



# Small aircraft standards

General Aviation

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# Introduction

The certification process for system development (safety & system development) in the general aviation is very expensive

**Same process**



ARP-4754A & ARP-4761

# General Aviation



- Applicability

- §23.2005 Certification of normal category airplanes.

(a) Certification in the normal category applies to airplanes **with a passenger-seating configuration of 19 or less and a maximum certificated takeoff weight of 19,000 pounds or less.**

(b) Airplane certification levels are:

(1) Level 1—for airplanes with a maximum seating configuration of 0 to 1 passengers.

(2) Level 2—for airplanes with a maximum seating configuration of 2 to 6 passengers.

(3) Level 3—for airplanes with a maximum seating configuration of 7 to 9 passengers.

(4) Level 4—for airplanes with a maximum seating configuration of 10 to 19 passengers.

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How does develop an aircraft **safe** and **more cost effective** with an equivalent safety level of commercial aviation for small aircraft?



# Proposed Solution

Introduce the STAMP (STPA) methodology as alternative means of compliance of the transport category airplanes (commercial aviation) process.



Designation: X°XXXX-XX¶

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Work Item Number: WK60748¶

Date: October 31, 2017

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## Standard Guide for Application of Systems-Theoretic Process Analysis to Aircraft¶

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This standard is issued under the fixed designation X°XXXX; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.¶

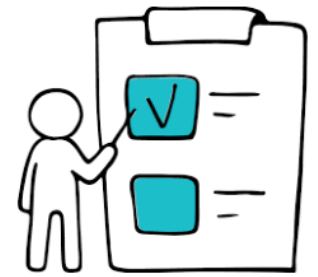
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### 1. Scope¶

1.1 This guide covers how to prepare a hazard analysis using Systems-Theoretic Process

Analysis (STPA) to meet applicable airworthiness requirements.¶

# Actions & Plans



- Embraer proposed an alternative methodology using STPA for scope of system development **guided by safety** in the ASTM:
  - Oct/2017: Embraer/MIT proposed a new guide standard;
  - Mar/2018 Publish the draft of guide standard for review
  - Apr/2018: 1<sup>st</sup> meeting in ASTM to discuss face a face the proposal by committee

## WK60748 New Guide for Application of Systems-Theoretic Process Analysis to Aircraft

### Work Item

This standard provides guidance on the usage of Systems-Theoretic Process **A**nalysis (STPA) techniques to aircraft. Provides a simplified and more rigorous approach to establishing design requirements for complex systems.

- Standard expected to be released in 4Q/2019



 **EMBRAER**

Thank you!

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