source**
- **Subsystems**
- **Hybrid/Electric Propulsion**
- **Supporting infrastructure**
- **Power generation & distribution**
- **Maintenance**
- **Operations**
- **Testing, V&V (Systems Engineering)**
- **Controls**

# EASG is coordinating new SAE standards developments in the following areas.

- Adding provisions for MEA/EA to existing standards/recommended practices
- HIRF, Lightning, EMC/EMI (AE-4, AE-2)
- Crashworthiness (multiple committees)
- High voltage/power and electrical load characterization (AE-7, AE8)
  - AE-7 Aircraft High Voltage Workshop, March 20-22, 2018 – Everett, WA
- Cooling (AC-9, E-36)
- Distributed propulsion (flight & engine controls, PLOC, ...), (A-6, G-10, S-7)
- Actuation (A-6)
- Ground support & charging (AGE-3, HYBRID-EV )
- Energy storage (AE-7, VBSSC)
- Figures of merit & standardized measures (power density, efficiency, ...)
- Autonomy (AS-4)
- Deicing (AC-9C)
- Reliability, life, PHM... (HM-1)
- Noise (A-21)

## Some examples of EA/MEA documents include:

[AIR6127](#) **Managing Higher Voltages in Aerospace Electrical Systems**

[AIR6326](#) **Aircraft Electrical Power Systems, Modeling and Simulation, Definitions**

[AS6349](#) **Minimum Performance Standard (MPS) for an Airborne AC to AC Converter**

[AIR6198](#) (WIP) **Considerations for future more electric aircraft electric power systems**

[AIR6343](#) (WIP) **Design and Development of Rechargeable Aerospace Lithium Battery Systems**

[ARP5584A](#) (WIP) **Document for Electric Power Management**

[AIR6897](#) (WIP) **Lithium Battery Systems – Prognostics and Health Management (w/ HM1)**

[AIR6505](#) (WIP) **Electrical Load Characterization**

**EASG was started in 2015 and has been making steady progress.**

- Developing strategy and key topics
- Identifying gaps in standards and guidance documents
- Engaging key stakeholders
- Supporting Part/CS 23, 25, 27, 29, 33/E, APU
- Working relationships with GAMA and ASTM
- Delegating new standards work

**Attend the AE-7 Aircraft High Voltage Workshop, March 20-22, 2018!**

- Meeting registration is complimentary!
- Registration/Agenda/Meeting info available here:

<http://www.sae.org/servlets/works/committeeHome.do?comtID=TEAAE7>

SAE INTERNATIONAL

## FOR MORE INFORMATION, CONTACT

Mark P. DeAngelo, PhD  
Aerospace Standards Engineer  
SAE INTERNATIONAL  
[mark.deangelo@sae.org](mailto:mark.deangelo@sae.org)

Pascal Thalin  
Chair, EASG