

Reaffirmed as
INCITS TR-41-2006/AM1-2008 (R2019)

*INCITS Technical Report
for Information Technology –
Fibre Channel –
Avionics Environment –
Anonymous Subscriber Messaging –
Amendment 1
(FC-AE-ASM/AM1)*

INCITS TR-41-2006/AM1-2008

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INCITS TR-41-2006/AM1-2008

Amendment to
INCITS TR-41-2006

**INCITS Technical Report
for Information Technology –
Fibre Channel –
Avionics Environment –
Anonymous Subscriber Messaging –
Amendment 1
(FC-AE-ASM/AM1)**

Secretariat

Information Technology Industry Council

Abstract

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/AM1 Upper Level Protocol. Any device complying with this report should interoperate with other devices that comply with this technical report. The FC-AE-ASM/AM1 was first defined in the FC-AE technical report, INCITS TR-31-2002. It was then updated in FC-AE-ASM technical report, INCITS TR-41-2006. This technical report is an update to FC-AE-ASM.

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Published by

**American National Standards Institute
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Printed in the United States of America

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Foreword (This foreword is not part of American National Standard INCITS TR-41-2006/AM1-2008.)

The original Fibre Channel Avionics Environment (FC-AE) technical report, INCITS TR-31-2002, is a set of protocols and profiles that specify Fibre Channel options for devices that could be used in commercial and military aerospace applications. The FC-AE-2 working group determined that it was best to allow protocols and profiles defined in FC-AE to be updated independently. The Fibre Channel Anonymous Subscriber Messaging (FC-AE-ASM) technical report, INCITS TR-41-2006, was the first update to FC-AE-ASM since FC-AE was released. This technical report is an update to INCITS TR-41-2006. This technical report is recommended for new designs but does not obsolete 4.1 of INCITS TR-31-2002 or INCITS TR-41-2006.

This technical report amendment was developed by Technical Committee T11 of Accredited Standards Committee INCITS during 2007-2008. The final approval process started in 2008.

Requests for interpretation, suggestions for improvements or addenda, or defect reports are welcome. They should be sent to the INCITS Secretariat, Information Technology Industry Council, 1250 Eye Street, NW, Suite 200, Washington, DC 20005-3922.

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Introduction

The Fibre Channel Anonymous Synchronous Messaging (FC-AE-ASM) 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.

FC-AE-ASM/AM1 is intended to support bidirectional communication between two N_Ports in a constrained and carefully defined environment, typical of avionics applications. The intended usage 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 behavior to support real-time control/response.

This technical report is divided into four clauses:

Clause 1 is the scope of this technical report.

Clause 2 enumerates the references that apply to this technical report.

Clause 3 describes the definitions, abbreviations, and conventions used in this technical report.

Clause 4 defines the FC-AE-ASM/AM1 Upper Level Protocol. This clause lists features defined in the FC-FS-2, FC-AL-2 (including Amendments 1 and 2) and FC-LS standards and indicates whether the features are Required, Prohibited, Allowed, or Invocable in FC-AE-ASM/AM1. FC-AE-ASM/AM1 places certain restrictions on the referenced standards in order to improve support for low latency, real-time applications.

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for Information Technology –

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Amendment 1
(FC-AE-ASM/AM1)

1. Scope

Fibre Channel Avionics Environment (FC-AE), report number INCITS TR-31-2002, 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.

The FC-AE-2 working group determined that it was best to allow profiles defined in the FC-AE technical report to be updated independently. This technical report is the first update to the FC-AE-ASM/AM1 protocol since FC-AE was released. This technical report is recommended for new designs, but does not obsolete clause 4.1 in INCITS TR-31-2002.

The primary objective of this technical report 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 ANSI/INCITS standards.

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