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	Superseded by AS9115	
Deliverable Aerospace Software Supplement for AS9100A Quality Management Systems - Aerospace - Requirements for Software (Based on AS9100A)		

RATIONALE

This document is cancelled and superseded by AS9115.

The AS9006 standard was written against AS9100 Rev A. It was stabilized on July 9, 2013, meaning that it was no longer being maintained. Since AS9115 has been published, providing a superseding document to reference, AS9006 can be cancelled, removing it from industry use.

CANCELLATION NOTICE

This Technical Report has been declared "CANCELLED" as of October, 2019, and has been superseded by AS9115. By this action, this document will remain listed in the respective index, if applicable. Cancelled Technical Reports are available from SAE.

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FOREWORD

This document standardizes, to the greatest extent possible, the software quality management system requirements for the aerospace industry. The establishment of common requirements for use at all levels of the supply-chain by organizations around the world should result in improved quality and safety, and decreased costs, due to the elimination or reduction of organization-unique requirements and the resultant variation inherent in these multiple expectations.

STRUCTURE

HOW TO USE THIS SUPPLEMENT

This supplement to AS9100A is intended to clarify unique requirements for the supplier of deliverable software. The software may be embedded or loadable into a target computer by the same organization. Software may also be delivered as an end item from a software-only organization. In either case, the organization must meet the requirements of AS9100 and this supplement.

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INTRODUCTION

General

Where necessary, the quality management system requirements in AS9100A have been clarified for software. Where a paragraph within AS9100A does not need to be clarified for software, the requirements as stated in AS9100A apply.

Process Approach

The basic requirements of AS9100A apply. No additions or clarifications required for software.

1. SCOPE:

1.1 General:

The basic requirements of AS9100A apply with the following clarifications.

This document supplements the requirements of AS9100A for deliverable software.

This supplement contains Quality System requirements for suppliers of products that contain deliverable embedded or loadable airborne, spaceborne or ground support software components that are part of an aircraft Type Design, weapon system, missile or spacecraft operational software and/or support software that is used in the development and maintenance of deliverable software. This includes the host operating system software including assemblers, compilers, linkers, loaders, editors, code generators, analyzers, ground simulators and trainers, flight test data reduction, etc., that directly support creation, test and maintenance of the deliverable software. Where Commercial-Off-The-Shelf (COTS) or non-developmental components are integrated into a deliverable product, the organization and the customer shall agree on the extent of applicability of this supplement. The organization shall demonstrate that the software development infrastructure is in compliance with AS9100.

This document also applies to firmware as defined herein. It does not apply to programmable logic devices, including fuse-link or reconfigurable parts such as Application Specific Integrated Circuits, (ASIC) or Field Programmable Gate Arrays (FPGA). ASICS AND FPGA'S are addressed by RTCA/DO-254.

1.2 Application:

The basic requirements of AS9100A apply. No additions or clarifications required for software.

2. NORMATIVE REFERENCE:

The basic requirements of AS9100A apply. No additions or clarifications required for software.

3. TERMS AND DEFINITIONS:

The following terms are important to the understanding of this supplement and are included here for ease of use of the supplement.

baseline: The approved, recorded configuration of one or more configuration items, that thereafter serves as the basis for further development, and that is changed only through change control procedures. [RTCA/DO-178B]

configuration item: (1) One or more hardware or software components treated as a unit for configuration management purposes. (2) Software lifecycle data treated as a unit for configuration management purposes. [RTCA/DO-178B]

COTS - Commercial-Off-The-Shelf: Commercially available applications sold by vendors through public catalog listings. Contract-negotiated software developed for a specific application is not COTS software. [RTCA/DO-178B]

development: a software life cycle process that contains the activities and support for requirements analysis, design, coding, integration, testing, installation and acceptance of software products. The term “support” within the development lifecycle may include the activities and processes of:

- project management,
- configuration management,
- verification,
- regulatory authority liaison,
- safety,
- reliability and maintainability, and
- assurance.

escalation: Process for raising to a higher authority the responsibility to disposition nonconformances, process changes or deviations from contractual requirements and established standards.

firmware: An ordered set of instructions and associated data stored in a way that is not dynamically changeable; for example, microprograms stored in Read-Only Memory (ROM). [ANSI X3.172-1995]

functional requirements: A requirement that specifies a function that a system or system component must be able to perform. [IEEE-STD-610]

monitoring: The act of witnessing or inspecting selected instances of test, inspections, or other activity, or records of those activities, to assure that the activity is under control and that the reported results are representative of the expected results. Monitoring is usually associated with activities done over an extended period of time where 100% witnessing is considered impractical or unnecessary. Monitoring permits authentication that the claimed activity was performed as planned. [RTCA/DO-178B]

3. (Continued):

non-developmental software: Deliverable software that is not developed under the contract but is provided by the contractor, the Government, or a third party. Non-developmental software may be referred to as reusable software, Government furnished software, or commercially available software, depending on its source. [DOD-STD-2167A]

release: A particular version of a configuration item that is made available for a specific purpose (for example, test release). [ISO/IEC 12207]

replication: Copying a software product from one medium to another.

software: Computer programs and, possibly, associated documentation and data pertaining to the operation of a computer system. [RTCA/DO-178B] The executable programming logic and data that are embedded in hardware devices are considered to be included in this definition.

software development infrastructure: Includes the management and assurance of the activities and processes required to develop software.

software item: Any identifiable part of a software product.

software life cycle: (1) an ordered collection of processes determined by an organization to be sufficient and adequate to produce a software product. (2) The period of time that begins with the decisions to produce or modify a software product and ends when the product is retired from service. [RTCA/DO-178B]

software product: The set of computer programs, procedures and possibly associated documentation and data. [ISO/IEC 12207]

NOTE: A software product may be designated for delivery, an integral part of another product, or used in the development process.

NOTE: This is different than a product in ISO 9000.

stage: A defined segment of work.

NOTE: A stage does not imply the use of any specific life cycle model. The term stage is synonymous here with the term phase used in ISO/IEC 12207.

support software: Software that aids in the development or maintenance of other software. For purposes of this standard, support software includes system software used to facilitate the operation and maintenance of a computer system and its associated programs. [IEEE-STD-610]