EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT

EASA – Rulemaking Activities

presented by
Remi Deletain (Powerplant Senior Expert)
Enzo Canari (Cabin Safety Expert)
IASFPF Meeting
Atlantic City, 31st October 2018

Your safety is our mission.
easa.europa.eu

EASA – Rulemaking Activities

- Halon Replacement Status
- EASA Proposed Certification Memorandum on Smoke Propagation Testing
- Powerplant / Propulsion Fire

Halon Replacement Status

EASA – Rulemaking Activities

EASA Proposed Certification Memorandum on Smoke Propagation Testing

- The purpose of this CM is to provide specific clarification and additional guidance regarding certification testing to be conducted to evaluate the entry of hazardous quantities of smoke into compartments occupied by the crew or passengers as a result of an in-flight fire event in the pressurized areas of the fuselage of a large aeroplane.

- Further coordination with the FAA is needed in order to propose a policy that is fully harmonized.

- EASA intends to start the public consultation phase for the Proposed CM in Q1 2019.

EASA – Rulemaking Activities

Powerplant/Propulsion Fire

EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT

Questions?

EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT

EASA – Halon Replacement Status

presented by
Enzo Canari
Cabin Safety Expert
IASFPF Meeting
Atlantic City 31st October 2018

Halon Replacement Dates

Dates for halon replacement					
Purpose	Location of fire extinguishers	ICAO	Regulation (EU) No 1005/2009	Agency	
				CSs	Opinion 08/2016
End date Mandatory Retrofit	Normally unoccupied cargo compartments	No retrofit mandated by ICAO	2040	Not proposed [but the dates in Regulation (EU) No 1005/2009 directly apply unless there is a case by case derogation obtained per Article 13(4) of Regulation (EC) No 1005/2009]	
	Hand-held in cabins and crew compartments		2025		
	Engine nacelles and APU		2040		
	Lavatory waste receptacles		2020		
Forward fit **New applications for individual Certificate of Airworthiness (CofA)**	Normally unoccupied cargo compartments	Not mentioned	Out of scope of Regulation (EU) No 1005/2009	Out of scope of CS-23, CS-25 and CS-29 (and of Part 21)	Not proposed
	Hand-held in cabins and crew compartments	2016 (Annex 6) 39th Assembly: shift to 2018			2018
	Engine nacelles and APU	Not mentioned			Not proposed
	Lavatory waste receptacles	2011			TBC
Cut off **New applications for type Certificates (new design)**	Normally unoccupied cargo compartments	2024	2018	Halon no longer mandated by 'Book 1' of CS-23, CS-25 and CS-29, but neither prohibited, until Regulation (EU) No 1005/2009 applies	Not proposed (out of scope of Part-26 and CS-26)
	Hand-held in cabins and crew compartments	Not mentioned	2014		
	Engine nacelles and APU	2014	2014		
	Lavatory waste receptacles	2014	2011		

- ***End Date:*** *i.e. date after which the use of halon would no longer be permitted; all halon fire extinguishers and fire protection systems should be replaced, converted or decommissioned by the end date.*
- ***Cut off:*** *No new application for Type Certificates possible if halon is present in the design.*
- ***Forward Fit:*** *For Lavatory EASA proposal is one year after publication of rule but the EC may decide for applicability from the pubblication date.*

DG-CLIMA maintains 2018 as Cut off date for Cargo Comp.

Halon Replacement Dates

- EASA / DG-CLIMA Discussion
  - Clarification of EC Regulation No. 1005/2009, i.e definition of new equipment vs EASA Change Product Rules (Part-21)
    - EC Regulation No. 1005/2009 has been amended (Ref. Commission Regulation (EU) 2017/605) to provide the following clarification:

      For reasons of legal clarity and consistency in the implementation of Regulation (EC) No 1005/2009, it is necessary to specify in the definition of 'new equipment' under point 2(b) of Annex VI to Regulation (EC) No 1005/2009 that for aircraft ***, request for type certification relates only to request for new type certification and does not cover changes to an existing type certification****. This would also be in line with the concept used for halon standards by the International Civil Aviation Organisation.*
    - The cut off dates in the EC Regulation will apply only to new TCs as per Part-21 definition.
  - Derogation process: entry point DG-CLIMA/Member State
    - Derogation process already filed to DG-CLIMA for Engine application by a EU member State in support of a EU Applicant.
    - Non-EU Applicants will have to contact directly DG-CLIMA to start the derogation process.
    - EASA will provide support (limited to the evaluation of the technical aspects of the derogation proposal) to DG-CLIMA upon request.

Halon Replacement Dates

- EASA / DG-CLIMA Discussion
  - Halon guide (DG-CLIMA / EASA) in preparation
    - The primary purpose of the guide is to clarify the implementation of Regulation (EC) No 1005/2009 (and subsequent amendments) for the aeronautical products.
    - The guide will be published on the websites of EASA and DG-CLIMA
    - Target for the release of the guide is Q1 2019
  - Working arrangement between EASA and DG-CLIMA to define respective roles and responsibilities on exchange of data/information related to Halon replacement activities

RMT Overview

- RMT.0560, Opinion 08/2016 issued
  - Title: Halon: Update of Part 26 to comply with ICAO standards
  - Applicability:
    - TOR Iss. 1: lavatory and handheld fire extinguisher for newly produced large aeroplane and rotorcraft
    - Note: CS-23/-27 not covered yet, will be treated as EASA internal task
  - Schedule:

NPA draft:	13.03.2014
Final draft NPA:	September 2014
NPA publication:	18.11.2014
CRD preparation:	18.03.2015 til end 2015
CRD & Opinion to EC:	02 Aug 2016
Commission regulation:	Amending Commission Regulation (EU) 2015/640
CS-26:	General agreement from the Member States on the EASA proposal. The text will be voted in the next weeks. Applicability will not be 31st December 2018, but should be " 3 months after adoption of the Regulation".

EASA Contacts

- For EASA Rulemaking activities:

  Youri Auroque (Regulations Officer)

- For applications related to Powerplant Systems:

  Remi Deletain (Powerplant Expert)

- For applications related to Cargo Compartments, Lavatories and Portable Fire Extinguishers:

  Thomas Manthey (Cabin Safety Expert)

EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT

Questions?

Your safety is our mission.
easa.europa.eu

EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT

EASA – Powerplant / Propulsion Fire

presented by
Remi Deletain (Powerplant Senior Expert)
IASFPF Meeting
Atlantic City, 31st October 2018

EASA – Powerplant / Propulsion Fire

- EACWG
  - **E**ngine **A**ircraft **C**ertification **W**orking **G**roup
  - Was born in Feb / March 2016 by EASA and FAA leadership
  - to look at improving engine/aircraft interface certification practices
  - tasked to conduct an in-depth review of current certification practices and processes, and to develop recommendations for EASA and FAA leadership
  - Triggered by aircraft certification programs where some engine-related issues have been raised by airworthiness authorities and applicants, even though the engine had its own type certificate (TC)
  - WG Members: EASA engine certification, EASA aircraft certification, FAA engine certification, FAA aircraft certification, Large Airplane TC Holders, Engine TC Holders

EASA – Powerplant / Propulsion Fire

- EACWG
  - Final Report delivered in June 2017 (See EASA website)
    - Survey for inputs from other Certifying Authorities, A/C TC holder, Engine TC Holder
    - 29 recommendations
    - Gathered in 6 areas:
      - Communication and timing;
      - Duplication of work;
      - Gaps in requirements;
      - Process;
      - Rules and interpretation; and
      - Technical and general.

EASA – Powerplant / Propulsion Fire

- EACWG
  - WG continues activities and worked on a more formal setting and establishement of activities
  - EACTB (Tracking Board) and associated charter - to ensure follow-up and progress on recommendations - was presented to CMT (Certification Management Team - EASA-FAA-TCCA-ANAC) and accepted to proceed
  - Not a dedicated CAG (Certification Authoritity Group i.e CAPP for Propulsion, CATA for Large Aircraft…) but will use CAPP and CATA for AA and Industries)

EASA – Powerplant / Propulsion Fire

- EACWG Coordination
  - Fire is one Item (R4.6) identified in R4 *Address specific rule and policy gaps* – See next Slide
    - Multiples topics
    - Multiple stakeholders
    - Interactions with industry working group (SAE A-22)

EACWG Coordination: Topics R4.6

- 1. Produce consistent FAA and EASA guidance on burner fuel use.
- 2. Produce consistent FAA and EASA guidance on the ground-after-landing condition.
- 3. Produce consistent FAA and EASA guidance on engine combustor burn through and engine mount fireproof-ness
- 4. SAE committee develop industry standards covering remaining gaps.
- 5. Revise AC 20-135 to incorporate content/results of SAE committee report
- 6. EASA revise AMC/ guidance to incorporate content/results of SAE committee report

EASA – Powerplant / Propulsion Fire

- Other engine/aircraft fire issues not covered by SAE WG
  - SAE WG will propose areas for AC 20-135 revision
  - AC 20-135 focuses on fire testing but has the power of having some inclusion of interpretations – however those interpretations will stick to the fire testing scope.
  - There are rules whose interpretations and acceptable mean of compliance does not uniquely include testing, therefore a need for supplementary interpretations.
  - There are (possible) impacted requirements that would need revision (i.e. CS-Definition , FAR-1)

EASA – Powerplant / Propulsion Fire

- Future EASA CM (engine/aircraft) & policy harmonisation
  - CM common for Propulsion and Powerplant
  - CM will cover
    - EASA needs for fire problematics
      - Not covered by SAE A-22 / AC 20-135
      - Not accepted from SAE A-22 / AC 20-135
  - Fire Testing Issues are planned to be adressed by AC 20-135 revision
    - SAE A-22 is intending to provide inputs to AC 20-135
    - May provide more than the AC 20-135 scope
    - May not cover all fire problematics
  - Ideally AC 20-135 could be adopted and entered into CS with a mirroring and self-sustaining AMC

EASA – Powerplant / Propulsion Fire

EASA needs

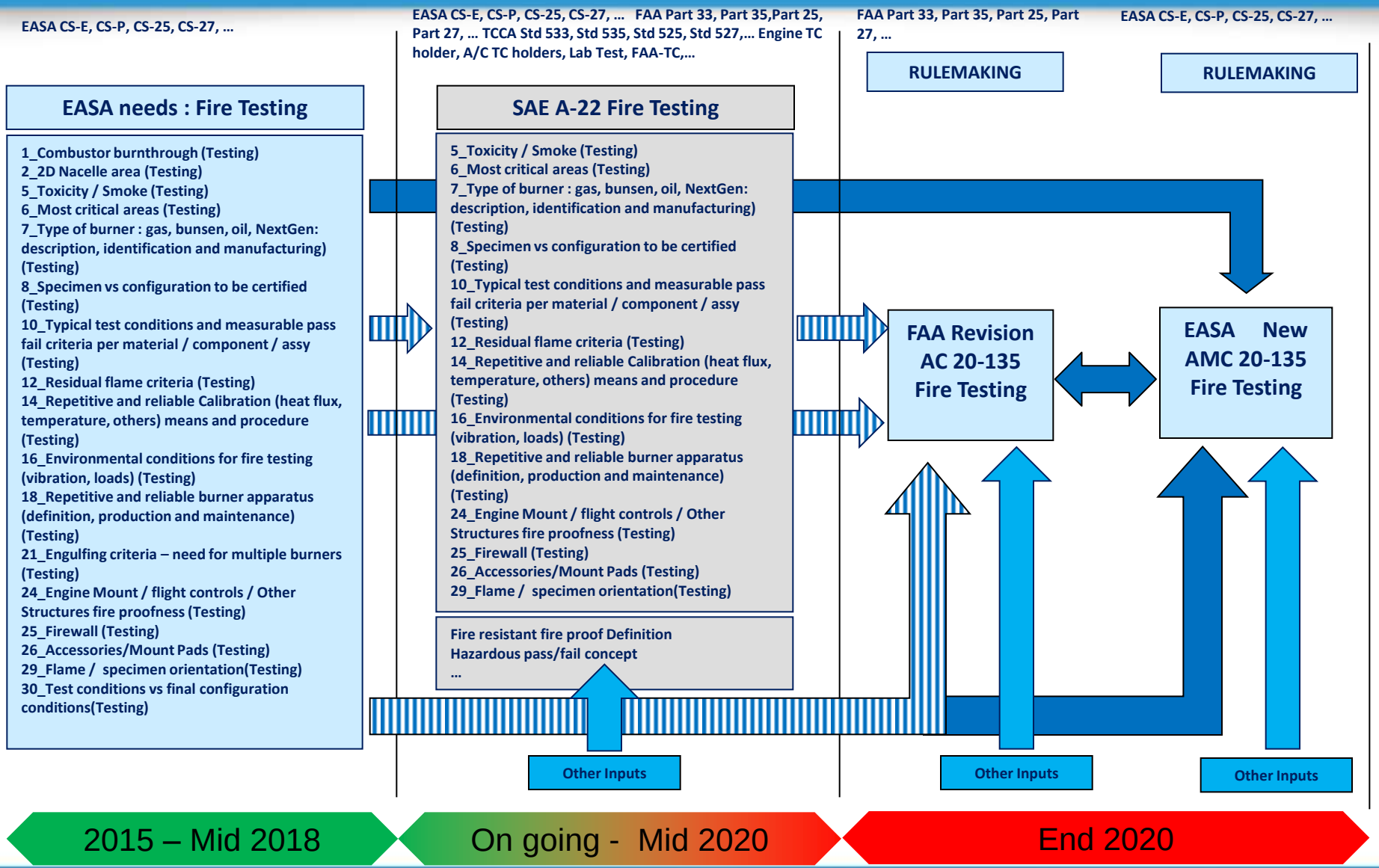
Fire Testing

1_Combustor burnthrough (Testing)
2_2D Nacelle area (Testing)
5_Toxicity / Smoke (Testing)
6_Most critical areas (Testing)
7_Type of burner : gas, bunsen, oil, NextGen: description, identification and manufacturing) (Testing)
8_Specimen vs configuration to be certified (Testing)
10_Typical test conditions and measurable pass fail criteria per material / component / assy (Testing)
12_Residual flame criteria (Testing)
14_Repetitive and reliable Calibration (heat flux, temperature, others) means and procedure (Testing)
16_Environmental conditions for fire testing (vibration, loads) (Testing)
18_Repetitive and reliable burner apparatus (definition, production and maintenance) (Testing)
21_Engulfing criteria – need for multiple burners (Testing)
24_Engine Mount / flight controls / Other Structures fire proofness (Testing)
25_Firewall (Testing)
26_Accessories/Mount Pads (Testing)
29_Flame / specimen orientation(Testing)
30_Test conditions vs final configuration conditions(Testing)

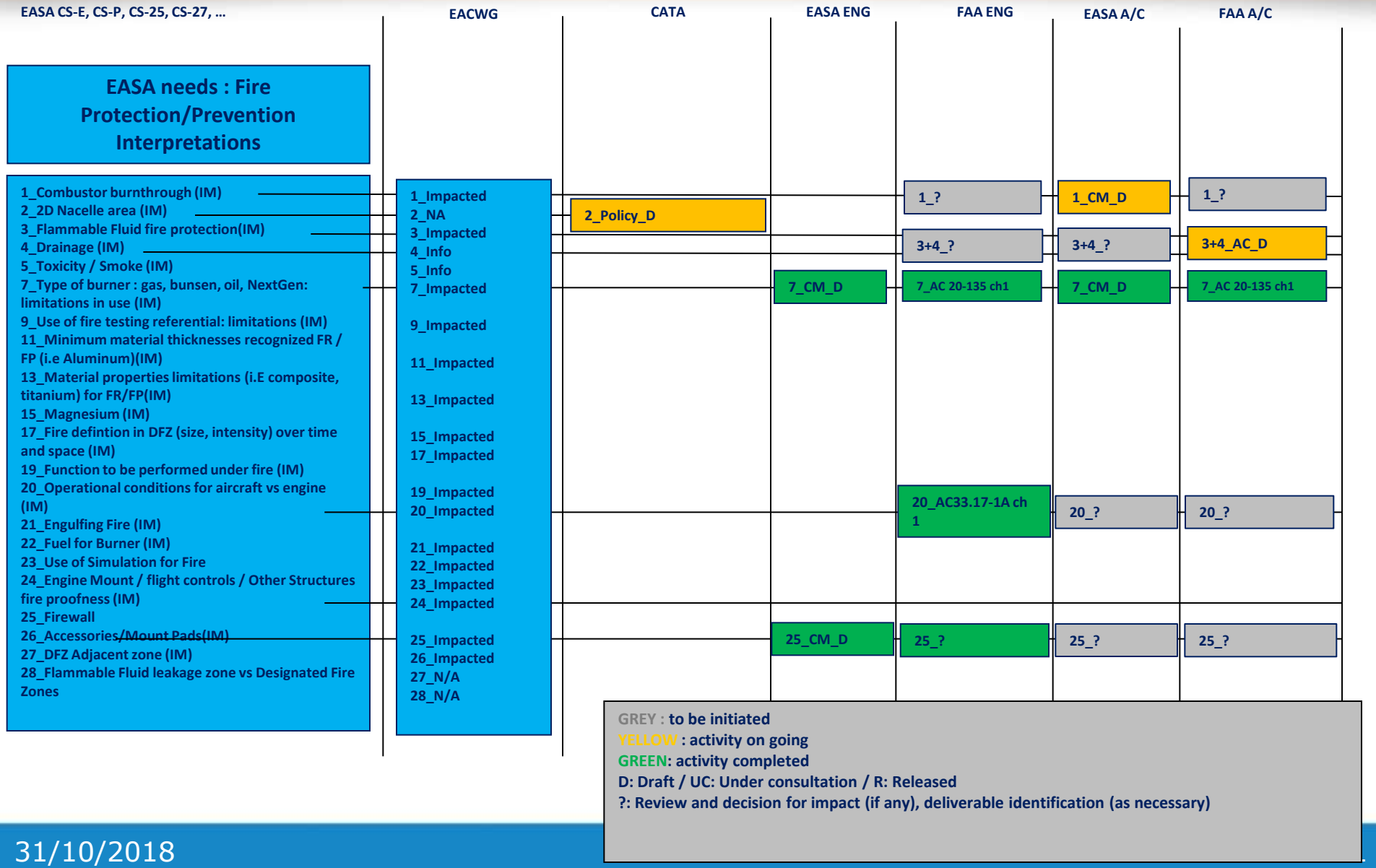
Fire Protection/Prevention Interpretations

1_Combustor burnthrough (IM)
2_2D Nacelle area (IM)
3_Flammable Fluid fire protection(IM)
4_Drainage (IM)
5_Toxicity / Smoke (IM)
7_Type of burner : gas, bunsen, oil, NextGen: limitations in use (IM)
9_Use of fire testing referential: limitations (IM)
11_Minimum material thicknesses recognized FR / FP (i.e Aluminum)(IM)
13_Material properties limitations (i.E composite, titanium) for FR/FP(IM)
15_Magnesium (IM)
17_Fire defintion in DFZ (size, intensity) over time and space (IM)
19_Function to be performed under fire (IM)
20_Operational conditions for aircraft vs engine (IM)
21_Engulfing Fire (IM)
22_Fuel for Burner (IM)
23_Use of Simulation for Fire
24_Engine Mount / flight controls / Other Structures fire proofness (IM)
25_Firewall
26_Accessories/Mount Pads(IM)
27_DFZ Adjacent zone (IM)
28_Flammable Fluid leakage zone vs Designated Fire Zones

EASA – Powerplant / Propulsion Fire



EASA – Powerplant / Propulsion Fire



GREY : to be initiated
YELLOW : activity on going
GREEN: activity completed
D: Draft / UC: Under consultation / R: Released
?: Review and decision for impact (if any), deliverable identification (as necessary)

EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT

Questions ?