AEROSPACE RECOMMENDED PRACTICE

ARP8676™	
Issued 2022-08	

Nomenclature and Definitions for Electrified Propulsion Aircraft

RATIONALE

The electrification of aircraft propulsion is an emerging area which holds much promise for revolutionizing transport aircraft and enabling new mobility options. These technologies have the potential for carbon footprint reduction, noise reduction, improved performance, new aerodynamic efficiencies, and better utilization of energy infrastructure. The application of electric power for aircraft propulsion can take a variety of forms, ranging from partial electric to full electric. The introduction of electric drive systems to drive propulsors, along with the variety of available methods to generate electricity and store energy offers a great degree of new design freedom for aircraft and aircraft architectures. This newfound design freedom exposes a need within the aviation industry to establish a common design language for electrified propulsion. The purpose of this document is to establish a common language on a new domain, new technologies, and new architectures that describe electrified propulsion aircraft to reach a common interpretation.

FOREWORD

This SAE Aerospace Recommended Practice (ARP) is intended to establish a common language on a new domain, new technologies, and new architectures that describe electrified propulsion aircraft to reach a common understanding. The terms and description may not be new or unique but instead are expressed in the context of electrified propulsion aircraft. The terms and descriptions included will continue to grow and evolve as the technology associated with electrified propulsion aircraft evolves.

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For more information on this standard, visit
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TABLE OF CONTENTS

1. SCOPE

Create and publish a list of terms relevant to electrified propulsion aircraft with summary text descriptions. The terms and descriptions will not provide full explanations, diagrams, and other detailed technical descriptions. These deeper descriptions will be addressed in other documents.

This document defines the relevant terms and abbreviations related to the design, development, and use of electrified propulsion in aircraft. This definition is provided to enable a consistent use of technical language throughout the standards developed by the E-40 committee.

1.1 Introduction

The purpose of this document is to establish a common language on a new domain, new technologies, and new architectures that describe electrified propulsion aircraft to reach a common understanding. The terms and definitions included within this document are consistent with the regulatory documents referenced with the document. Evolution of the applicable regulatory documents may lead to further updates of this document. Related standards development work is also being undertaken by ASTM Committee F39.05 which has published standard ASTM F3338.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AIR8678 Architecture Examples for Electrified Propulsion Aircraft

2.1.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM F3338 Standard Specification for Design of Electric Engines for General Aviation Aircraft

2.1.3 EASA Publications

Available from European Union Aviation Safety Agency, Konrad-Adenauer-Ufer 3, D-50668 Cologne, Germany (for visitors and for mail over 1 kg) and Postfach 10 12 53, D-50452 Cologne, Germany (for mail 1 kg or less); Tel: +49 221 8999 000, www.easa.europa.eu.

This chapter refers to the document version available at the date of the publication. It is recommended to refer to the EASA website and use the latest amendment available.

CS-Definitions Amendment 2 - Definitions and Abbreviations used in Certification Specifications for products, parts and appliances, https://www.easa.europa.eu/sites/default/files/dfu/CS-Definitions - Amendment 2.pdf

List of abbreviations used by EASA, https://www.easa.europa.eu/abbreviations