Information on the ongoing work on CS-AWO

9th November 2016

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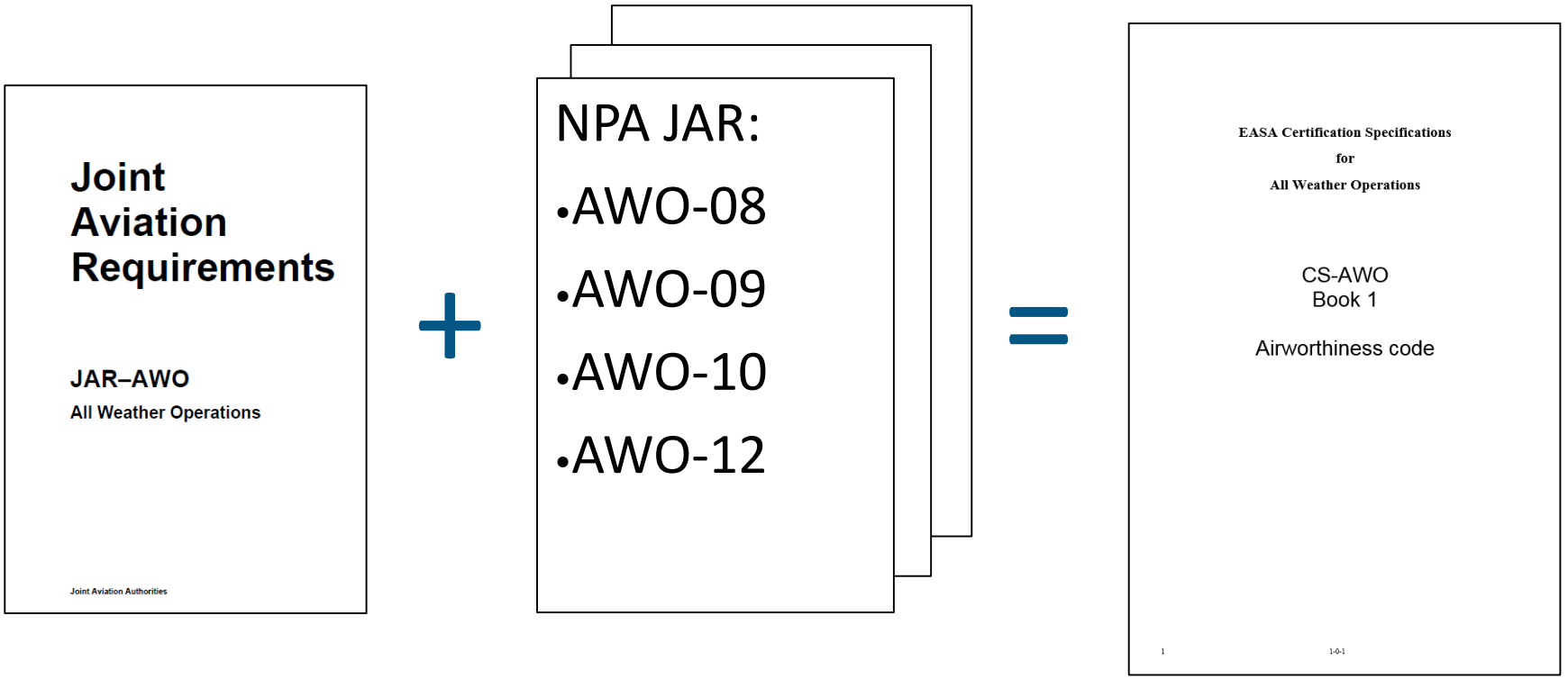
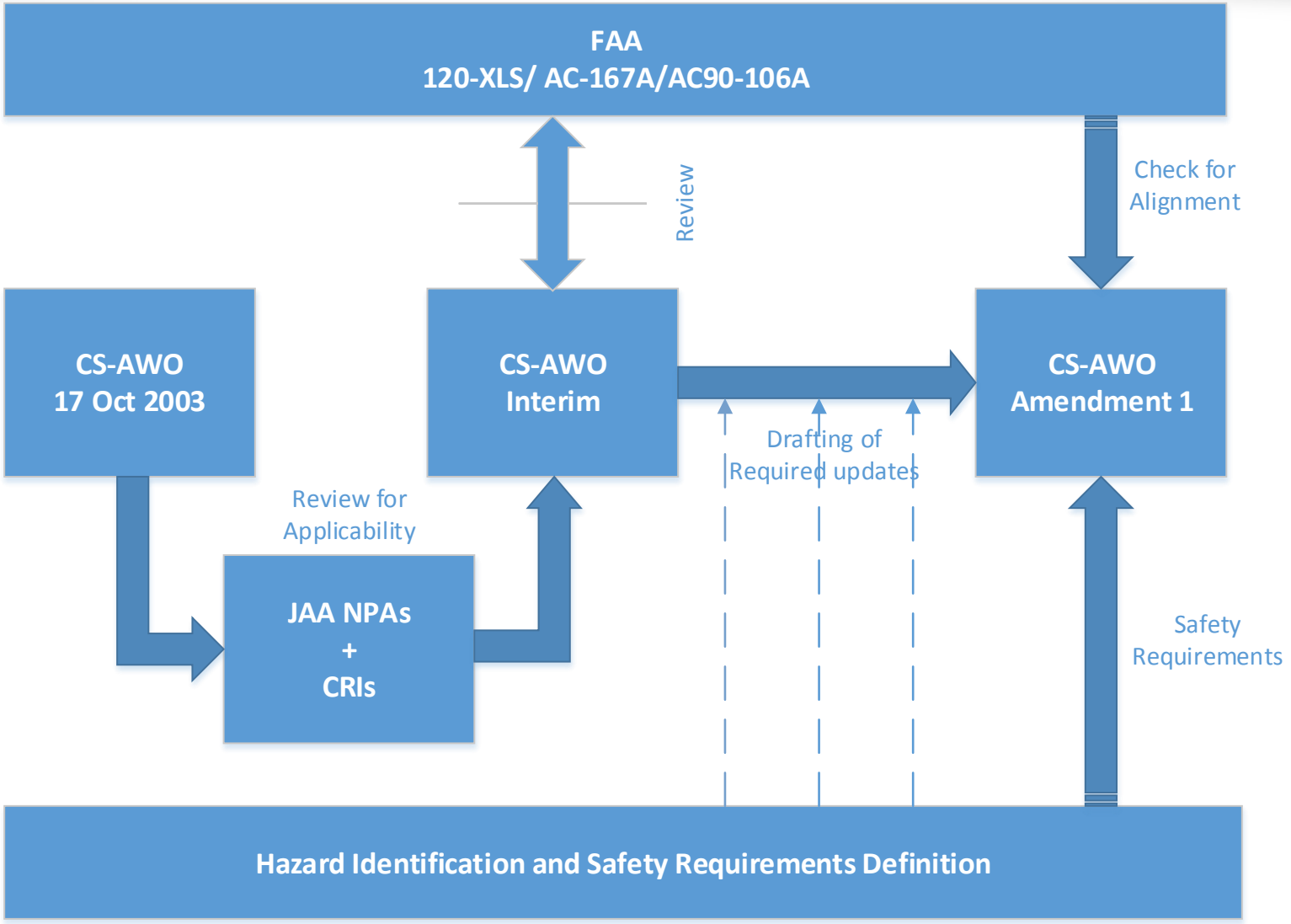
Introduction

- The EASA Team:
  - Carl Garvie - Certification Directorate Rulemaking Officer and AWO Focal point
  - Frans Van Gorkum - Avionics Systems Expert
  - Vincenzo Pennetta - Flight Test Engineer
  - Jean Baron - Senior Expert Display

Evolution of CS-AWO



Strategy/Concept



Strategy/Concept

- The following JAA NPAs have been incorporated in the interim document:

NPA No.	Description
JAR AWO-11	High Altitude Landing System Performance
JAR AWO-13	Introduction of Head-Up Guidance Landing System Requirements
JAR AWO-14	Structural Limit Loads and Lateral Touchdown Performance
JAR AWO-15	Autobrake for Category 3B and Anti-Skid Issues
JAR AWO-16	JAR/FAR 25.1329 harmonisation plus other points
JAR AWO-17	Super Fail-Passive Cat 3 Operations and additional Guidance Material

Strategy/Concept

- The following EASA CRIs have been incorporated in the interim document:

CRI	Description
CRI K-02	Automatic Landing Distance
CRI K-07	GBAS Landing System for Cat 1 Operations
CRI K-09	Extrapolation of Wind Limits for Autoland Demonstration

Proposed CS-AWO Structure

Subpart A General	
Subpart B Approach and Landing	
Section 1	Automatic Landing Systems
Section 2	Airworthiness Certification of Aircraft for Type B Operations with Decision Heights/Altitude **below 200 ft down to 100 ft** – Category 2 Operations
Section 3	Airworthiness Certification Of Aircraft for Type B Operations with Decision Heights/Altitude **below 100 ft or No Decision Height** – Category 3 Operations

Proposed CS-AWO Structure

Subpart A General	
Subpart B Approach and Landing	
Section 4	Airworthiness Certification of Aircraft for Type B Operations With Decision Heights/Altitude **below 250 ft down to 200 ft** – Category 1 Operations
Section 5	Airworthiness Certification of Aircraft for Type B Operations with Decision Heights/Altitude **below 200 ft down to 150 ft** – Special Authorisation Category 1 Operations **Not** Using Synthetic Vision Guidance Systems (SVGS)
Section 6	Airworthiness Certification of Aircraft for Type B Operations with Decision Heights/Altitude **below 200 ft down to 150 ft** – Special Authorisation Category 1 Operations Using Synthetic Vision Guidance Systems (SVGS)
Section 7	Airworthiness Certification of Aircraft equipment eligible for Operational Credits for visual segment in reduced RVR

Proposed CS-AWO Structure

Subpart C Take Off	
Section 1	Airworthiness Certification of Aircraft for Take-off operations in low visibility

Additional contents for CS-AWO

- Special Authorisation CAT I (SA CAT I) section is based on amended CS-AWO CAT II Section.
- Current eligible SA CAT I technologies include:
  - HUD (or equivalent) with flight guidance which is approved for ILS (or equivalent) manual operation down to 36 m (120ft).
  - Synthetic Vision and Guidance System displayed on the primary flight display or HUD (or equivalent), and high precision position assurance monitoring.
    - SA CAT I Section for Synthetic Vision and Guidance System (SVGS) based upon DO-359

Additional contents for CS-AWO

- With the protection of the ILS critical and sensitive areas the following configurations are eligible for SA CAT I:
  - Automatic approach system coupled down to 36 m (120 ft) with a HUD (or equivalent)
  - Automatic landing system alone, provided it is demonstrated that failures linked to Category 1 beam can be recognised by pilot in visibility conditions.
  - Automatic landing system with a HUD (or equivalent) to monitor the autoland path along the Category 1 beam before and after decision height.

Additional contents for CS-AWO

- Aircraft equipment eligible for Operational Credits for Visual Segment in reduced RVR
- Enhanced Flight Vision Systems displayed on a HUD (or an equivalent display)
  - EFVS I used for instrument approach operations from DA/DH or MDA to 100 HAT
  - EFVS II used for instrument approach operations from DA/DH or MDA to touchdown
- Based upon FAA AC 20-167A (draft), DO-315B and DO-341

Next Steps

- CS-AWO Workshop #1 held on 12-14 September 2016
- Progress was achieved and a number of general agreements were made
- A number of inputs to CS-AWO have been received and will be progressed at the CS-AWO Workshop #2 on 10 November 2016

EASA
European Aviation Safety Agency

Thank you!

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