



FAS Topic Paper (FTP)		
TITLE	REVISION	REVISION DATE
FTP1026 Field Loadable Software (FLS) Outside of Installed Environment	3	03-Dec-2020
ABSTRACT/PURPOSE:		
<p>This FTP clarifies the intended scope of Field-Loadable Software (FLS). Currently FLS is limited to the software being loaded without being removed from “the installation” (typically the aircraft itself) although the intent is clearly that provisions should cover all software loads remote to the factory or controlled environment under which software is loaded for the purposes of production.</p>		
RELATED DO/ED DOCUMENTS:		
<p><input checked="" type="checkbox"/> DO-178C/ED-12C: SW Airborne Sys & Equip <input type="checkbox"/> DO-278A/ED-109A:SW (CNS/ATM) Systems <input checked="" type="checkbox"/> DO-248C/ED-94C: Supporting Information <input type="checkbox"/> DO-330/ED-215: Software Tool Qualification Considerations <input type="checkbox"/> DO-248C/ED-94C: Supporting Information <input type="checkbox"/> DO-332/ED-217: OO Technology and Related Techniques Supplement <input type="checkbox"/> DO-333/ED-216: Formal Methods Supplement <input type="checkbox"/> Other</p>		
<p><i>For internal use only—This paper is based on internal FAS FTP1026 Revision 1</i></p>		

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FAS Team Definition and Goals:

The FAS user group monitors and exchanges information on the application of the following “software document suite” that was developed by joint RTCA/EUROCAE committee SC-205/WG-71:

- DO-178C/ED-12C - Software Considerations in Airborne Systems and Equipment Certification
- DO-278A/ED-109A - Software Integrity Assurance Considerations for Communication, Navigation, Surveillance and Air Traffic Management (CNS/ATM) Systems
- DO-248C/ED-94C - Supporting Information
- DO-330/ED-215 - Software Tool Qualification Considerations
- DO-331/ ED-218 - Model Based Development & Verification Supplement
- DO-332/ED-217 - Object Oriented Technology and Related Techniques Supplement
- DO-333/ ED-216 - Formal Methods Supplement

The goals of the FAS user group are as follows:

1. To share lessons learned in the use of the RTCA/EUROCAE “software document suite” and to encourage good practices and promote the effective use of RTCA’s and EUROCAE’s publications.
2. To develop FAS Topics Papers (FTP’s) relative to RTCA’s and EUROCAE’s publications or other related aeronautical software industry topics. These FTP’s may include clarification to the “software document suite” or a discussion on a new topic.
3. To identify and record any issues or errata showing the need for clarifications or the need for modifications to the “software document suite”.

The FAS user group does not have the authority to change the content of any approved RTCA/EUROCAE documents. Any publications of the FAS user group may be taken into consideration by a future RTCA/EUROCAE working group.

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Abstract / Purpose of the FAS Topic Paper:

This FTP clarifies the intended scope of Field-Loadable Software (FLS). Currently FLS is limited to the software being loaded without being removed from “the installation” (typically the aircraft itself) although the intent is clearly that provisions should cover all software loads remote to the factory or controlled environment under which software is loaded for the purposes of production.

FTP Discussion:

Question from Industry:

Are the field-loadable software provisions only applicable to equipment being loaded with software while installed in its operational environment?

Response from FAS:

No. The text of DO-178C/ED-12C Paragraph 2.5.5 indicates that the field-loadable software provisions are limited to the software being loaded without the equipment or programmed device being removed from “the installation” (typically the aircraft itself). Nevertheless, the provisions for field-loadable software should be applied to all software loads conducted remotely from the facility where the software was loaded for production, regardless of whether the equipment has been removed from its installation or not. Such loads might be made in the cockpit by loading the software through media inserted in to the LRU, using a cable and portable loading equipment connected to an LRU in the avionics bay, using a laptop on a hangar bench or potentially via wireless means. It also encapsulates the loading of equipment which has been removed from its installation, in a hangar, in spares holdings, etc.