



AEROSPACE INFORMATION REPORT

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Applicable Aircraft Integrated Vehicle Health Management (IVHM)
Regulations, Policy, and Guidance

RATIONALE

There is a need to bridge the gap between the evolving capabilities of IVHM technology and the application of this technology in the aircraft industry. Several contributing factors to this gap include the required levels of IVHM airborne and ground hardware and software certification, and changes to an aircraft operator's maintenance program within the existing set of regulations, policy, and guidance. This document provides a list of regulations, policy, guidance, and operations specifications (OpSpecs) which IVHM certification applicants and the intended end users can use when conducting airworthiness certification and operational authorization activities.

1. SCOPE

This AIR lists and describes a collection of regulations, policy, and guidance documents applicable to design approval applicants, aircraft operating certificate holders, and maintenance repair and overhaul (MRO) organizations. The aircraft industry should consider these rules when installing IVHM technology for use in aircraft maintenance. This is a starting basis and should not be considered as complete when certification of an IVHM system is expected. The AIR's objectives are:

1. To set the foundation for aircraft certification applicants seeking to design IVHM solutions as part of the type certificate (TC), supplemental type certificate (STC), amended TC, or amended STC activities; and
2. To set the foundation for aircraft operating certificate holders to engage with regulators to get authorization for using IVHM applications as part of an aircraft maintenance program.

NOTE: This AIR's scope is limited to the United States (U.S.) Federal Aviation Administration (FAA) information only in this version, but future revisions intend to include other regulator input.

2. ACRONYMS AND ABBREVIATIONS

14 CFR	Title 14 of the United States Code of Federal Regulations
AC	Advisory Circular
ACO	Aircraft Certification Office
ALS	Airworthiness Limitations Section
ASI	Aviation Safety Inspector
CAMP	Continuous Aircraft Maintenance Program
CMM	Component Maintenance Manual
CMR	Certification Maintenance Requirement

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DAH	Design Approval Holder
FAA	Federal Aviation Administration
FSIMS	Flight Standards Information Management System
HUMS	Health and Usage Monitoring Systems
ICA	Instructions for Continued Airworthiness
ISC	Industry Steering Committee
IVHM	Integrated Vehicle Health Management
LODA	Letter of Design Approval
LODA	Letter of Deviation Authority
MRO	Maintenance, Repair, and Overhaul
MSG	Maintenance Steering Group
PI	Principal Inspector
OpSpec	Operations Specification
PMA	Parts Manufacturer Approval
STC	Supplemental Type Certificate
TC	Type Certificate
TSO	Technical Standard Order
TSOA	Technical Standard Order Authorization
U.S.	United States

3. REGULATIONS

This section identifies the FAA aircraft safety regulations in Title 14 Code of Federal Regulations (14 CFR) related to continued airworthiness and maintenance requirements. These requirements set the safety standards design approval holders, repair stations, and aircraft operators must meet to maintain continued airworthiness through the aircraft lifecycle.

3.1 14 CFR Part 21, Section 21.50

14 CFR 21.50 establishes the requirement for aircraft products and parts to have Instructions for Continued Airworthiness (ICA) and maintenance manuals with airworthiness limitations section (ALS). Applicants of aircraft products and parts must provide the required maintenance documentation prior to receiving FAA design approval.

3.2 14 CFR Part 21, Subpart K, "Parts Manufacturer Approvals"

This subpart provides procedural requirements on how Parts Manufacturer Approvals (PMAs) are issued, and rules governing PMA holders. Among one of the PMA holder responsibilities is to provide test and computation data (e.g., materials, processes, test specifications, maintenance instructions) to prove the article's design meets the intended function, and is effective and reliable.