EUROCAE WG114 – SAE G34: a joint standardization initiative to support Artificial Intelligence revolution in aeronautics

Beatrice PESQUET-POPESCU
Thales LAS, co-chair of EUROCAE WG-114 Group
Objective & Scope of EUROCAE WG-114

- Creation: June 2019 (KOM end of August 2019)

- Objective: establish common standards, guidance material and any related documents required to support the development and the certification/approval of aeronautical safety-related products based on AI-technology

- Scope:
  - Airborne: Aircrafts and UAS
  - Ground: UTM, ATM and Air Traffic Solution
A joint group with SAE G-34 (AI in Aviation)

500+ engineers
Researchers and AI scientists from across the globe, with representation from regulators and authorities (FAA, EASA, TCCA, ANAC, EDA, NASA, DOD, EUROCONTROL), major airframers, UAS/UAM/eVTOL manufacturers, engine manufacturers, component manufacturers, technology providers, and other stakeholders, including operators and airlines.

Special thanks to all contributors

G-34/WG-114 focuses on implementation and certification related to AI technologies for the safer operation of aerospace systems and aerospace vehicles.

G-34/WG-114 (comprised of 500+ members) promotes and standardizes Artificial Intelligence in the entire aviation ecosystem (both Airborne and Ground) addressing both manned and UAS.


Works in Progress and deliverables:

- **AS5983** Process Standard for Development and Certification/Aproval of Safety-Related Products Implementing AI
- **AIR6987** Artificial Intelligence in Aeronautical Systems: Taxonomy
- **AIR6988** Artificial Intelligence in Aeronautical Systems: Statement of Concerns
- **AIRxxxx** Artificial Intelligence in Aeronautical Systems: Use Cases Considerations

For more information and/or membership registration, contact: jordanna.bucciarelli@saes.org and/or anna.guesgan@eurocae.net.
Liaisons with other Groups
(*) active ones are bolded

• EUROCAE
  – WG-63 (Complex A/C systems)
  – WG-72 (Aeronautical Systems Security)
  – WG-105 (Unmanned A/C Systems - UAS)
  – WG-112 (Vertical Take-Off and Landing – VTOL)
  – WG-117 (Topics on SW advancement)

• SAE
  – S-18 (Complex A/C systems & UAS Autonomy)
  – G-32 (Cyber Security)

• Others
  – AVSI - AFE87
  – EUROCONTROL AI High Level Experts Group
  – ISO/IEC JTC 1/SC 42
  – French Grand Defi CONFIANCE.AI
  – JARUS (Joint Authorities for Rulemaking on Unmanned Systems)
  – ASTM
EC / EASA Challenges for AI Trustworthiness

EC / EASA => High level objectives / framework for ML development and approval

WG114/G34 => detailed technical industry standards for ML development and approval
WG-114/G-34 Roadmap

Deliveries
- SOC (Statement of Concerns) – ER/AIR
- Taxonomy, Use Cases – ER/AIR
- Std Issue 1: ML (Offline Learning) – ED/AS
- Std Issue 2: Other AI Technologies – ED/AS

2020 SOC

2021 ERs

2022 Std Iss 1

2024 Std Iss 2

AI ROADMAP DELIVERABLES

Phase I: exploration and first guidance development
Phase II: AI/ML framework consolidation

2021 First usable guidance for Level 1 AI/ML (human assistance/augmentation)
2022 First usable guidance for Level 2 AI/ML (human/machine collaboration)
2024 First usable guidance for Level 3 AI/ML (more autonomous machine)
2026 Finalized guidance for Level 1 and 2 AI/ML

FlyAI webinar – April 28th, 2021
THANK YOU FOR YOUR ATTENTION!

Questions?

Source: https://xkcd.com/