

# Use of Dynamic Analysis Methods in Aircraft Certification

Presented to: *Use of Dynamic Analysis Methods in Aircraft Certification Workshop*

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Federal Aviation  
Administration



# Welcome

- **Purpose**
- **Introductions**
  - Sign in sheet
- **Logistics**
- **Agenda**



# Purpose

- **Review current state of use of dynamic analysis in aerospace applications**
  - Certification
  - Industry
  - Other agencies
- **Review calibration**
- **AC changes**

# Workshop Presentations

- Review material
- Current guidance and application of guidance/policy, industry documents
- Works in progress
- Other agency applications
- Material from other organizations
- Ending with open discussion
- Will be available post - meeting



# Agenda

- Go to Word



# Activities

- **LS-Dyna Aerospace Working Group**

- <http://awg.lstc.com/>
- Engine Related Impact Failure
- Cabin Interiors

A partnership of federal agencies, corporations, and universities working together to develop and publish aerospace test cases and modeling guidelines for finite element analyses with LS-DYNA®. The actions of the AWG serve to support the use, development, and reliability of LS-DYNA® for aerospace numerical analyses

# Activities

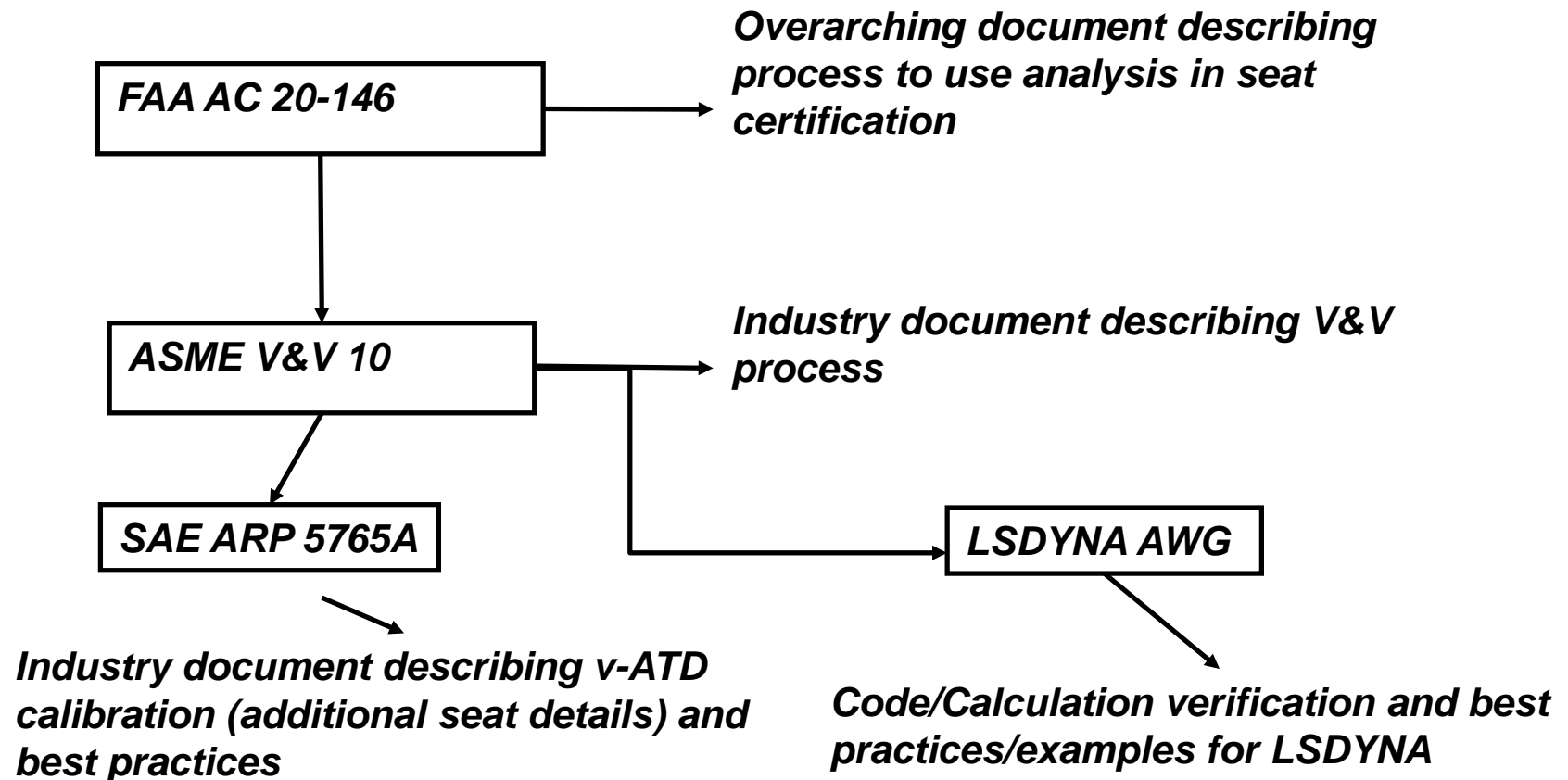
- **LS-Dyna Aerospace Working Group**
  - Yearly face to face meeting
  - Several telecons in between
  - Working to develop Modeling Guidelines and test cases
  - Will help support code and calculation verification and configuration control

# Activities

- **FAA AC 20-146A, Methodology for Dynamic Seat Certification by Analysis for Use in Parts 23, 25, 27, and 29 Airplanes and Rotorcraft**
- **<http://rgl.faa.gov> Search for advisory circulars then by date**
  - Published 29 June 2018
- **Was a mild update, but contains key concepts that will form basis for future efforts**
  - Additional details to be discussed later



# Guidance



# Goals

- **Review material and progress**
- **Continue learning and applying**
- **Discuss future plans**
- **Continue progress!**



# *Questions?*



# Day 1 Recap

- Review of guidance material
- Prepare comments for Change 1 in the afternoon
- Today will be additional technical discussions



# Summary

- **Was a packed 1.5 days**
  - Longer – shorter – just right?
  - After SAE ok?
  - Presentations will be available soon
- **Feedback appreciated**
- **Continue discussions and development**
  - Goal to be more inclusive
  - Continue path of commonality, or just focus on individual disciplines?
- **Recommendations for future meetings**