

# 21st European Airline Training Symposium EASA Regulatory Update

Francesco Gaetani – Head of Aircrew and Medical Department & Chief Pilot

Ascanio Russo – Aircrew & Medical Standards & Implementation Section Manager

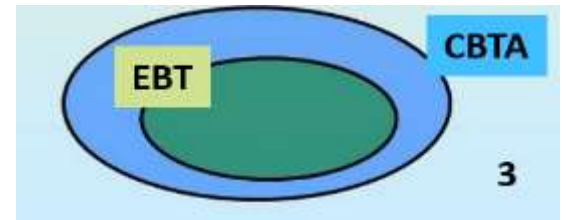
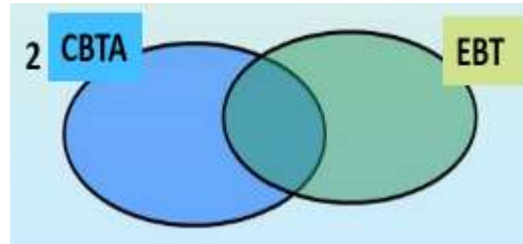
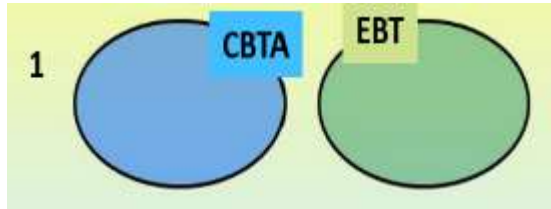
Nadia Ilieva – Flight Crew Licensing Expert

Matteo Arnoldi – Junior Expert - FCL Training Innovation

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**Your safety is our mission.**

# Evidence Based Training vs Competency-Based Training and Assessment



Which one is correct?

# Evidence Based Training vs Competency-Based Training and Assessment

**You can do CBTA  
without EBT.**

**But you can't do EBT  
without CBTA**

# EASA CBTA strategy

Uniform, consistent multi-domain approach



**CBTA**

**ICAO Doc 9868**  
(PANS-Training)

**EASA rulemaking**  
RMT.0194 Introduction of **CBTA** for **instructors** and then for pilots  
RMT.0230 Introduction of **new licences** for remote and manned VTOL pilots  
RMT.0599 **Extension of EBT** to cover all training at the operator

Conventional training,  
testing and checking  
(hours and tasks)

**Mixed CBTA**

(e.g. CBTA training course,  
min course duration, skill  
test)

**CBTA “baseline”**

(competency framework,  
task list, competency  
training plan and  
assessment)

# RMT.0194 Improving regulatory framework for instructors (work in progress)

Today (aeroplane & helicopter instructors):

**FI**

**TRI**

**CRI**  
*Aeroplanes only*

**IRI**

LIMITED  
CROSS CREDITS

**FTI**

FI  
training  
course

TRI  
training  
course

CRI  
training  
course

IRI  
training  
course

FTI  
training  
course

SEVERAL AoCs  
FOR  
REVALIDATION

**SFI**

**MCCI**

**STI**

**MI**  
*Aeroplanes only*

SFI  
training  
course

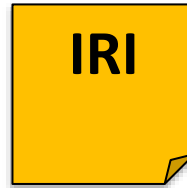
MCCI  
training  
course

STI  
training  
course

MI  
training  
course

# RMT.0194 Improving regulatory framework for instructors (work in progress)

Tomorrow (airplane instructors):



**Instructor “core course” (CBTA philosophy)**  
Theory: Teaching and learning; Technical training  
Practical: Core exercises (5 modules)

FTI  
training  
course

Tailored  
training:  
FI

Tailored  
training:  
TRI

Tailored  
training:  
CRI

Tailored  
training:  
IRI

Tailored  
training:  
SFI

Additional training in ATO/DTO/AOC for particular instruction

# RMT.0196 – Update of the Flight Simulation Training Device – FSTD requirements

- Review the technical requirements for FSTD to reflect their **actual capability** and **technology advancement** in support of introducing the **‘task to tool’ concept** for aeroplanes and helicopters.

## Key points

- Flexible training solutions
- More efficient use of FFS
- Wider use of FSTDs other than FFS

# RMT.0196 – FSTD Capability Signature, training matrices & course design

→ **FSTD Capability Signature**: code with 14 features and 4 fidelity levels

## Features

1. Flight Deck Layout and Structure
2. Primary Flight Controls Forces & Hardware
3. Primary Flight Controls Systems Operation
4. Aircraft Systems
5. Performance & Handling - On Ground (O/G)
6. Performance & Handling - In Ground Effect (IGE)
7. Performance & Handling - Out of Ground Effect (OGE)
8. Sound Cues
9. Vibration Cues
10. Motion Cues
11. Visual Display Cues
12. Navigation
13. Atmosphere And Weather
14. Operating Sites And Terrain

Aircraft features



Cueing features



Environmental features



## Fidelity levels

- S: Specific
- R: Representative
- G: Generic
- N: Not Applicable





# RMT.0196 – FSTD Capability Signature, training matrices & course design

- How to determine the suitability of a training device?
- Training matrices express, for each training task, the minimum FCS that the FSTD is required to have.



Task-to-tool

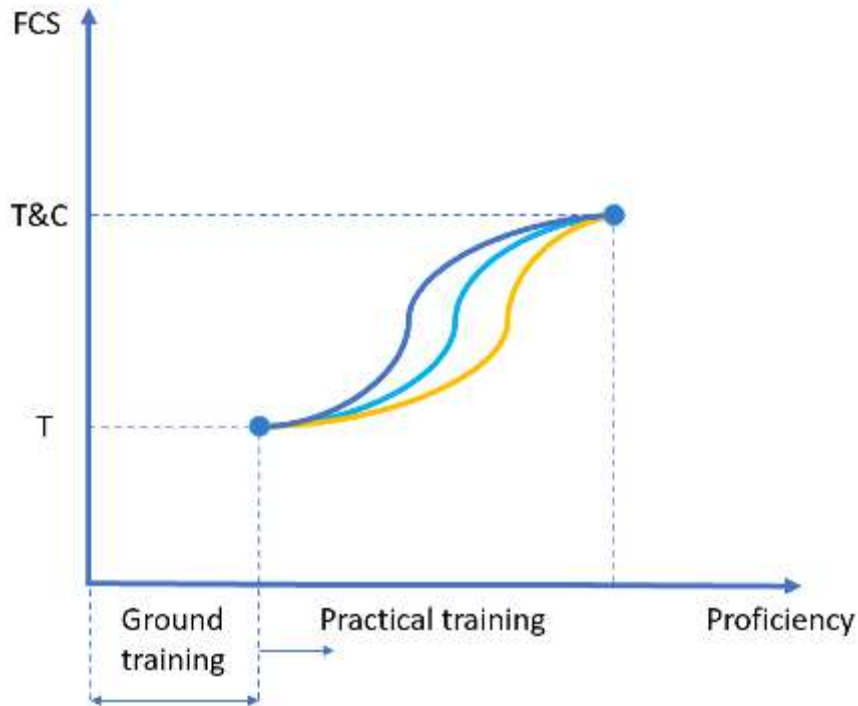
Applicable for type ratings only!

## Training matrix abstract

Manoeuvres/Procedures		Testing and checking (T&C) Training (T)	Features							Fidelity levels						
			1. Flight Deck Layout and Structure	2. Primary Flight Controls Forces & Hardware	3. Primary Flight Controls Systems Operation	4. Aircraft Systems	5. Performance & Handling - On Ground (G)	6. Performance & Handling - In Ground Effect (IG)	7. Performance & Handling - Out of Ground Effect (OG)	8. Sound Cues	9. Vibration Cues	10. Motion Cues	11. Visual Display Cues	12. Navigation	13. Atmosphere And Weather	14. Operating Sites And Terrain
3.4.4	Electrical system	T&C	R	N	N	S	N	N	N	N	N	N	N	N	N	N
		T	G	N	N	R	N	N	N	N	N	N	N	N	N	N
3.6.5	Wind shear at take-off/landing	T&C	S	S	S	S	S	S	S	S	S	S	N	S	G	G
		T	R	S	S	R	R	R	R	N	N	N	N	R	G	G



# RMT.0196 – FSTD Capability Signature, training matrices & course design



## Key principles

- **T** represents the minimum starting point for granting training credit.
- **T&C** represents the level at which a pilot should demonstrate full proficiency in the execution of a training task.
- To achieve complete training credit, every training task needs to be completed in a training device qualified at least with the T&C level FCS.

# RMT.0196 – FSTD Capability Signature, training matrices & course design

## Training matrix abstract

Manoeuvres/Procedures		Testing and checking (T&C) Training (T)	1. Flight Deck Layout and Structure	2. Primary Flight Controls Forces & Hardware	3. Primary Flight Controls Systems Operation	4. Aircraft Systems	5. Performance & Handling - On Ground (G)	6. Performance & Handling - In Ground Effect (IG)	7. Performance & Handling - Out of Ground Effect (OG)	8. Sound Cues	9. Vibration Cues	10. Motion Cues	11. Visual Display Cues	12. Navigation	13. Atmosphere And Weather	14. Operating Sites And Terrain
3.4.4	Electrical system	T&C	R	N	N	S	N	N	N	N	N	N	N	N	N	N
		T	G	N	N	R	N	N	N	N	N	N	N	N	N	N
3.6.5	Wind shear at take-off/landing	T&C	S	S	S	S	S	S	S	R	R	S	S	N	S	G
		T	R	S	S	R	R	R	R	R	N	N	N	N	R	G

# RMT.0196 – FSTD Capability Signature, training matrices & course design

Training matrix abstract

Manoeuvres/Procedures		Testing and checking (T&C) Training (T)	1. Flight Deck Layout and Structure	2. Primary Flight Controls Forces & Hardware	3. Primary Flight Controls Systems Operation	4. Aircraft Systems	5. Performance & Handling - On Ground (G)
3.4.4	Electrical system	T&C	R	N	N	S	N
		T	G	N	N	R	N
3.6.5	Wind shear at take-off/landing	T&C	S	S	S	S	S
		T	R	S	S	R	R

# RMT.0196 – FSTD Capability Signature, training matrices & course design

## Training matrix abstract

Manoeuvres/Procedures		Testing and checking (T&C) Training (T)	1 Flight Deck Layout and Structure	2 Primary Flight Controls Forces & Hardware	3 Primary Flight Controls Systems Operation	4 Aircraft Systems	5 Performance & Handling - On Ground (G)	6 Performance & Handling - In Ground Effect (IG)	7 Performance & Handling - Out of Ground Effect (OG)	8 Sound Cues	9 Vibration Cues	10 Motion Cues	11 Visual Display Cues	12 Navigation	13 Atmosphere And Weather	14 Operating Sites And Terrain
3.4.4	Electrical system	T&C	R	N	N	S	N	N	N	N	N	N	N	N	N	N
		T	G	N	N	R	N	N	N	N	N	N	N	N	N	N
3.6.5	Wind shear at take-off/landing	T&C	S	S	S	S	S	S	S	R	R	S	S	N	S	G
		T	R	S	S	R	R	R	R	R	N	N	N	N	R	G

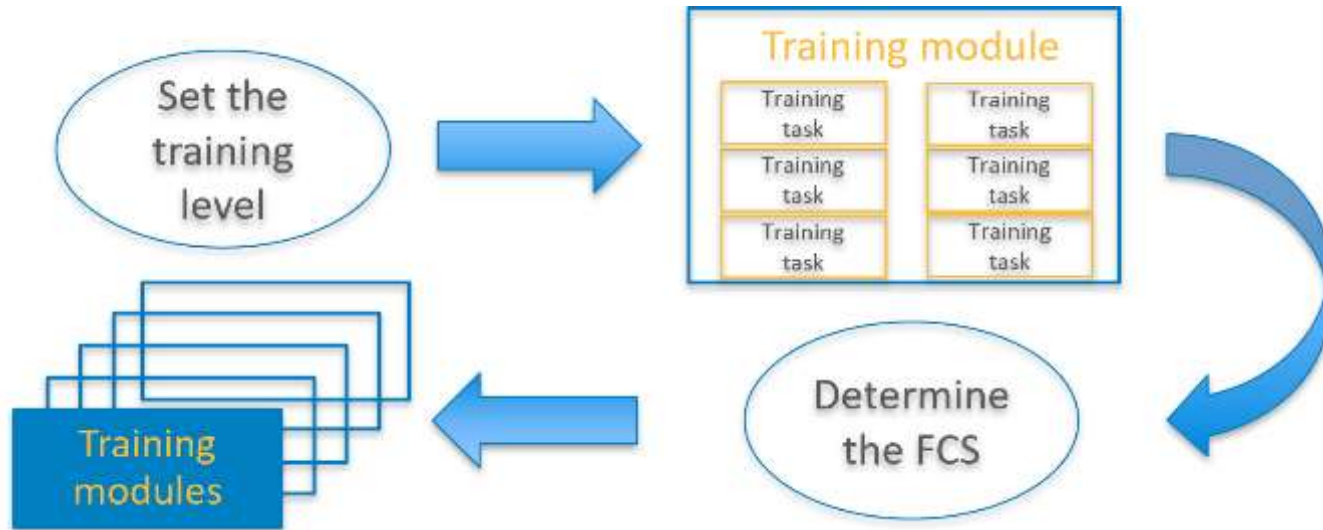
# RMT.0196 – FSTD Capability Signature, training matrices & course design

Training matrix abstract

Manoeuvres/Procedures		Testing and checking (T&C) Training (T)	8. Sound Cues	9. Vibration Cues	10. Motion Cues	11. Visual Display Cues	12. Navigation	13. Atmosphere And Weather	14. Operating Sites And Terrain
3.4.4	Electrical system	T&C	N	N	N	N	N	N	N
		T	N	N	N	N	N	N	N
3.6.5	Wind shear at take-off/landing	T&C	R	R	S	S	N	S	G
		T	R	N	N	N	N	R	G

# RMT.0196 – FSTD Capability Signature, training matrices & course design

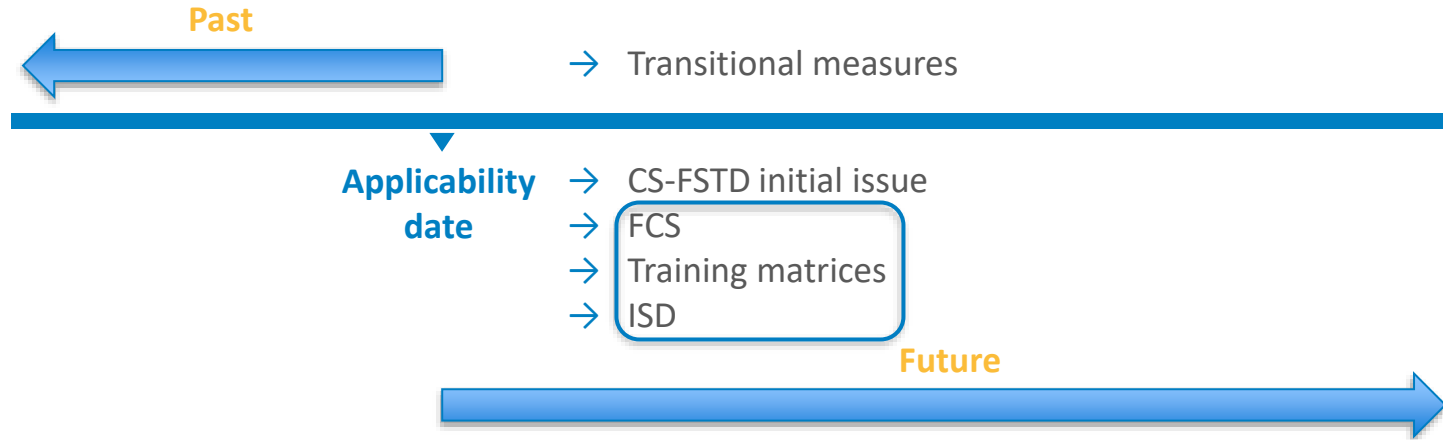
→ Instructional System Design (ISD) methodology to support the design of training programmes.






The determination of the training FCS is the outcome of the design process.



# RMT.0196 – Transitional measures



## Transitional measures

- Voluntary  Decision to apply for an FCS left to FSTD operator
- Streamlined  Possibility to get an assigned FCS, without an FSTD evaluation (conditions apply)
- Flexible  Possibility to continue with legacy training or switch to new training programmes, no change imposed

# Data-driven training system

**EASA priority** (EPAS 2023-2025)

*Facilitate the use of accessible, cost-effective and protected data for aircrew training delivery and enable the use of predictive data from training*



# Data-driven training system - EBT

- Training data is already being used as enabler for EBT, at individual operator level
  - Enhanced assessment of Observable Behaviors
  - Enhanced debriefing
  - Continuous improvement of training system performance

**AMC1 ORO.FC.231(c) Evidence-based training**

*ED Decision 2022/014/R*

**TRAINING SYSTEM PERFORMANCE — FEEDBACK PROCESS**

- Data protection

**AMC2 ORO.FC.231(c) Evidence-based training**

*ED Decision 2021/002/R*

**FEEDBACK PROCESS — DATA PROTECTION — GRADING SYSTEM**

# Data-driven training system – what next?



- Training data as enabler for regulators
  - Decision-making tool
  - Revise minimum training requirements (maneuvers, tasks, competencies)
  - Applicable for both legacy training and CBTA frameworks



?

Or

**Airspeed Unreliable**

Condition: Airspeed or Mach indications are suspected to be unreliable. (Items which might indicate unreliable airspeed are listed in the Additional Information section.)

Objective: To identify a reliable airspeed indication, if possible, or to continue the flight using the Flight With Unreliable Airspeed table in the Performance Inflight chapter.

- 1 Autopilot (if engaged) . . . . . Disengage
- 2 Autothrottle (if engaged). . . . . Disengage
- 3 F/D switches (both) . . . . . OFF
- 4 Set the following gear up pitch attitude and thrust:  
Flaps extended . . . . . 10° and 80% N1  
Flaps up . . . . . 4° and 75% N1

# Data-driven training system – what next?

- EASA endeavoring with industry to exploit “data for training” potential
  - Build a “Data for training” pillar in “Data4Safety” partnership programme
  - Establish ethical criteria to enable the collection, sharing and analysis of anonymized/statistical training data
    - Training and assessment metrics – harmonization
    - Data transfer from several sources to a single data lake (like done for FDM)
    - Data normalization, for better interpretation and use of training data
    - Data ownership and protection



# Data-driven training system – what next?

- EBT Libraries could be enhanced with consolidated, de-identified training data, complementing the operational inputs (FDM)

## AMC1 ORO.FC.232 EBT programme assessment and training topics

*ED Decision 2021/002/R*

### ASSESSMENT AND TRAINING TOPICS

Each table of assessment and training topics is specific to the aeroplane generation specified in the title. The component elements in the column headings of the matrix are as follows:

- (a) Assessment and training topic. A topic or grouping of topics derived from threats, errors or findings from data analysis, to be considered for assessment and mitigation by training.
- (b) Frequency. The priority of the topic to be considered in an EBT programme, according to the **evidence derived from a large-scale analysis of operational data**, is linked to a recommended frequency. There are three levels of frequency:

- Operators / ATOs could use relevant data to refine or benchmark their training system

# New way to draft regulations

- High level training requirements at implementing rule level (**SHALL**)
  - Minimum ICAO requirements to be met for mutual recognition
  - Only temporary exemptions allowed as per flexibility provisions
- Detailed frameworks in one or more Acceptable Means of Compliance – AMC (**SHOULD**)
  - Mature organisations can propose training frameworks alternative but equivalent to the EASA AMC (Alternative Means of Compliance – AltMoC system)
  - EASA monitoring the application of AltMoCs
- Guidance Material - GM (also to explain the intent)



# Example of CBTA rules for pilot licence (indicative)

## TODAY

### FCL.315 CPL – Training course

An applicant for a CPL shall have completed theoretical knowledge instruction and flight instruction at an ATO, in accordance with [Appendix 3](#) to this Part.



### Appendix 3, CPL integrated course – Aeroplanes

A CPL(A) theoretical knowledge course shall comprise at least **350 hours of instruction**.

The flying training, not including type rating training, shall comprise a total of at least **150 hours**.

### AMC 1 to Appendix 3

- Duration of the CPL integrated course
- Details on the suitable forms of training, e.g. classroom, lessons, demonstrations
- Details on flying training phases and duration of exercises

## TOMORROW

### NEW FCL.350 CPL - CBTA

In case of CBTA, an applicant for a CPL shall have completed theoretical knowledge instruction and flight instruction at an ATO, in accordance with [Appendix 11](#).

### (NEW) Appendix 11 CBTA for pilots

- List of competencies for CPL
- Task list development (principles) for CPL
- Performance standards and assessment conditions (for each competency) for CPL

### NEW AMC

- list of observable behaviours associated with each competency
- standard task list for each type of licence
- theoretical knowledge course should comprise at least **xxx hours** of instruction
- flying training should comprise a total of at least **yyy hours**.

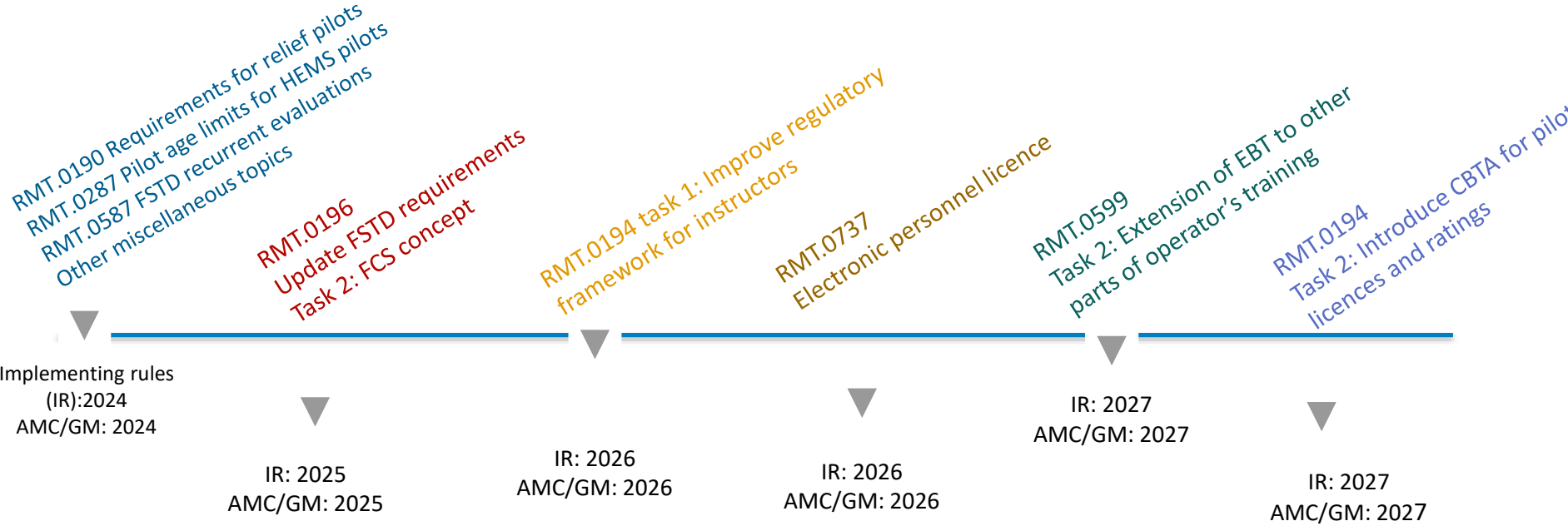


# New way to draft regulations

- The EASA primary effort is now at **ICAO** level to progress on **CBTA implementation**
  - Reassessing the validity of existing prescriptive minimum requirements
  - Identifying key requirements (experience?) to establish a baseline (**level playing field**)
- Support from the Member States and Industry is essential



# Major EASA rulemaking activities and milestones



# Thank you for your attention!

[easa.europa.eu/connect](https://easa.europa.eu/connect)



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An Agency of the European Union 