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Aerospace series - Modular and Open Avionics Architectures - Part 004: Packaging

I.S. EN 4660-004:2011

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Luft- und Raumfahrt - Modulare und offene
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Foreword

This document (EN 4660-004:2011) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2011, and conflicting national standards shall be withdrawn at the latest by August 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

0 Introduction

0.1 Purpose

This document is produced under contract ASAAC Phase II Contract n°97/86.028.

The purpose of the ASAAC Programme is to define and validate a set of open architecture standards, concepts and guidelines for Advanced Avionics Architectures (A3) in order to meet the three main ASAAC drivers. The standards, concepts and guidelines produced by the Programme are to be applicable to both new aircraft and update programmes from 2005.

The three main goals for the ASAAC Programme are:

1. Reduced life cycle costs.
2. Improved mission performance.
3. Improved operational performance.

The ASAAC standards are organised as a set of documents including:

A set of agreed standards that describe, using a top down approach, the Architecture overview to all interfaces required to implement the core within avionics system.

The guidelines for system implementation through application of the standards.

The document hierarchy is given hereafter: *(in this figure the document is highlighted)*

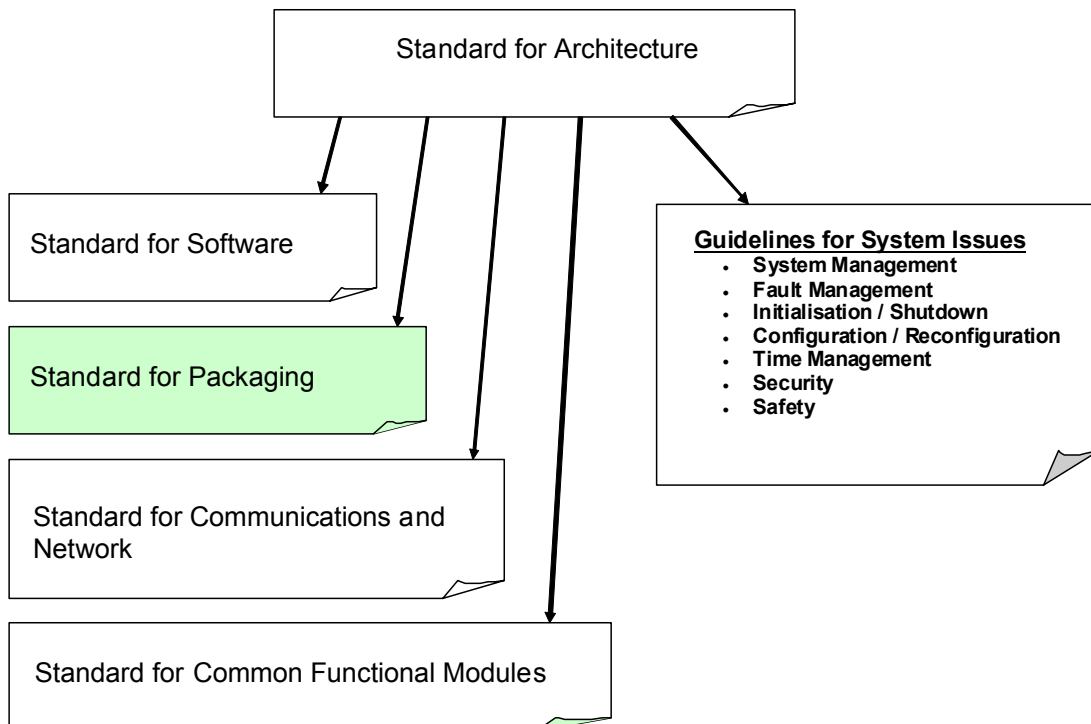


Figure 1 — ASAAC Standard Documentation Hierarchy

0.2 Document structure

The document contains the following clauses:

Clause 1, Scope.

Clause 2, Normative references.

Clause 3, Terms, definitions and abbreviation.

Clause 4, Generic module specification.

Clause 5, Module Mechanical Tests.

Clause 6, Guidelines for a rack slot.

Clause 7, Typical modular avionics environment.

1 Scope

The purpose of this standard is to establish uniform requirements for Packaging for the Common Functional Modules (CFM) within an Integrated Modular Avionic (IMA) system, as defined per ASAAC. It comprises the module physical properties and the Module Physical Interface (MPI) definitions together with guidelines for IMA rack and the operational environment.

The characteristics addressed by the Packaging Standard are:

Interchangeability:

- For a given cooling method all modules conforming to the packaging standard will function correctly when inserted into any rack slot conforming to the standard for the cooling method.
- All modules conforming to the Module Physical Interface (MPI) definitions for connector, IED and cooling interface will function correctly when inserted into any rack slot conforming to the same MPI definition.

Maintainability:

- All modules are easily removable at first line.
- No special tools required at first line.
- No manual adjustment is necessary when installing modules. No tool is required for installation or removal of the modules.
- Mechanical keying is provided that prevents insertion of a module into a rack slot that may cause an unsafe condition.

The Module Physical Interface definition, contained within this standard, does not include the properties of the signalling used in the optical interface (e.g. wavelength). These are covered in EN 4660-003.

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