CertCore™ 254

Avionics DO-254/ED-80 Hardware Certification Evidence Package

FEATURES AND BENEFITS

- Lifecycle data to facilitate FAA, EASA, TCCA and other certification authorities' avionics safety certifications, where A(M)C 20-152A is an acceptable means of compliance
- DO-254 / ED-80 evidence package supports systems requiring DAL A
  - Lower process assurance levels are supported with licensing
- Covers both the Circuit Board Assembly and custom logic (PLD)

INTRODUCTION

CoreAVI develops Airborne Electronic Hardware (AEH), COTS-D, and provides them as complete designs to meet system requirements where A(M)C 20-152A is an acceptable means of showing compliance with the applicable airworthiness regulations of AEH in aircraft certification or (E)TSO authorization, and where the system-level hardware Design Assurance Level (DAL) is A or lower. The development of the AEH occurs with the oversight of an independent FAA Designated Engineering Representative (DER) to ensure compliance with A(M)C 20-152A objectives. The DER can provide a formal signed letter attesting to the A(M)C 20-152A compliance of the AEH design.

While A(M)C 20-152A describes objectives for a Circuit Board Assembly (CBA), it does not specifically identify an acceptable process. To provide a basis for process acceptance, CoreAVI draws from the previous guidance in EASA CM-CWCEH -001 Issue 01 Revision 02 where section 7.2 defined that level D should be applied. That is, CoreAVI develops CBAs following a robust process that provides level D lifecycle data with additional focus on requirements traceability from product requirements to PLD requirements for PLDs used on the CBA.

The available certification package, CertCore254, described here is the subset of the DO-254 compliance lifecycle data for the AEH that a certification authority expects to be included with a certification. The remaining lifecycle data is available for examination at CoreAVI. The table below identifies the lifecycle data for the CBA and PLD elements, which may be provided as a single set of lifecycle data or as separate lifecycle data set for each CBA and PLD. Additionally, for each data item, the system level Stages of Involvement (SOI) that the item supports are identified.

Resident software will have a separate CertCore178 lifecycle data kit supporting DO-178C level A.

CoreAVI also provides a certification defense option for direct on-site support from CoreAVI to defend the certification evidence internally and with the certification authority.

CoreAVI uses electronic technology for strong permanent data retention following the guidance in FAA-IIR-01-01A 23/04, Aircraft Certification Guide for the Use of Electronic Technology and Alternative Methods for Storing Information, and FAA Order 8000-79, Use of Electronic Technology and Storage of Data. The AEH development records are permanent and will not be destroyed.

D = Deliverable as part of the CertCore 254 data kit A = Available for examination at CoreAVI

DATA ITEM	CBA	PLD
Hardware Plans		
Plan for Hardware Aspects of Certification	D	D
Hardware Validation and Verification Plan	D	D
Hardware Design Plan	A	D
Hardware Electronic Component Management Plan	A	N/A
Configuration Management Plan	A	A
Quality Assurance Plan	A	A
Hardware Design Standards		
Requirements Standards	A	A
Hardware Design Standards	N/A	A
Coding Standards	N/A	A
Hardware Validation and Verification Standards	N/A	A
Hardware Design Data		
Hardware Requirements Data	A	A
Hardware Design Document	A	A
Top Level Assembly Drawing (HCI/HECI)	D	D
Assembly Drawings	D	N/A
Validation and Verification Data		
Hardware Traceability Data	A	A
Hardware Test Cases	A	A
Hardware Design Verification Test Plan	D	D
Hardware Test Readiness Review	A	A
Hardware Elemental Analysis Report	N/A	D
Hardware Verification Results	D	D
Hardware Test Procedures/Verification Configuration Index	A	A
Final Data		
Hardware Conformity Review	A	A
Transition Audit Records	A	A
Hardware Accomplishment Summary	D	D
CM Records	A	A
QA Records	A	A
Problem Reports	A	A
DER signed SOI reports or letter approving the lifecycle data as a subject matter expert (available from DER)	D	D