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FOREWORD

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The main task of IEC technical committees is to prepare International Standards. However, a technical committee may propose the publication of a technical report when it has collected data of a different kind from that which is normally published as an International Standard, for example "state of the art".

ISO/IEC TR 14165-313, which is a technical report, has been prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

A list of all currently available parts of the ISO/IEC 14165 series, under the general title *Information technology – Fibre channel*, can be found on the IEC web site.

This Technical Report has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the second title page.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

INTRODUCTION

This technical report defines a set of features necessary to implement a real-time fibre channel network (switched fabric or arbitrated loop) supporting the FC-AE-ASM Upper Level Protocol.

The FC-AE-2 task group determined that it was best to allow profiles defined in the FC-AE technical report to be updated independently. This report is the first update to the FC-AE-ASM protocol since FC-AE was released. It is recommended for new designs, but does not obsolete 4.1 in INCITS TR-31-2002.

The intended usage of this technical report is avionic command, control, instrumentation, simulation, signal processing, and sensor/video data distribution. These application areas are characterized by a variety of requirements, among them a need for high reliability, fault tolerance, and deterministic behaviour to support real-time control/response.

This technical report is divided into 4 clauses:

Clause 1 is the scope.

Clause 2 enumerates the normative references.

Clause 3 describes the terms, definitions, abbreviations and conventions.

Clause 4 defines the FC-AE-ASM Upper Level Protocol. It lists features defined in the *FC-FS-2*, *FC-AL-2* and *FC-LS* standards and indicates whether the features are required, prohibited, allowed, or invocable in FC-AE-ASM. FC-AE-ASM places certain restrictions on the referenced standards in order to improve support for low latency, real-time applications.

INFORMATION TECHNOLOGY– FIBRE CHANNEL –

Part 313: Avionics environment – Anonymous synchronous messaging (FC-AE-ASM)

1 Scope

Fibre Channel Avionics Environment (FC-AE)[1] is a group of protocols and profiles that specify Fibre Channel options for devices connected by fabric and/or loop topologies that are pertinent to their use in commercial and military aerospace industries. The primary areas of interest include avionic command, control, instrumentation, simulation, signal processing and sensor/video data distribution. These application areas are characterized by a variety of requirements, among them a need for high reliability, fault tolerance, and deterministic behavior to support real-time control/response.

This part of ISO/IEC 14165 is intended to support bi-directional communication between two N_Ports in a constrained and carefully defined environment, typical of avionics applications.

The primary objective of this part of ISO/IEC 14165 is to maximize the likelihood of interoperability between conforming implementations. This technical report Prohibits or Requires features that are optional and Prohibits the use of some non-optional features in the referenced standards.

A second objective of this technical report is to simplify implementations and their associated documentation, testing, and support requirements. It does not define internal characteristics of conformant implementations, and it incorporates features from the referenced standards.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 14165-122, *Information technology – Fibre channel – Part 122: Arbitrated loop-2 (FC-AL-2)*

ISO/IEC TR 14165-312, *Information technology – Fibre channel – Part 312: Avionics environment upper layer protocol (FC-AE 1553)*

ANSI/INCITS 424-2007, *Information Technology – Fibre Channel – Framing and Signaling-2 (FC-FS-2)*

ANSI/INCITS 433-2007, *Information Technology – Fibre Channel – Link Services (FC-LS)*

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1 See ISO/IEC TR 14165-312 (report number INCITS TR-31-2002).