Agenda

1.1 Date: 13th December 2023 – with time slots as per the webinar recording

VIDEO PLAYBACK TIME	CHECK-IN
0:00:00 – 0:22:44	**1. Welcome and introduction** Francesco Gaetani (EASA), Frances Condron (EASA) and Andy Mitchell (Chairman ATPG)
0:22:45 – 1:11:59	**2. KSA implementation with examples of best practices:** 2.1 Kyle Johnston, 2.2 Hilary Farley-Wood (IAAPS/LEAL), 2.3 Stuart Smith (CATS), 2.4 Kyle Johnston, 2.5 Jacqui Suren (ATPG)
1:12:00 – 1:36:29	**3. Course design** 3.1 Frances Condron (EASA), 3.2 Luis Martins (ATPG)
1:36:30 – 1:53:48	**4. KSA assessment grading** 4.1 Jacqui Suren (ATPG)
1:53:49 – 2:45:01	**5. TKI and KSA Assessment Training including an exercise on inter-rater reliability** 5.1 Hilary Farley-Wood (IAAPS/LEAL) and 5.2 Andy Mitchell (ATPG).
2:45:02 – 3:12:29	**6. Questions & answers on KSA 100 implementation and TKI & assessor training** Supported by Sli.Do
3:12:30 – 3:36:20	**7. Closing the loop: feedback and data, and CBTA development** 7. 1 Andy Mitchell (ATPG)
3:36:21 – 4:07:20	**8. KSA oversight with discussion** 8.1 Luis Martins (ATPG), 8.2 Anne Sere (DGAC).
4:07:21 – 5:06:50	**9. Questions & answers** Supported by Sli.Do
5:06:51 - end	**10. Concluding remarks and Close** Francesco Gaetani (EASA)

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ATPG

*Driving industry **conversation** & **innovation** to enhance aircrew training quality, diversity & efficiency while increasing safety & environmental sustainability*

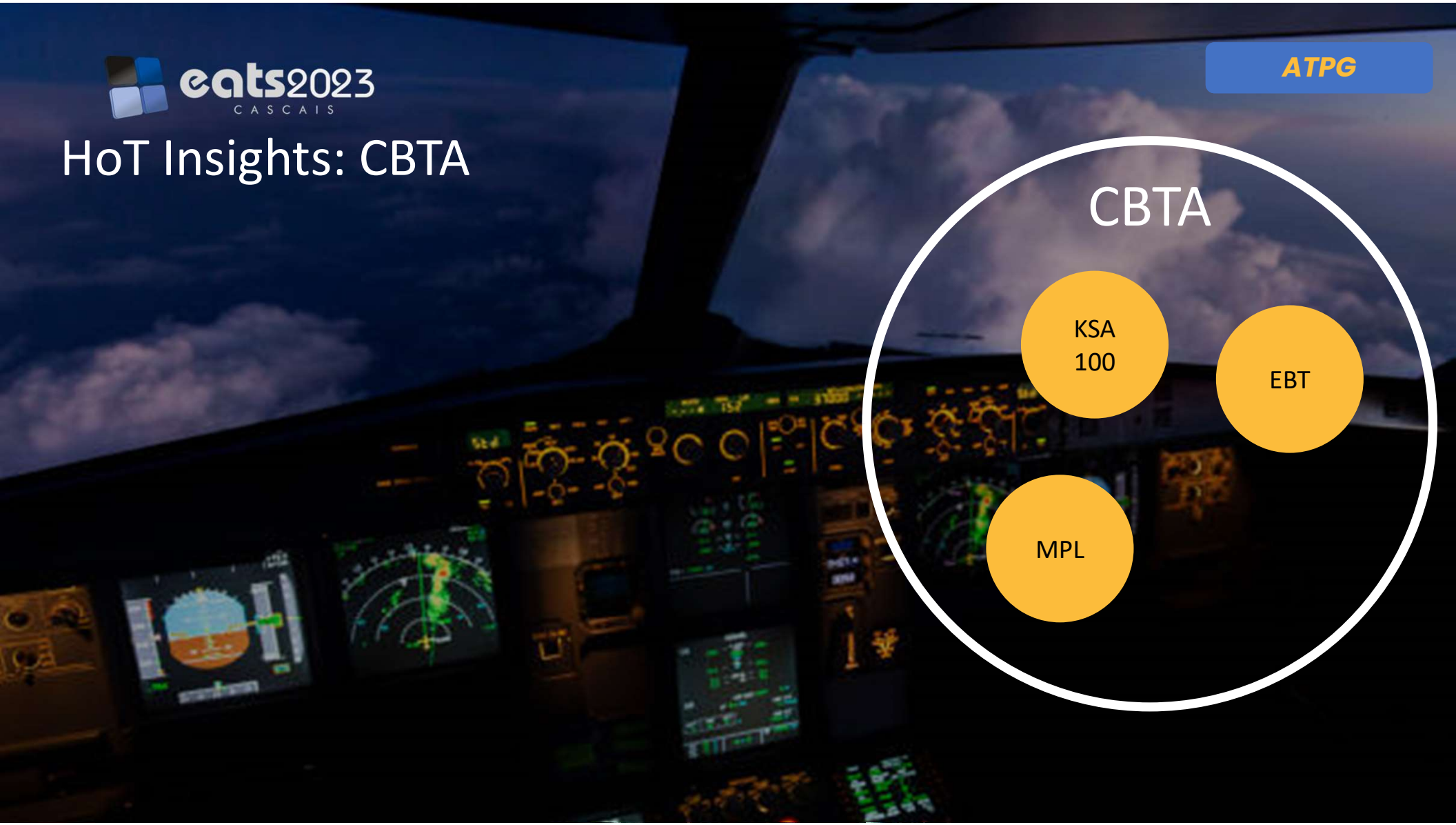
Captain Andy Mitchell BEng, FRAeS, Chair ATPG

ATPG

Introduction:

A reflection on Area KSA 100 from an EBT SME

Captain Andy Mitchell BEng, FRAeS, Chair ATPG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PRESENTATIONS
EATS 2023

CBTA Alignment

ATPG

Competency: A dimension of human performance that is used to reliably predict successful performance on the job.
A competency is manifested and observed through behaviours that mobilize the relevant knowledge, skills and attitudes to carry out activities or tasks under specified conditions.

CBTA Alignment

ATPG

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Operational Environment

CBTA Alignment

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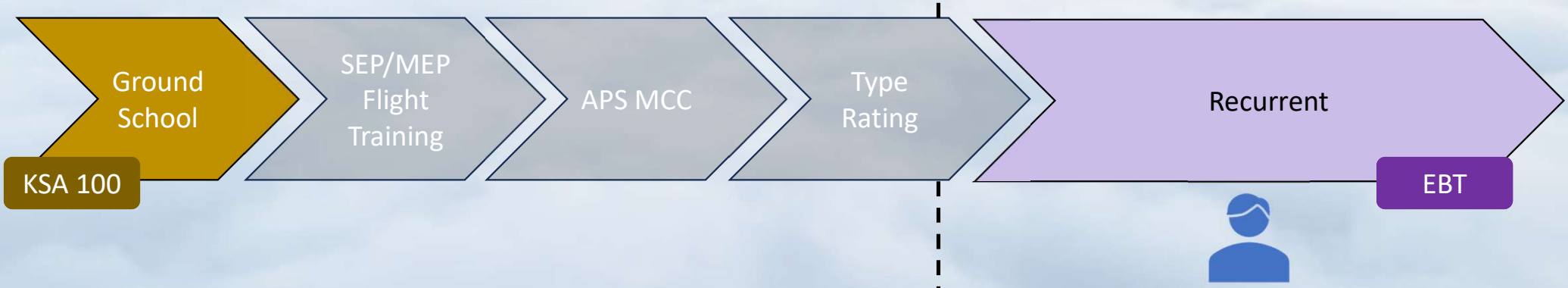
Non-operational environment

Operational Environment



CBTA Alignment

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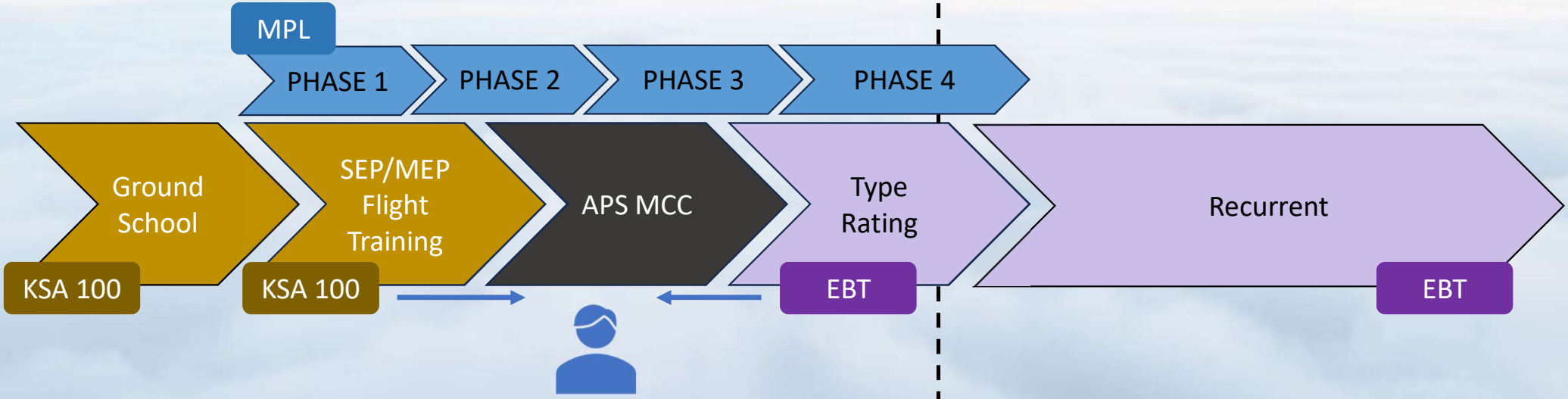
Non-operational environment

Operational Environment



CBTA Alignment

ATPG

Non-operational environment

Operational Environment

CBTA Alignment

ATPG

Non-operational environment

FORMATIVE → SUMMATIVE → FORMATIVE* → SUMMATIVE

Operational Environment

EVAL → SBT → EVAL → SBT

Ground School → SEP/MEP Flight Training → APS MCC → Type Rating → Recurrent

KSA 100

EBT

AMC3 ORA.ATO.230(a)

AMC1 ORO.FC.231(a)

CBTA Alignment

ATPG

Non-operational environment

FORMATIVE → SUMMATIVE → FORMATIVE* → SUMMATIVE

Operational Environment

EVAL → SBT → EVAL → SBT

AMC

Level 0: Competent / Not Competent

Level 1: 5 4 3 2 1

Level 2: Observable Behaviours (OBs)

Level 3: Other metrics (e.g. task based)

Ground School → SEP/MEP Flight Training → APS MCC → Type Rating → Recurrent

KSA 100

EBT

AMC1 ORO.FC.231(c)

CBTA Alignment

ATPG

Non-operational environment

FORMATIVE → SUMMATIVE → FORMATIVE* → SUMMATIVE

AMC → Satisfactory / Unsatisfactory

GM → L5 L4 L3 L2 L1

IR → Learning Objectives (LOs)

GM → Performance indicators

Operational Environment

EVAL → SBT → EVAL → SBT

AMC

Level 0: Competent / Not Competent

Level 1: 5 4 3 2 1

Level 2: Observable Behaviours (OBs)

Level 3: Other metrics (e.g. task based)

Ground School → SEP/MEP Flight Training → APS MCC → Type Rating → Recurrent

KSA 100

EBT

AMC3 &GM2 ORA.ATO.230(a)

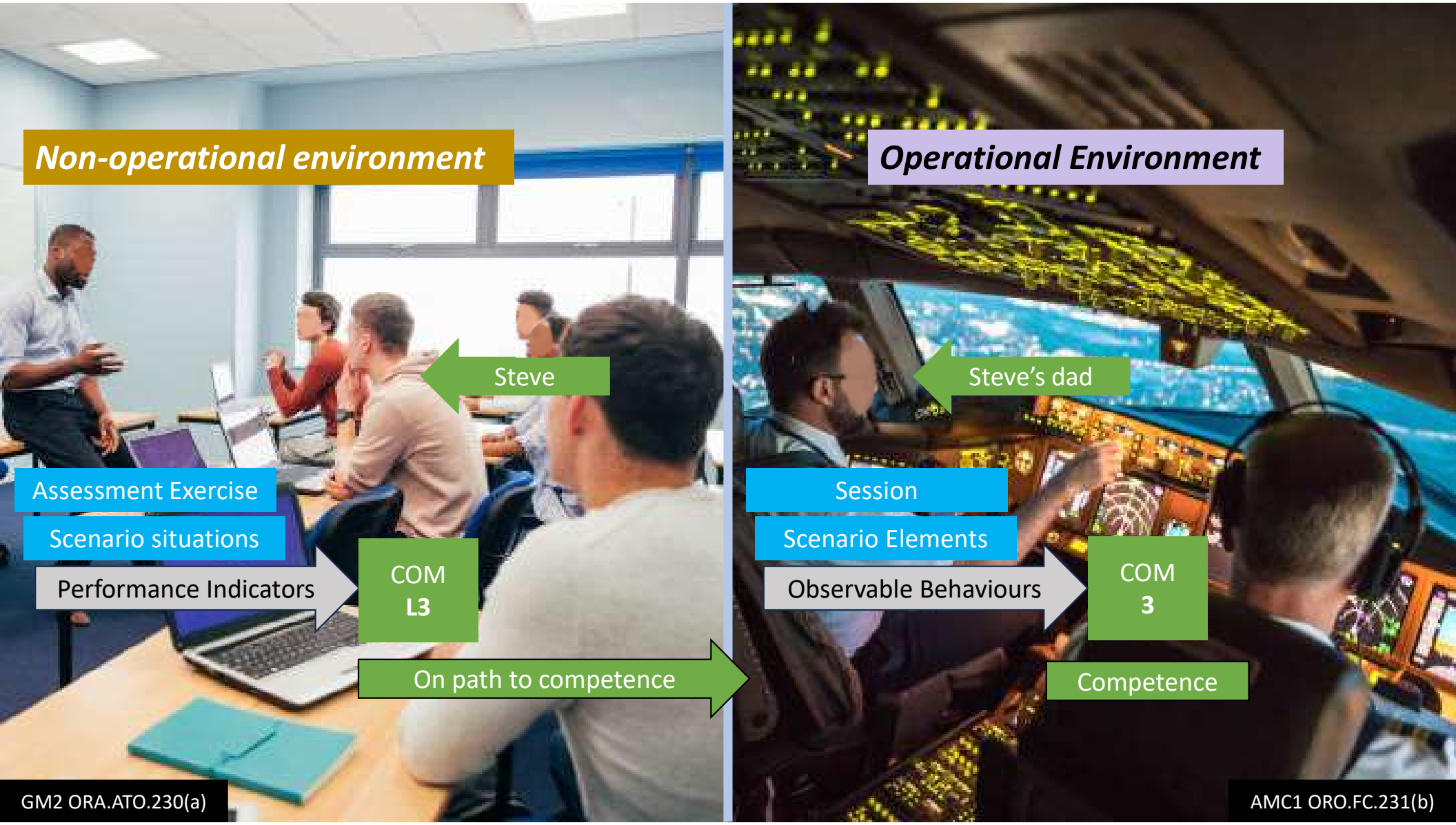
AMC1 ORO.FC.231(c)

ATPG

KSA 100 Learning Objectives EASA SUBJECT AREA 100 – KNOWLEDGE, SKILLS AND ATTITUDES	KSA 100 Performance Indicators EASA GM2 ORA.ATO.230(a) Table 2	EBT Observable Behaviours EASA AMC1 ORO.FC.231(b)
100 02 01 00 (01) *Show the ability to identify whether the recipient is ready and able to receive the information.*	*Ensures the recipient is ready and prepared to receive the information.*	***COM 2.1*** *Determines that the recipient is ready and able to receive information*
100 02 02 00 (01) *Show the ability to create an atmosphere of open communication that encourages participation*	*Creates an atmosphere of open communication and encourages team participation.*	***LTW 5.1*** *Encourages team participation and open communication*

AMC3 &GM2 ORA.ATO.230(a)

AMC1 ORO.FC.231(b)


Non-operational environment
Steve
Assessment Exercise
Scenario situations
Performance Indicators
COM
L3
On path to competence
GM2 ORA.ATO.230(a)
Operational Environment
Steve's dad
Session
Scenario Elements
Observable Behaviours
COM
3
Competence
AMC1 ORO.FC.231(b)

ATPG

Thank you,
let's keep this conversation going

info@atpg.eu

Continued thanks to our organisations for their support:

Aer Lingus, AIRBUS, BOEING, CAE, Lufthansa Aviation Training, FTE Jerez Flight Training Europe, FlightSafety International, ECA European Cockpit Association, IATA, MPS, Atlantic Flight Training Academy, International Association of Aviation Personnel Schools, AIRLINE PILOT CLUB, CENTER AIR PILOT ACADEMY, Salient

And special thanks for their trust in us:

EASA European Aviation Safety Agency, HalldaleGroup

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International Association of Aviation Personnel Schools

Area 100 KSA
History and Regulation

Kyle Johnston AFTA

EASA KSA Webinar

13th December 2023

ATPG

Area 100 KSA Overview

Global Challenges

Industry input and European Operator Survey

The regulatory arrival of Area 100 KSA

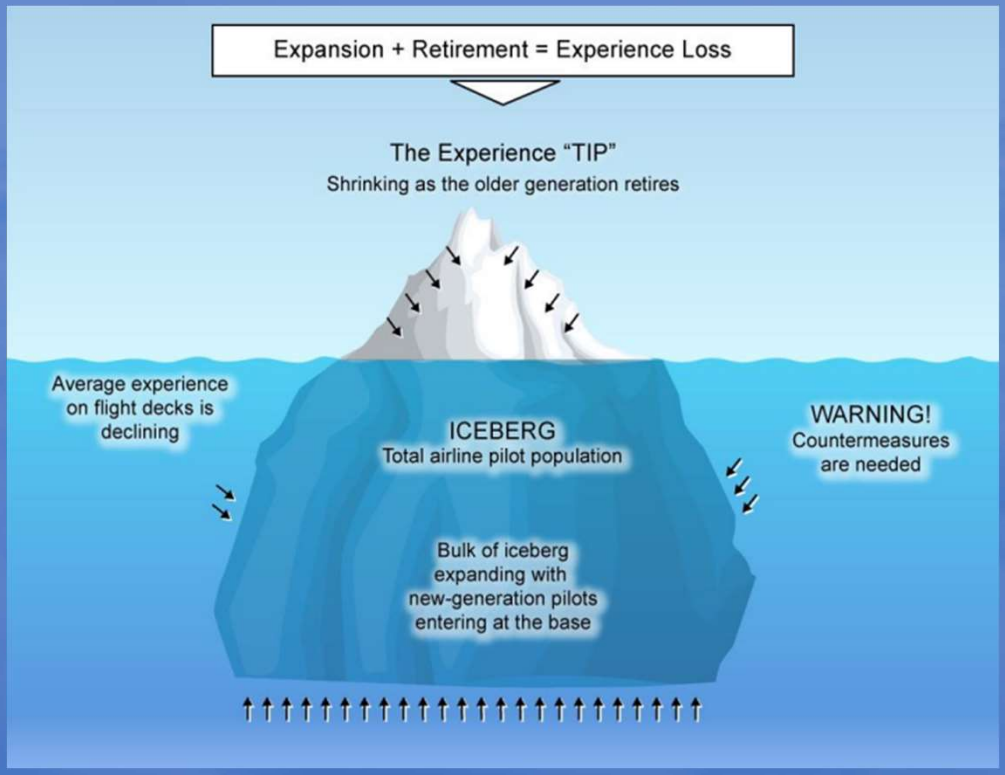
Area 100 KSA in ATOs

ATPG

Global Challenges

- Industry growth and loss of expertise
- Emerging technology and increased automation
- Economic pressure on ab-initio training costs

IATA predicts that accident rates will increase if countermeasures including appropriate training are not put in place



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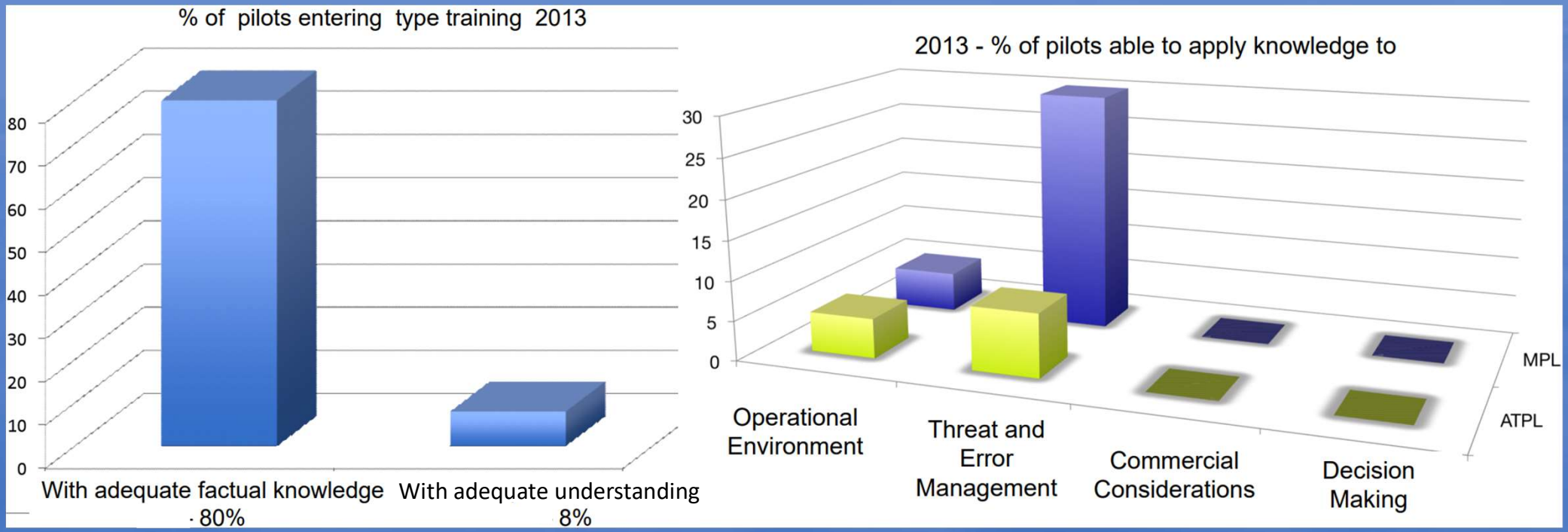
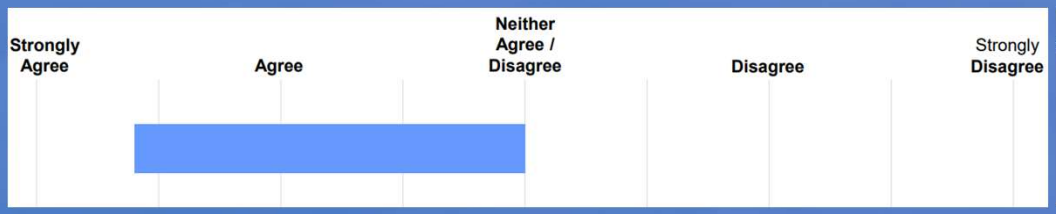
Industry input and European Operator Survey

One Operator's gap analysis from 2013

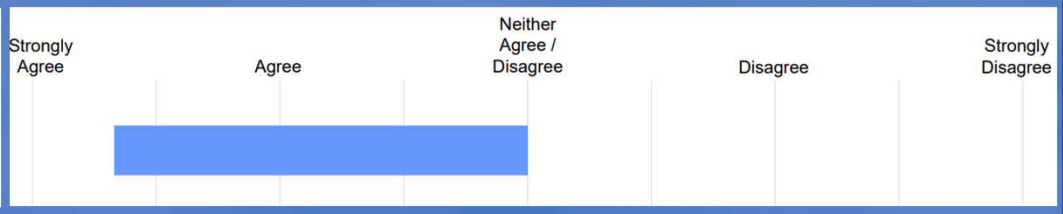


IAAPS European Operator Survey 2015

‘ATPL TK courses tend to have a greater emphasis on learning facts that on understanding and the application of knowledge’

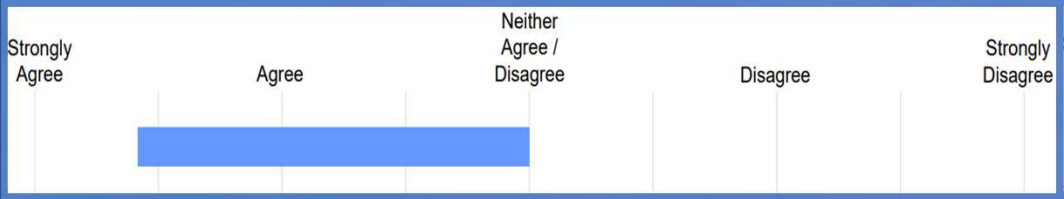


‘A student’s ability to relate knowledge between subjects and to scenario situations, is important for later training effectiveness’

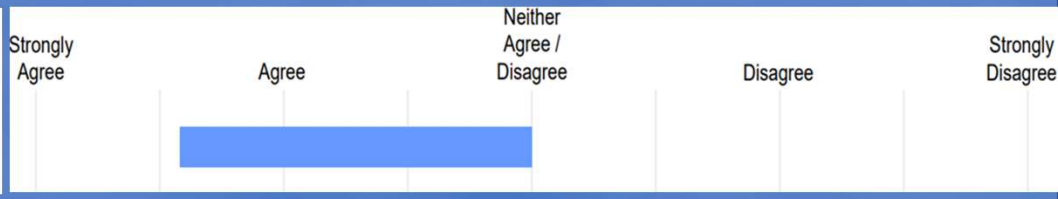


IAAPS European Operator Survey 2015

'The development and assessment of a student's teamwork and communications skills in ground training is important for safety'

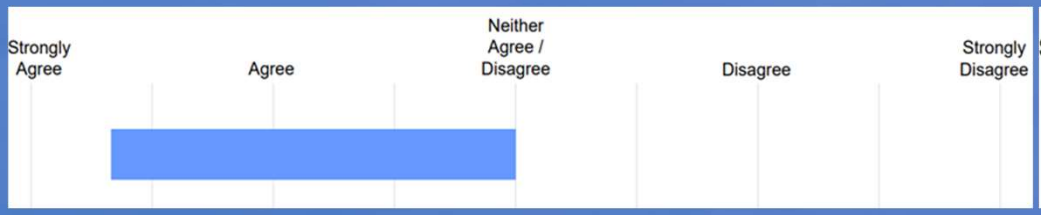


'The development and assessment of a student's problem solving and decision-making skills in ground training is important for safety'

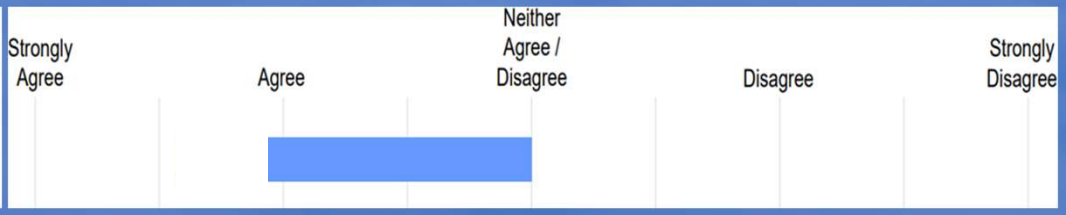


IAAPS European Operator Survey 2015

‘Compared to the present ground training courses, a wider knowledge and skills competence ground training course (including interwoven TEM) would improve safety’



‘The ability of a pilot to be able to conduct mental maths in applied situations and for cross checks is important for safety’



ATPG

The regulatory arrival of Area 100 KSA

In 2015, RMT.0595 RMG proposed an additional group of 'Knowledge Skills and Attitudes' LOs. They were placed in a new LO 'subject' group, called 'Area 100 KSA'. Now regulated in Appendix to Annex I to ED Decision 2018/001/R.

- 100 01 The list of ICAO core competencies
- 100 02 The core competence learning objectives taken from the majority of the Communication, Leadership and Teamwork, Problem Solving and Decision Making, Situation Awareness and Workload Management performance indicators (now called observable behaviors).
- 100 03 Application of knowledge LOs, UPRT & resilience LOs (all now reassigned into the EASA 9 pilot competencies).
- 100 04 Mental Maths

ATPG

‘a concept underlying the whole theoretical knowledge training system — a training philosophy and not simply a new subject’

‘Area 100 KSA ensures the appropriate integration of various topics from across the theoretical knowledge course while also developing students’ core competencies during this training’

‘promotes practical training and assessment’ complementing the EASA subject examination system

Explanatory note to Decision 2018/001/R

ATPG

Area 100 KSA in ATOs

KSA Assessments

To be designed to develop and assess both the student's across-subject TK application and their Pilot Competencies

Assessment examples: written, individual, pair or group planning exercises combining multiple subjects: practical exercises using training devices (if practical); scenario-based oral board; scenario-based communications exercises; written assignments or project work; and preparation and delivery of group or individual presentations.
GM1 ORA.ATO.230(a) and GM3 ORA.ATO.230(a)

Practical examples from ATOs to follow in this session

Area 100 KSA in ATOs

KSA Assessments

Formative (developmental)	**Summative (evaluation)**
During TK training	Towards the end of TK training.
At least one assessment (preferably many more, as the focus of KSA is on development)	At least 2 assessments (minimum one group) Together, they must be designed to potentially cover all KSA 100 LOs
Assessing instructor may hint, prompt or teach if necessary	No input from assessing instructor.
AMC3 ORA.ATO.230(a)	The student must be at least satisfactory in each competence, for each summative assessment.

ATPG

Area 100 KSA in ATOs

KSA 100 satisfactory completion

The KSA summative assessments and summative mental maths test must be satisfactorily completed, before the student is recommended by the ATO to sit their first attempt at their final theoretical knowledge EASA subject examination paper.

The satisfactory standard is a grade L2 or greater in each competence, for each summative assessment, and 75% or greater in the mental maths test

EASA KSA Webinar

Why Area KSA100

Please note any questions and ask via the Sli.do App

KSA Formative Assessment

Hilary Farley-Wood
Learning & Development Manager

13th December 2023 – EASA KSA WebEx

Aim higher.
Pilot training with an edge.

Leading Edge Aviation

Formative Assessment

Assessment Opportunities (formative)

- Group decision-making
  - LO 100.02.01, 02, 03, 04, 05
- Mental maths test
  - LO 100.04.01
- Flight x 2
  - LO 100.02.01, 04, 05 & 06
- Met briefing pair exercise
  - LO 100.02.01, 02, 05, 06
- Sim session pair exercise
  - LO 100.02.01, 02, 05 & 06

Group Exercise – Mod 1 (formative)

- Students organised into groups of 3 or 4
- Group problem-solve and agree action plan
- Brief Instructors with summary of decisions and action taken to
- Verbal feedback given followed by individual report

Flight - Mod 1 (formative)

- Pre-flight brief
  - Referenced to TEM
- Flight
  - Pilot to Pilot/ATC communication
  - Situational awareness
  - Workload management
  - Application of knowledge/procedures
- Debrief/feedback

Met Briefing - Mod 1 (formative)

- Students organised into pairs
- Provided with weather information (charts/TAF)
- Plan and deliver pre-flight brief
- Debrief/feedback

Sim session - Mod 2 (formative)

- Pre-flight brief
- Short Flight
  - Communication
  - Teamwork
  - Situational awareness
  - Application of knowledge
- Debrief/feedback

Summative Assessment

Aim higher.
Pilot training with an edge.

Leading Edge Aviation

Assessment Opportunities (summative)

- TEM presentation pair exercise
  - LO 100.02.01, 02, 05, 06
- IFR FP group exercise
  - LO 100.02.01 – 06
- Mental maths test (min 75%)
  - LO 100.04.01

TEM presentation (summative)

- Pair/group of 3 prepare together
- Present to Instructors and peers
- Verbal feedback followed by individual report

Group Flight Planning (summative)

- Flight plan provided
- ‘operational changes’ occur
- Summary of decisions made
- Verbal feedback followed by individual report

Debriefing

Aim

Format

Content

Aim of debrief

- Student development by
  - Raising awareness of pilot competencies
  - Evaluating student (group) approach to the task and outcome
  - Evolving student understanding of their level of competency

Format for debrief

- Each student should receive an individual debrief of their performance for each task, either:
  - verbal
  - written
  - or both.

- Any suggested areas for development should be clarified and discussed

Content of Student Debrief

- Each student should receive an individual written report/debrief of their performance for each summative task; this should include:
    - details of LO/OBs that have been satisfied
    - evidence of how LO/OBs have been satisfied where possible
    - evidence of failure to meet LO/OBs
    - overall grade for each competency assessed
- Any suggested areas for development
- Any student comments received

DISTANCE LEARNING FORMATIVE ASSESSMENTS

KSA
100 00 00 00

New Syllabus
COMPLIANT

Dr Stuart E. Smith
Head of Training
Cranfield Aviation Training School

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tervetuloa bienvenu willkommen willkommen καλως НРΘАТЕ
üdvözöljük velkominn welcome benvenuto laipni lūdzam
sveiki wëllkomm merħba welkom velkommen witamy bem-vindo
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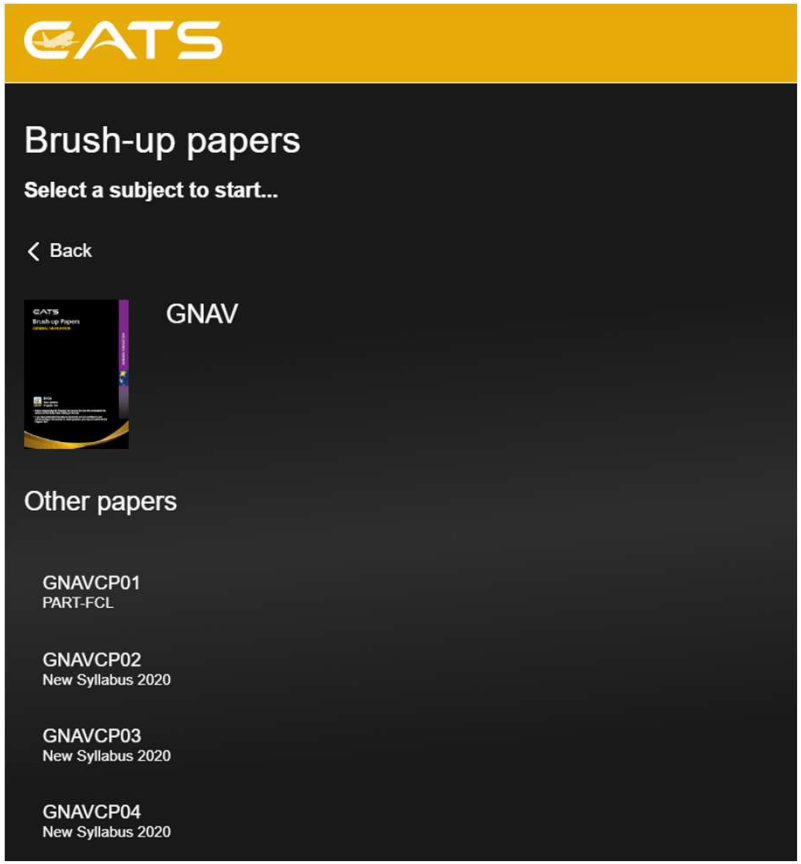
FORMATIVE ASSESSMENT

CATS offers a 3-stage ATPL theory course via distance learning

Online virtual ground schools take place over 4 days before the PART-FCL theoretical knowledge examinations

Normally, a typical day would involve delivering key facts for a specific subject and then delivering an exam-style consolidation brush-up paper

The brush-up paper can be completed in an open workshop style in a continuous question and answer session, question by question, or by students self-studying and completing the paper, followed by the instructor dealing with problematic questions



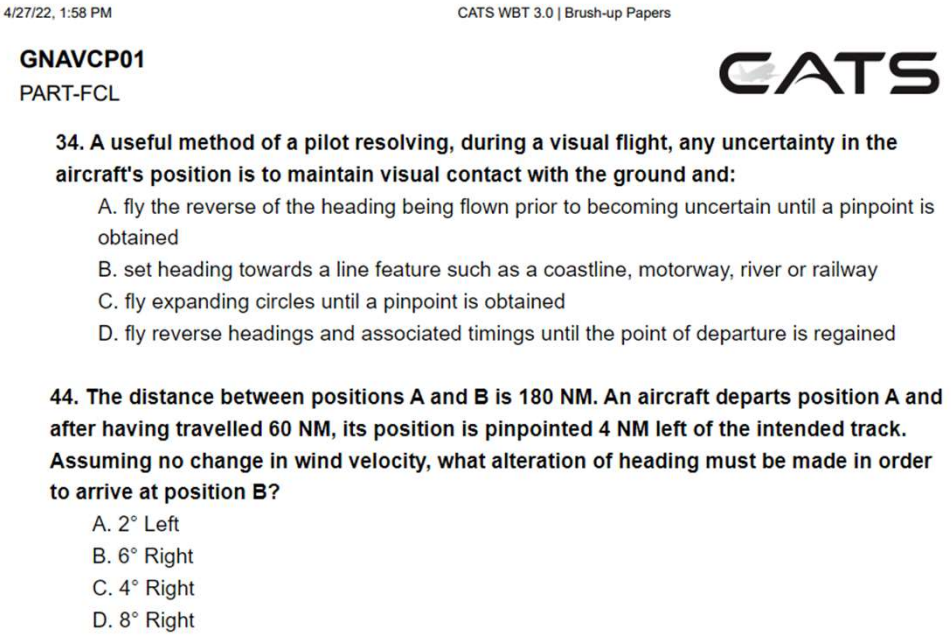
FORMATIVE ASSESSMENT

Evolving this into a KSA 100 formative assessment was relatively simple

Group size: The class is divided into groups of 3-4 students, letting them decide a group leader, a presenter, and assistant(s), to undertake the task of answering an equal but divided number of questions from the main paper

Number of formative assessments and timing: There are 3 assessments. One at each stage of the DL course during the classroom element

Delivery method: Online using Zoom™ or MS-Teams™ which enables visual and audio 2-way communication between the KSA assessor / TKI and the assessment group of students utilising break-out rooms



4/27/22, 1:58 PM CATS WBT 3.0 | Brush-up Papers

GNAVCP01

PART-FCL

34. A useful method of a pilot resolving, during a visual flight, any uncertainty in the aircraft's position is to maintain visual contact with the ground and:

A. fly the reverse of the heading being flown prior to becoming uncertain until a pinpoint is obtained

B. set heading towards a line feature such as a coastline, motorway, river or railway

C. fly expanding circles until a pinpoint is obtained

D. fly reverse headings and associated timings until the point of departure is regained

44. The distance between positions A and B is 180 NM. An aircraft departs position A and after having travelled 60 NM, its position is pinpointed 4 NM left of the intended track. Assuming no change in wind velocity, what alteration of heading must be made in order to arrive at position B?

A. 2° Left

B. 6° Right

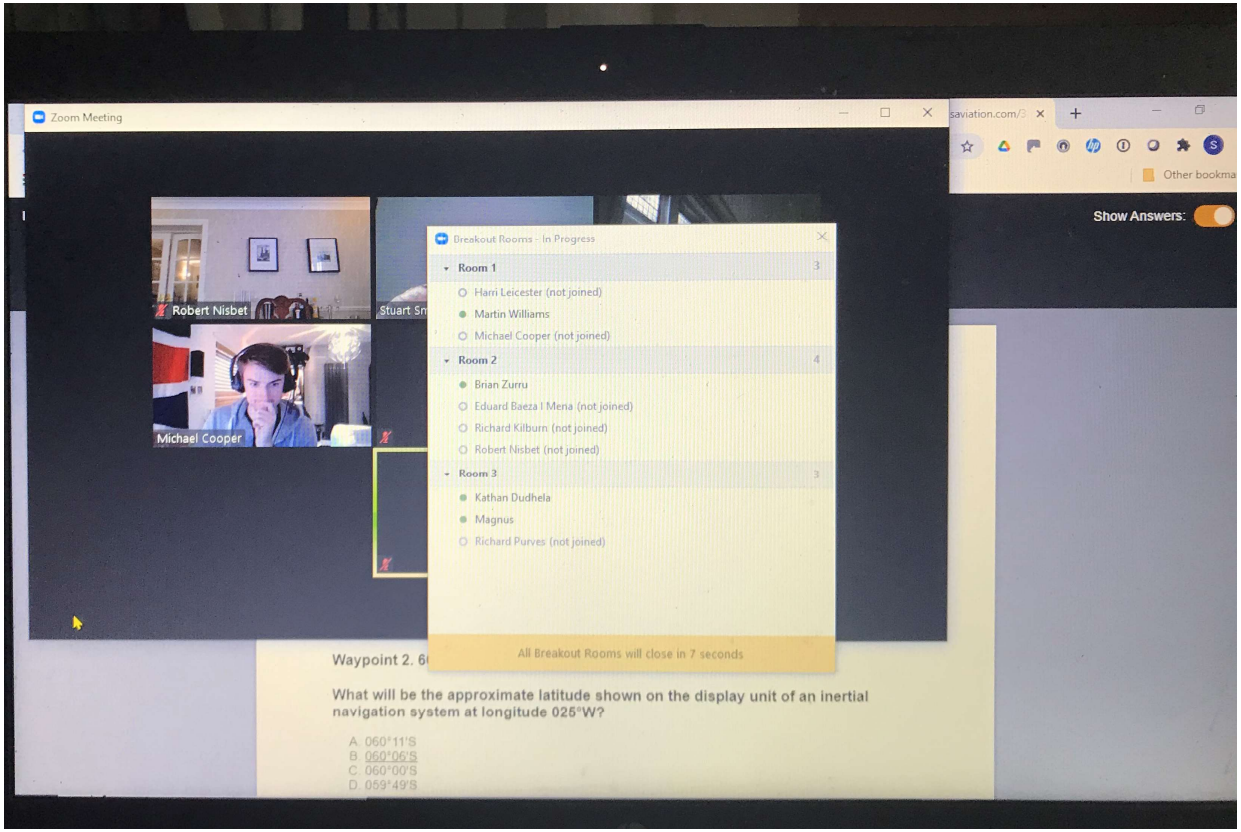
C. 4° Right

D. 8° Right

FORMATIVE ASSESSMENT

The students organise and run the session, which requires each student in turn to discuss and explain to the others a theory question from a brush-up paper

The group decides whether to elect a leader, or the leadership may move between the students, the assessor can hint and advise the group, and can prompt the group to elect a leader who is possibly a student who has already completed a formative assessment in a previous stage

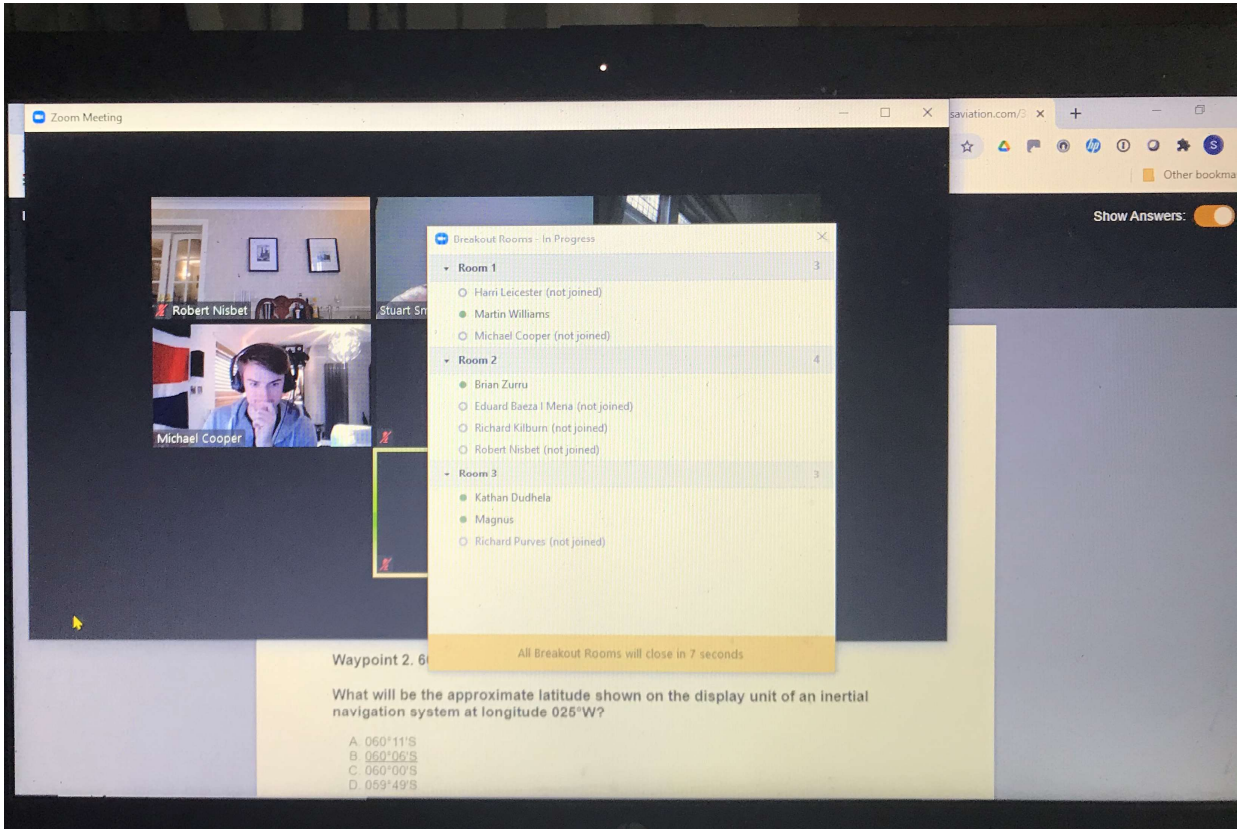


FORMATIVE ASSESSMENT

If the student runs into difficulties, they can ask for assistance from the others in the group

After an hour, each student delivers the answer to their question to the main group

The assessment test questions may be selected by CATS to be of higher order Bloom's taxonomy types (for example describe, explain, calculate), and from topics that the TKI knows can be related to TEM and / or are often more problematic for the students



ASSESSOR INPUT

The assessor is a TKI for the questions being discussed but primarily observes the session, facilitating with hints or prompts, and only comments if asked to, or if necessary to correct a theoretical knowledge deficit in the application of knowledge

The assessor is also responsible for the assessment environment, encouraging explorative / corrective discussions if not evident, and if necessary guiding the exercise by referring to the pilot competency objectives in a positive light

Name	Task	Time	Date
A Student	Lecture presentation on temperature	1300 – 1320 h	19-07-21
Session 1 Comments *A student demonstrated core competencies satisfactorily and showed exemplary leadership and teamwork skills*			

LO		Topic	Session number			Grade met
100 03 00 00		**LEADERSHIP AND TEAMWORK**	**1**	**2**	**3**	**SATISFACTORY**
(01)		Show the ability to create an atmosphere of open communication and to encourage participation.	✓			✓
(02)		Show the ability to use initiative and give instructions and / or assistance when appropriate.	✓			✓
(03)		Show the ability to anticipate and respond appropriately to other's needs.	✓			✓
(04)		Show the ability to give and receive feedback constructively.	✓			✓
(05)		Show empathy, respect and tolerance for others.	✓			✓
(06)		Show the ability to address and resolve conflicts and disagreement in a constructive manner.				
(07)		Show the ability to project self-control in all situations.	✓			✓
100 04 00 00		**PROBLEM-SOLVING AND DECISION-MAKING**	**1**	**2**	**3**	
(01)	X	Describe an effective decision-making process.	**NA**	**NA**	**NA**	**NA**
(02)		Show the ability to seek relevant information from appropriate sources.	✓			✓
(03)		Show the ability to identify and consider options effectively in a group or crew situation.	✓			✓
(04)		Show the ability to monitor, review and adapt decisions as necessary in a group or crew situation.	✓			✓
(05)	X	Identify the factors affecting the availability of time in operational situations and describe appropriate use of this time for decision-making in reviewed situations and / or practical exercises.	**NA**	**NA**	**NA**	**NA**

KSA CERTIFICATE

Records and debrief:

The assessor takes written notes during the session which are retained on the students' files and debriefs the group at the end of the assessment (on both the knowledge and competencies)

If necessary the assessor conducts a one-on-one debrief with individual students

CATS

CERTIFICATE OF KSA100 COMPLETION

CAA APPROVAL NO: GBR.ATO-0136
EASA APPROVAL NO: AT.ATO.173

Cranfield Aviation Training School Ltd and
CATS International GmbH certify that:

Surname: First Name(s):

Licence Number:

Has completed the following course of training:

Course: ATPL 2020 MODULAR THEORETICAL KNOWLEDGE – KSA 100
Comprising: THE STUDENT HAS COMPLETED THE KSA 100 ASSESSMENT AND MENTAL MATHS TEST IN ACCORDANCE WITH PART-FCL.025(a)(2) AND PART-ORA.ATO.230(a)

Completion Date:

I certify that the applicant has satisfactorily completed the KSA 100 Assessment and Mental Maths Test in accordance with Part-FCL and Part-ORA for the issue of an Airline Transport Pilots Licence.

Signature of Head of Training:

Dr Stuart E. Smith

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FINDINGS

What do the students think?

The students thoroughly enjoy the sessions. They engage more and complete the day with a richer learning experience. The blended style of instructor teaching, breaks the day up, and rather than being a day of instructor lecturing with variable student input, the students leave with a feeling of satisfaction of a holistic learning experience and a general feeling of inclusion in the teaching and learning process

What do instructors think?

The instructor role changed. They now took on more of an observational and facilitator role. This freed up their time to appreciate the individual student learning experience

What does the school think?

KSA 100 assessment provides a long overdue assessment of key pilot attributes that need to be instilled such as mental numeracy, and development of the ICAO core competencies

In a well-thought-out programme KSA 100 can be delivered in a manner which enhances training. Deep learning is possible, and students engage more and gain more from the ground school experience

Instructors must blend the teaching, key facts for subjects must still be delivered and teaching is still very important. The opportunity to enhance engagement and foster deeper understanding is clearly apparent

QUESTIONS

Thank you and please take note of any questions that you may have
and submit them using Sli.Do
(for the later question and answer sessions)

A PRECISION APPROACH

AFTA

Atlantic Flight Training Academy

How did AFTA development its KSA 100

Students that are studying the ATPL theory are on a track to work in commercial aviation.

We spoke to are airline and corporate jet partners to get an idea of where student competencies were lacking or could be improved.

How did AFTA development its KSA 100

Feedback from our partners

- Time management in preplanning and cockpit setup
- What information is:
  - not necessary now but maybe needed later
  - is irrelevant for todays operation
  - what we don’t have and we need
- Keeping up with the aircraft
  - descent planning
  - what mode the aircraft is in and is going into next
- Interaction with a Captain
  - student has been trained to this point with someone of equivalent experience and age

General Trend

Students are not ready or aware of what to do on the first day of commercial flying

- Some of this is solved by APS MCC
- We could use KSA 100 to development competencies prior to MCC

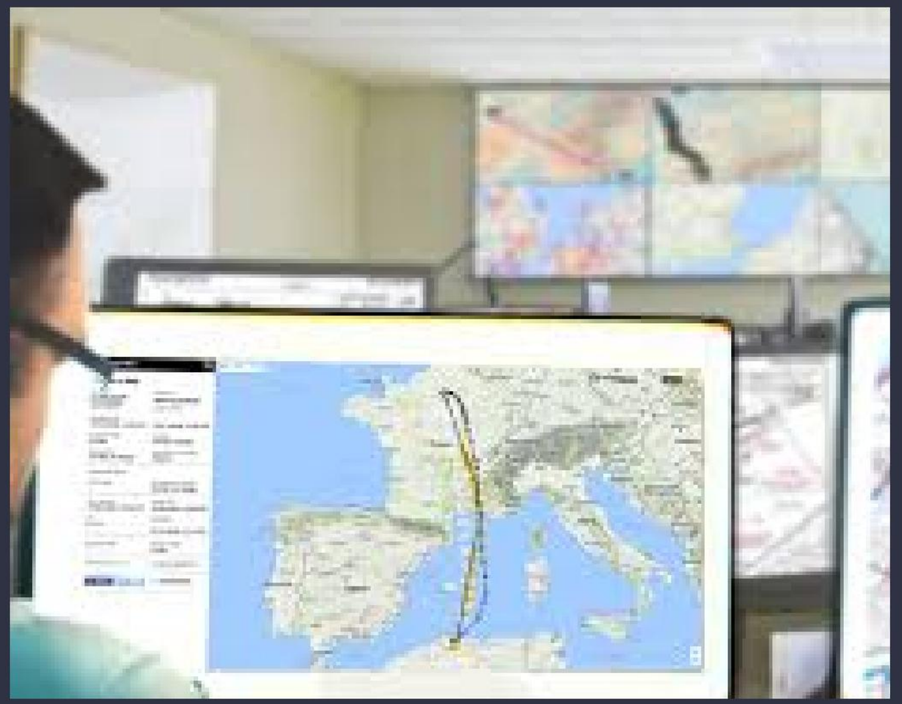
The What and The How

The What:

- What is taught during flight training up to the point were they do the ATPL theory
- What is taught in the ATPL theory itself that will be used in the rest of their career.

The How:

- How do we get students to apply and demonstrate what they have learned, both in the flying and theory, in situations they may have not seen before, that occur in commercial aviation.



AFTA’s Summative assessment

The content of the test is designed to cover the following learning objectives:

- 100 02 01 00-Communication.
- 100 02 03 00 - Problem-solving and decision-making.
- 100 02 05 00 - Workload management

The first of AFTA’s Summative assessment is in two parts

AFTA's Summative assessment

Part 1

The students will be required to review the flight performance and planning for a medium range jet transport aircraft in a fixed period of time.

On completion of the review the students will then be questioned by an instructor on the information and decisions made such as:

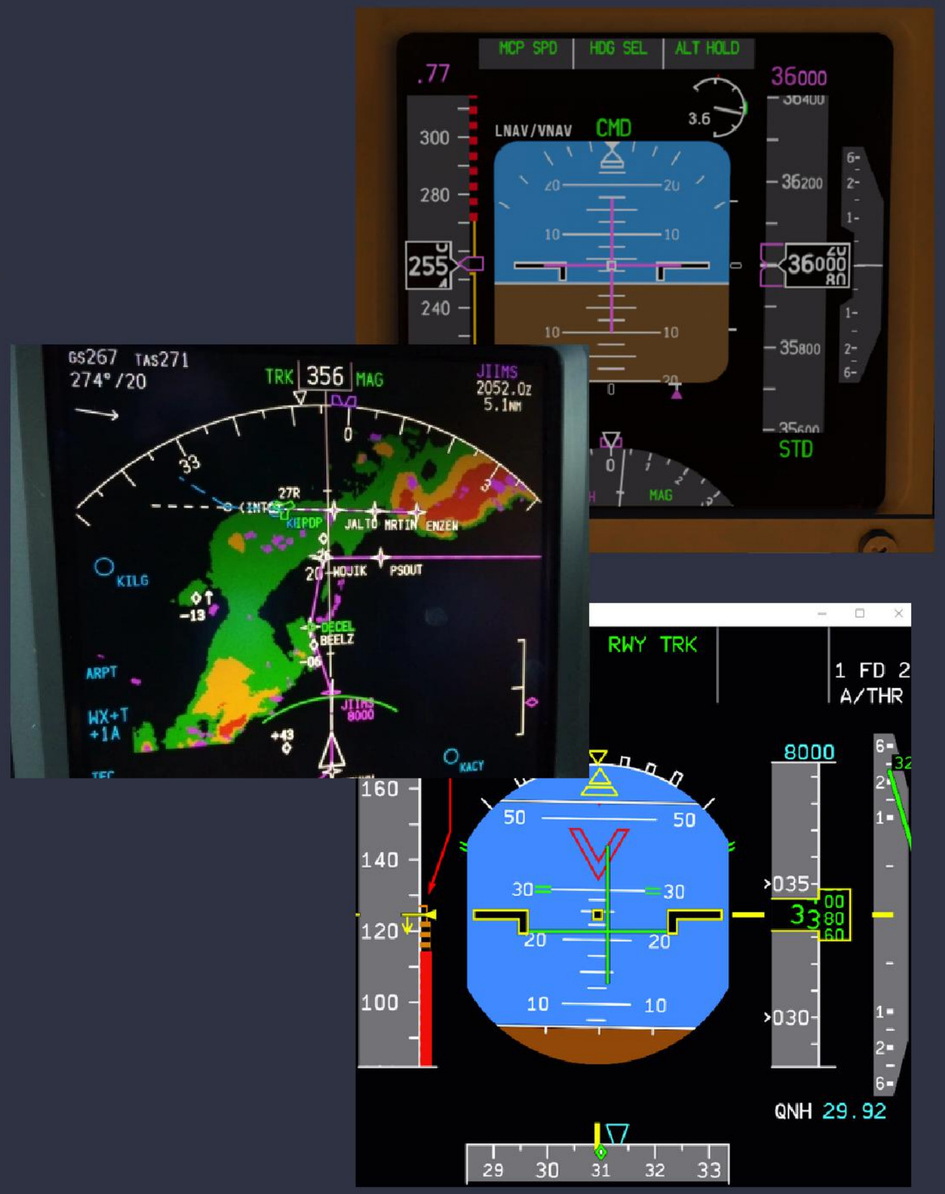
- Fuel to be carried
- Performance calculations
- Selection of alternates
- Threats and errors

AFTA's Summative assessment

Part 2

The students will be shown flash cards of the PFD/ND and FMA of an MRJT and be questioned on:

- The current situation
- Potential situation
- Subsequent actions



AFTA's Summative assessment ongoing development

The assessments have been ongoing for 24 months

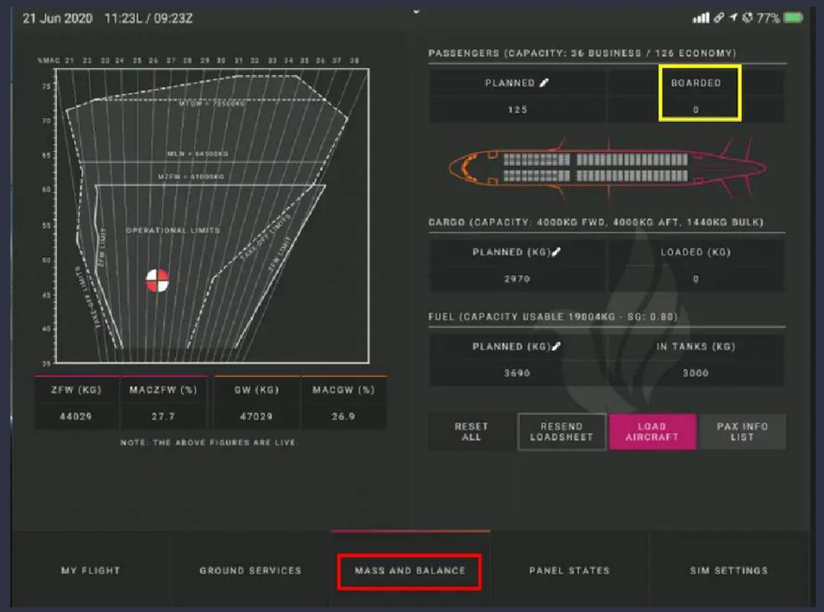
Feedback from the instructors who have had the students in MCC have led us to introduce the following:

- In the flightplanning assessment the instructor is a qualified current airline Captain who plays a Captain with poor CRM.
  - introduces the cockpit gradient
  - more challenging environment
  - brings real life into the scenarios
- Ensure that PFD ND flashcards are from different aircraft
- Include engine instrumentation
  - hung start, hot start , severe damage, fire etc.

AFTA's Summative assessment ongoing development

Future ideas:

- Expand on flash cards to videos of scenarios
- Add flight planning scenarios that include ETOPS / high terrain routes/ volcanic ash etc.
- Use EFB for performance and Mass & Balance



Thank you

Atlantic Flight Training Academy

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ATPG

KSA Mental Maths

Jacqui Suren

EASA KSA Webinar

13th December 2023

Mental Maths Overview

Why mental maths?

Regulatory requirements

Best practices

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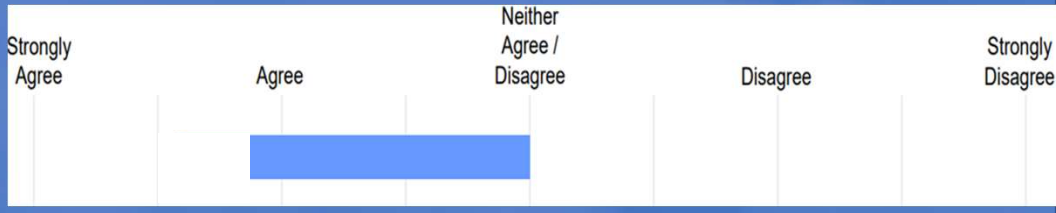
Why mental maths?

Mental maths is an essential pilot skill, as both an operational enabler and as a safety skill to identify possible errors

With the dominant use of the electronic calculator in schools today, there was concern over pilots' mental maths ability entering the industry

IAAPS European Operator Survey 2015

'The ability of a pilot to conduct mental math approximations in applied situations and for cross checks is important for safety'



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The regulatory requirements

Mental maths LOs

1) Convert between volumes and masses of fuel using range of units.
2) Estimate time, distance and speed.
3) Estimate the rate of climb or rate of descent, distance and time.
4) Add or subtract time, distance, and fuel mass.
5) Calculate fuel burn given time and fuel flow.
6) Calculate the time available given relevant fuel information.
7) Determine the top of descent using a simple method
8) Determine values varied by a percentage
9) Estimate heights at distances on a 3-degree glideslope.
10) Estimate headings using the 1-in-60 rule.
11) Estimate headwind and crosswind components

100 04 LOs

ATPG

The regulatory requirements

How tested?

'Demonstrate, in test scenarios or scenario exercises, the ability in a time efficient manner to make correct mental calculation approximations'

- Written answer or oral in format
- Answered using mental maths and short term memory
- Be scenario-based
- Include at least two questions per 100 04 LO

ATPG

The regulatory requirements

Standard and when tested?

- At least one KSA mental maths test is to be conducted and the outcome(s) documented in the student's training records.

Minimum score to pass the Area 100 KSA mental maths test(s) is 75 % or ATO pass score that is higher than 75 %

The summative mental maths test must be passed before the student sits their last TK subject exam paper for the first time

Best practices

Mental maths training

- Mental maths, together with basic refresher maths, in a pre-entry course

- Mental maths lessons early in the TK course

Best practice example: 30 minutes at the end of each day's lessons, four days a week for first three weeks of the course, also available to senior courses for revision.

- Mental maths applied in subject lessons, via TKI questions

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Best Practices

Testing

- One or more progress mental maths tests, earlier and/or during the TK course, provides the student and ATO awareness of the student's ability and identify further required development
- The summative maths test is scheduled after the student has have covered all the related theory aspects and once the student has had many opportunities to use and develop their mental maths skills
- Scheduling the summative mental maths test at least one month before the final ATO and EASA exams, enables time for identified mental maths further training to be conducted and for a re-sit.

EASA KSA Webinar

Mental Maths
KSA100

Please note any questions, and ask via the Sli.Do App

EASA
European Union Aviation Safety Agency

Course design

Frances Condron, Senior ECQB Expert, EASA

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Instructional Systems Design

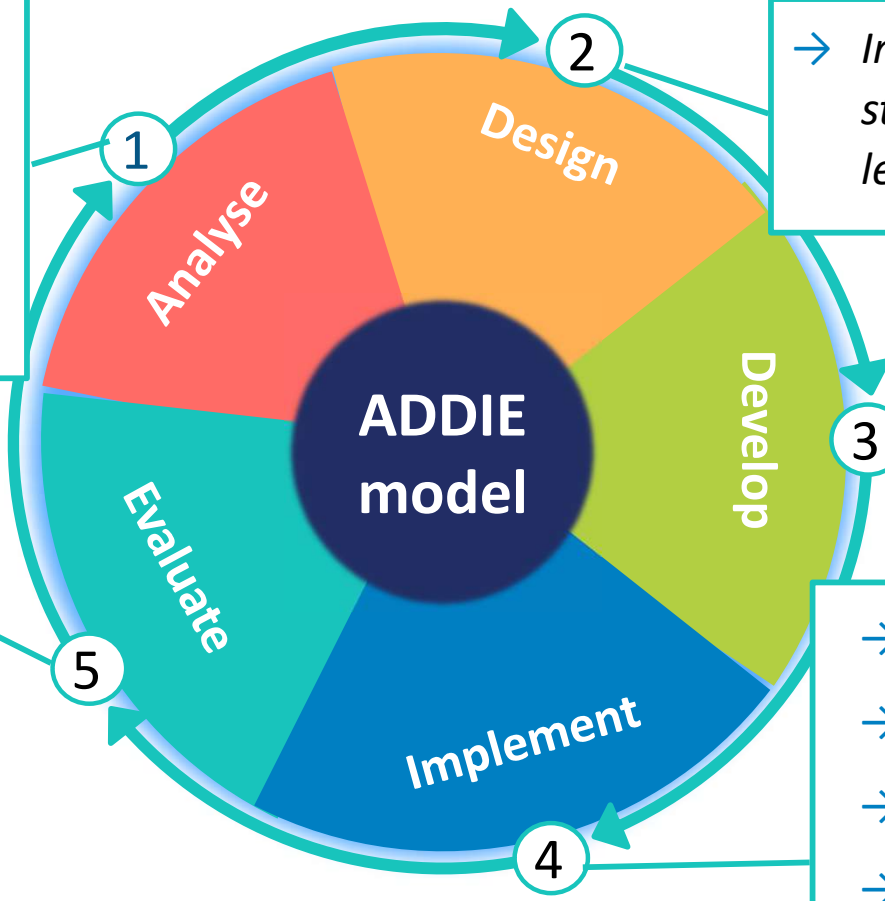
- ISD supports the creation of courses that develop the student‘s skills and knowledge
- ISD provides a framework to support change management:
  - Ensure that students and training organisations achieve their learning objectives
- And reach the desired performance standard
  - Through appropriate use of a variety of learning methods and environments
- Used since the 1970s in US Army training
- And it is extensively applied in learning technology

Where ISD is mentioned in AMC/GM

- AMC1 FCL.310; FCL.515(b); FCL.615(b):
  - *ATOs are required to produce a training plan for each of their courses based on the ISD methodology*
- AMC2 ORA.ATO.230(a):
  - *An ATO that delivers theoretical knowledge instruction for professional pilot licences should ensure that:*
  - *the courses are designed and developed using the ISD methodology, which is supported by a robust and effective management system*
- GM5 ORA.ATO.230(a):
  - Describes the ADDIE framework as an example of ISD

ADDIE model as an example of ISD

- *Understand instructional goals*
- *Consider resources, facilities, student characteristics*
- *Industry needs*



- *Instruction and assessment strategies must align to the learning objectives*
- *Develop & review instructional resources*
- *Train the trainers*
- *Prepare learning locations*
- *Enroll students*
- *Deliver the course*
- *Evaluate how well the course delivers the learning objectives*
- *At the beginning and end of the course*

EASA

ISD and instructional design

- There are many models for instructional design
- The approach you use should enable you to design and develop changes to your training course that work for all involved, with evidence for this
  - It's really difficult to identify all affected elements at the beginning of the process so expect to repeat the cycle
    - Cycle 1: prototype
    - Subsequent cycles improve and refine

EASA
European Union Aviation Safety Agency

Thank you for your attention!

easa.europa.eu/connect

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Area 100 KSA

Designing an effective Area 100 KSA Implementation

Course Design

Area 100 KSA at FTE

ADDIE Model

Analyse the training needs

Design the course and assessment plan

Develop the training and assessment materials

Implement the course

Evaluate the outcome

Ref.: GM5 ORA.ATO.230(a)

Analyse

the training needs

Design

the course and assessment plan

Develop

the training and assessment materials

Implement

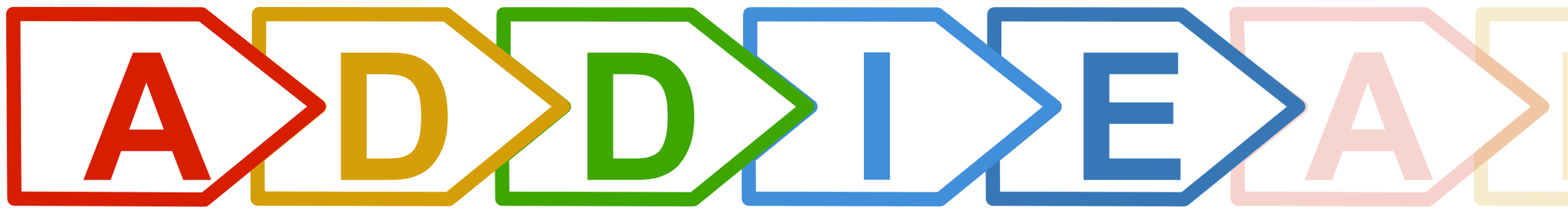
the course

Evaluate

the outcome

First Version

Area 100 KSA at FTE



Analyse

the training needs

What we asked ourselves:

- Who is the target audience?
- What are the objectives?
- What do we already do?
- What do we need to develop?
- What resources do we need?

Who is the target audience?

- **Age:** from 17,5 to 40 years old
- **Education:** high school to master degree's
- **Flight Experience:** none to a full PPL
- **Work Experience:** none to several years in anything you can think of
- **Cultural Background:** anyone from anywhere

What are the objectives?

- Develop and elicit a higher level of thinking in future pilots during their theoretical knowledge training

- Complement the assessment method of the current exam system

- Integrate various topics from across the theoretical knowledge course

- Develop the students' core competencies during the theoretical training

Ref.: Explanatory Note to Decision 2018/001/R

Area 100 KSA Learning Objectives

- 100 02 01 00 Communication
- 100 02 02 00 Leadership and Teamwork
- 100 02 03 00 Problem-Solving and Decision-Making
- 100 02 04 00 Situation Awareness
- 100 02 05 00 Workload Management
- 100 03 01 00 Application of Knowledge
- 100 03 02 00 UPRT and Resilience
- 100 04 00 00 Mental Maths

Ref.: Appendix to AMC1 FCL.310; FCL.515(b); FCL.615(b)

What do we already do?

FTE's ATPL Course

Training delivered in 5 Phases:

- **Ground School** Phase 1 - 19 Weeks
- **Flying** Phase 1 - 12 Weeks
- **Ground School** Phase 2 - 12 Weeks
- **Flying** Phase 2 - 13 Weeks
- **APS/MCC** - 5 Weeks

Pre Area 100 KSA Assessments

Ground School Phase 1

								PT								M		E	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Progress Tests and briefing with CTKI

School's Mock Exams

Official Exams and briefing with CTKI

Flying School Phase 1

1	2	3	4	5	6	7	8	9	10	11	12

Ground School Phase 2

				PT					M		E
1	2	3	4	5	6	7	8	9	10	11	12

Official Exams and briefing with CTKI

Progress Tests

School's Mock Exams

Student's Reports

Instructors' Report:

- Instructors produce an individual narrative report and grade the students on their classroom performance;
- Not seen by the student.

CTKI Report

- It is a consolidated version of the instructors' report;
- Briefed to the students.

What do we need to develop?

Area 100 KSA Assessments

- One (1) formative assessment exposing the students to ***most*** of the KSA 100 02 and 03 LOs;
- Two (2) summative assessments exposing the students to ***all*** *of the KSA 100 02 and 03 LOs between the two*;
- One (1) mental maths test with ***at least*** 22 questions (2 per KSA 100 04 LO).

Ref.: AMC3 ORA.ATO.230(a). and AMC4 ORA.ATO.230(a).

What do we need to develop?

Instructors' Training:

- Train the instructors to deliver the Area 100 KSA training
- Train the instructors to assess the Area 100 KSA training
- Develop a recurrent standardisation program to ensure continued inter-rater reliability (concordance assurance)

Ref.: AMC2 ORA.ATO.230(a)

What resources do we need?

- Fully equipped classroom
- Some stationery
- Trained instructors to deliver KSA training and assessment
- No simulators

Design

the course and assessment plan

Area 100 KSA Assessments:

Ground School Phase 1

								PT								M		E	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Formative Assessment

First Summative Assessment

Flying School Phase 1

1	2	3	4	5	6	7	8	9	10	11	12

Ground School Phase 2

				PT					M		E
1	2	3	4	5	6	7	8	9	10	11	12

First attempt at the last exam.

Second Summative Assessment + Mental Maths

The Formative Assessment:

- Groups of 4 Students
- Power Point presentation;
- On a topic already covered;
- Designed to give the opportunity to display:
  - 100 02 01 00 - Communication;
  - 100 02 02 00 - Leadership and teamwork;
- Debrief with the CTKI and Course Mentor.

The First Summative Assessment:

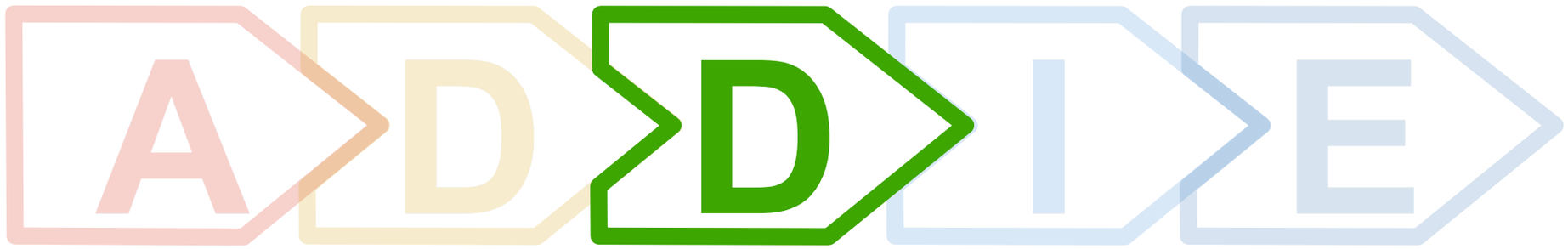
- 4 candidates group exercise during the admission interview;
- Generic role-playing exercise (*a nuclear holocaust just happened and your are all in a bunker…*);
- Designed to give the opportunity to display:
  - 100 02 01 00 - Communication;
  - 100 02 02 00 - Leadership and teamwork;
  - 100 02 03 00 - Problem-solving and decision-making;
  - 100 02 05 00 - Workload management.
- Debrief with an Assessor.

The Second Summative Assessment:

- 3 against 3.
- Timed exercises:
  1. Cross-subject group calculation exercise (031, 032, 033);
  2. Role-Playing a loss of awareness regarding automation while assembling lego aeroplanes - 40 min;
  3. Whoever builds more aeroplanes wins.
- Designed to give the opportunity to display all applicable LOs.
- Debrief with the CTKI and Course Mentor.

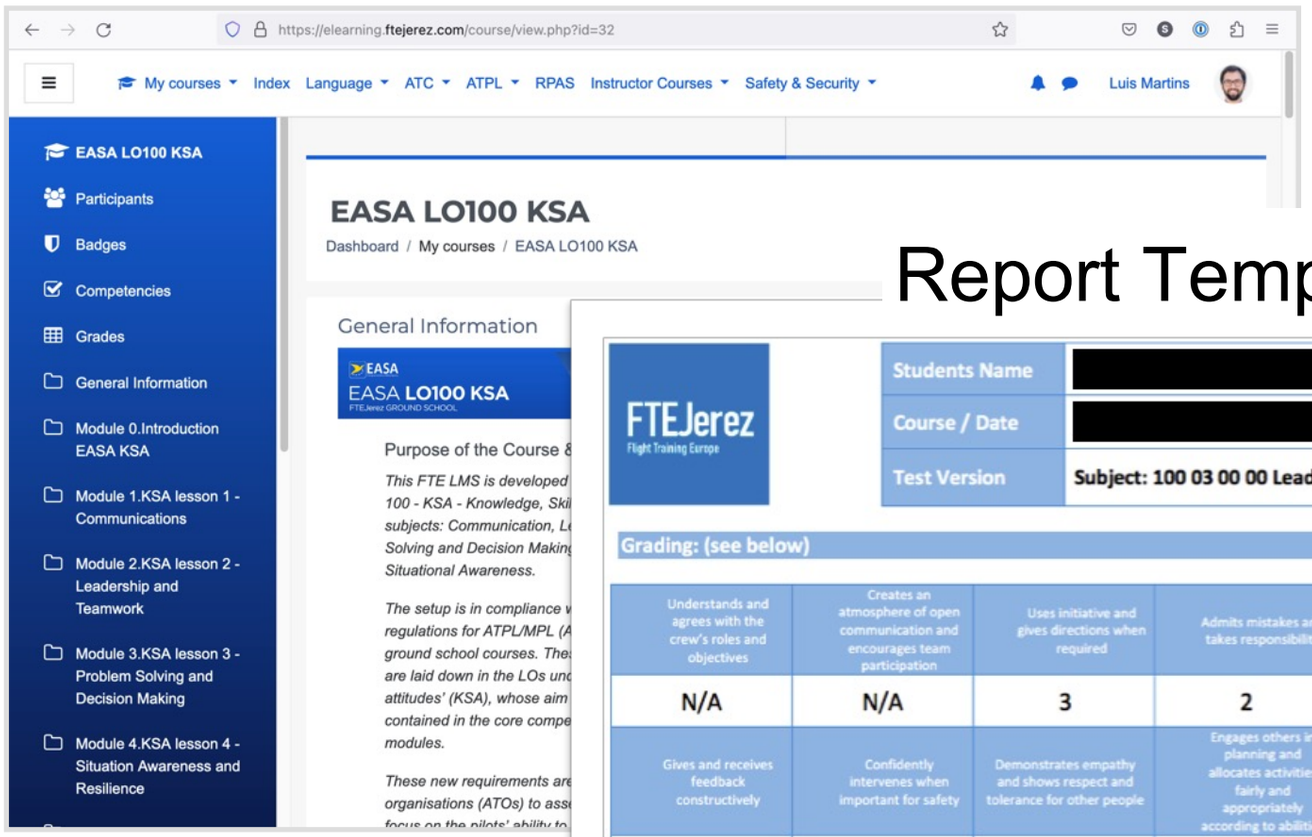
Develop

the training and assessment materials

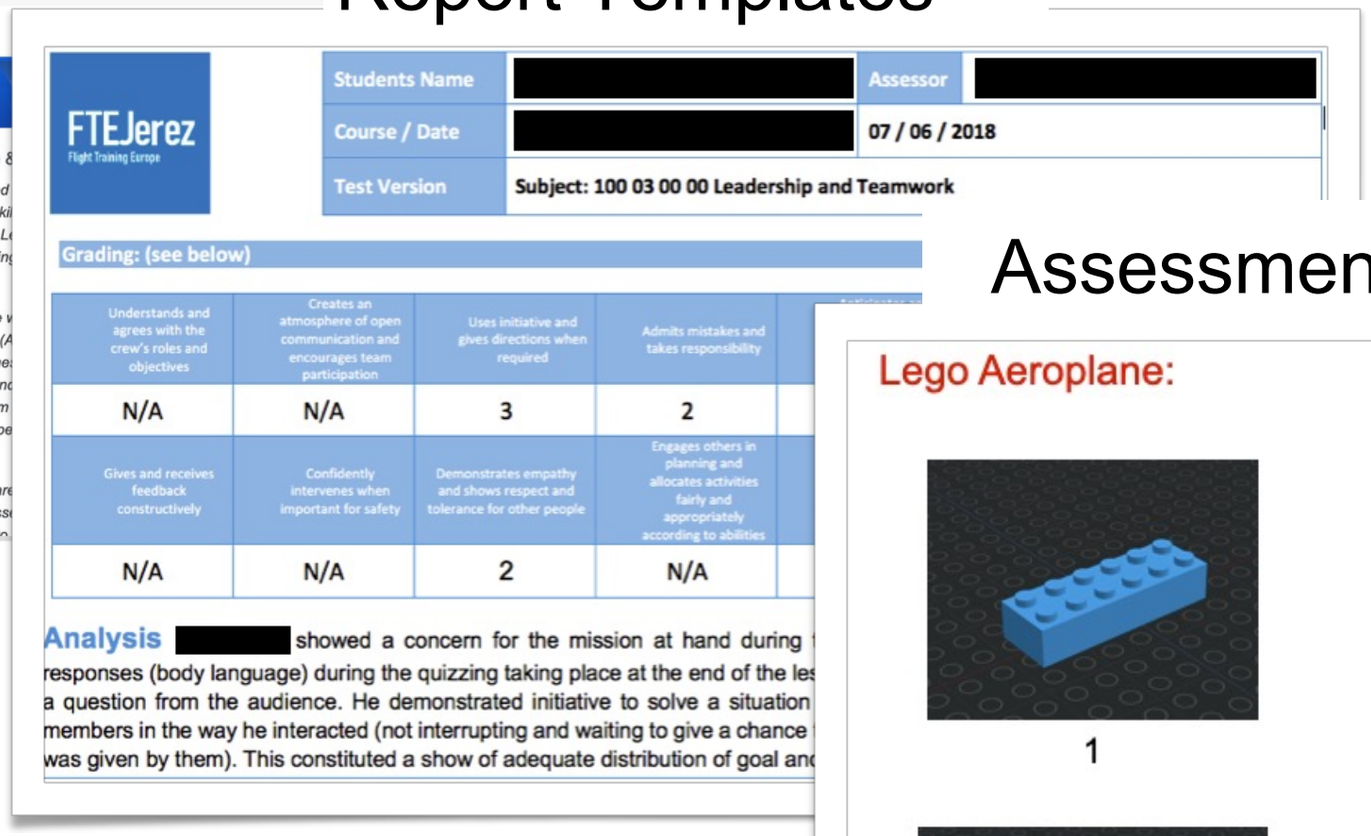


FTEJerez

Online Training for Instructors



Report Templates


FTEJerez
Flight Training Europe

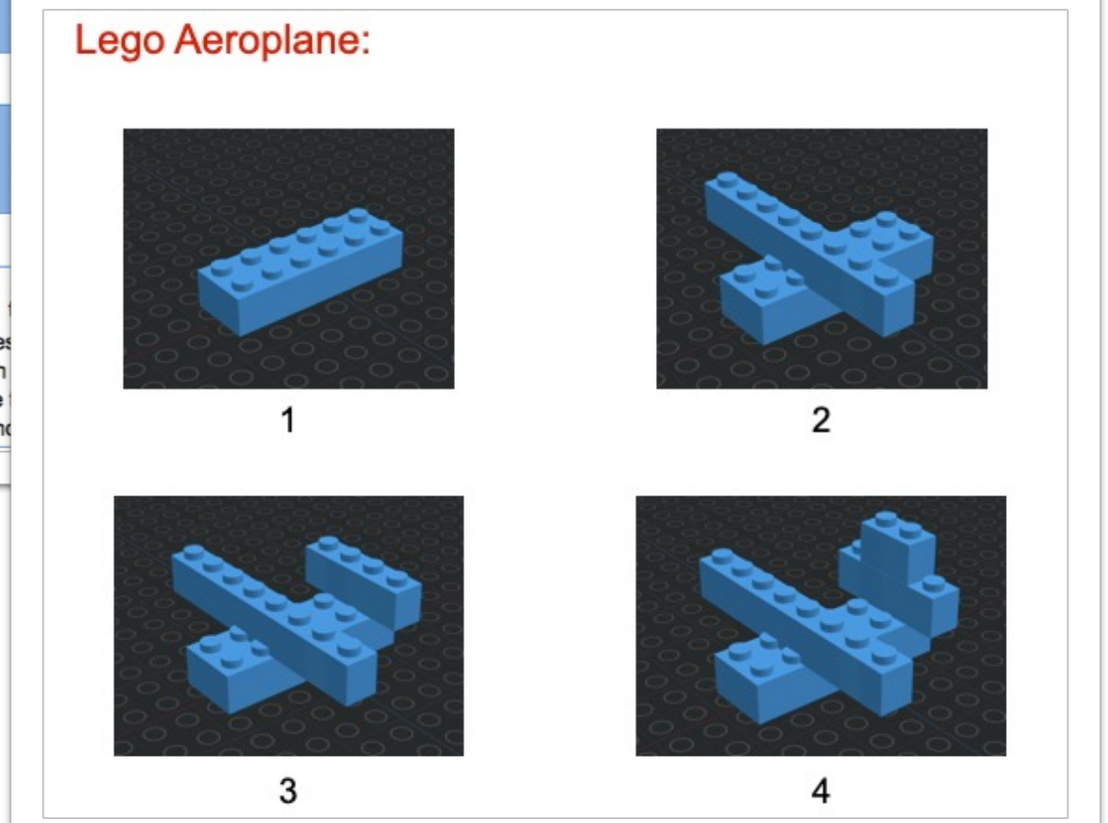
Students Name	[redacted]	Assessor	[redacted]
Course / Date	[redacted]	07 / 06 / 2018	
Test Version	Subject: 100 03 00 00 Leadership and Teamwork		

Grading: (see below)

Understands and agrees with the crew's roles and objectives	Creates an atmosphere of open communication and encourages team participation	Uses initiative and gives directions when required	Admits mistakes and takes responsibility	
N/A	N/A	3	2	
Gives and receives feedback constructively	Confidently intervenes when important for safety	Demonstrates empathy and shows respect and tolerance for other people	Engages others in planning and allocates activities fairly and appropriately according to abilities	
N/A	N/A	2	N/A	

Analysis [redacted] showed a concern for the mission at hand during
responses (body language) during the quizzing taking place at the end of the les
a question from the audience. He demonstrated initiative to solve a situation
members in the way he interacted (not interrupting and waiting to give a chance
was given by them). This constituted a show of adequate distribution of goal and

Assessment Materials


Lego Aeroplane:

1

2

3

4

Implement

the course

Instructor Training

Formative and Summative Assessments

Evaluate

the outcome

How did it go?

- First few courses went well.
- After a while, not so well…
  - Quality of the legacy classroom performance reports decreased;
  - Assessments turned into box ticking exercises

Second Version

Area 100 KSA at FTE

Analyse

What we asked ourselves:

- What **improved**?
  - Awareness of the core competencies.

- What **got worse**?
  - Assessment done during the lessons lost quality.

- What can we **further improve**?
  - Include the instructors' assessment done during the lessons in the Area 100 KSA programme.

Design

Using what can be observed during lessons

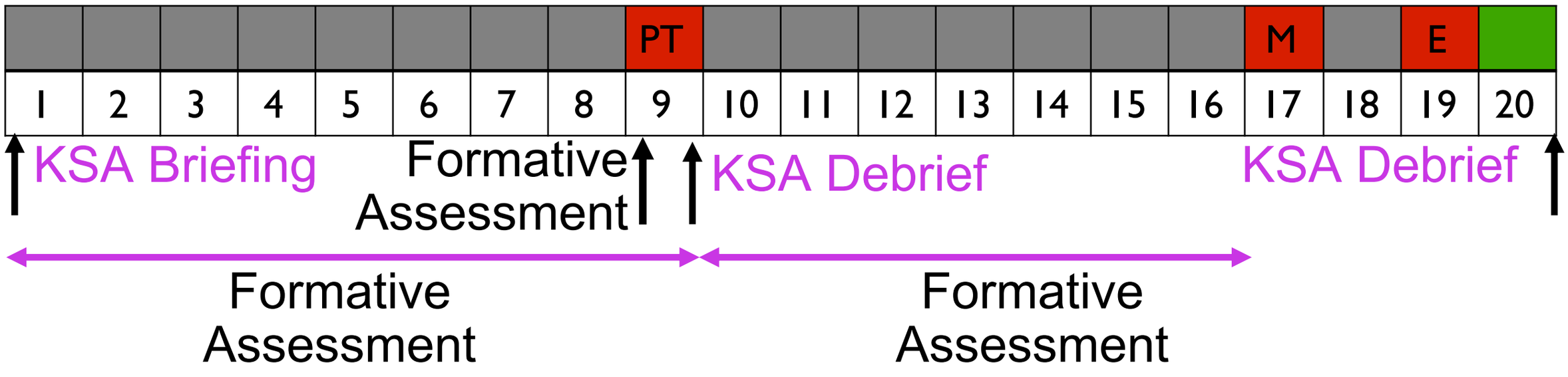
- Kept two summative assessments - exercises in controlled conditions.
- Leaned on AMC3 ORA.ATO.230(a) (b) to use the time in class for the formative assessment:

(b) The formative assessment(s) should:

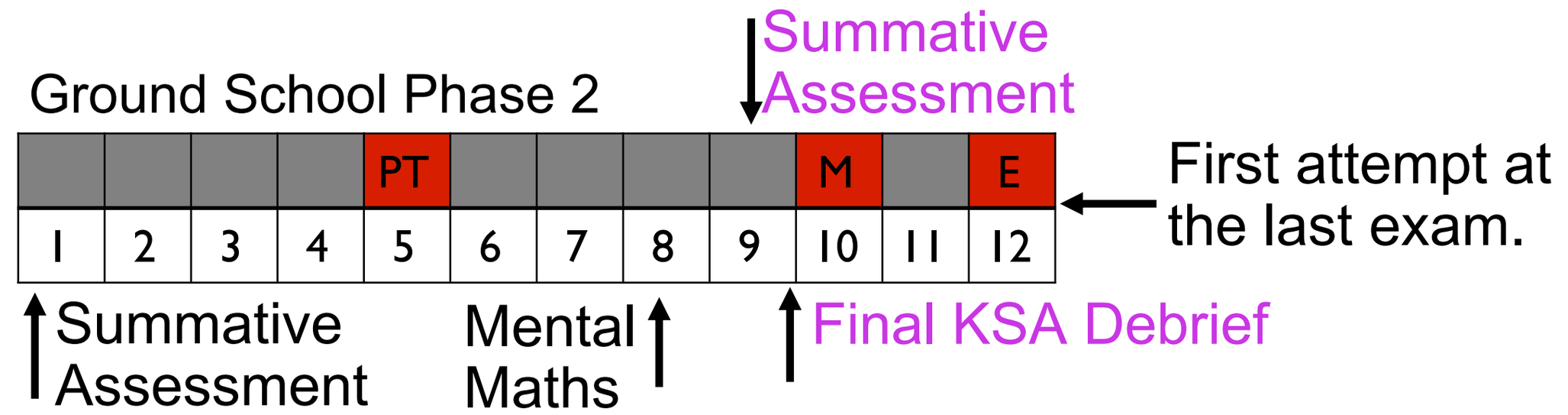
(1) be designed such that the student has the opportunity to ask questions and develop competencies in most of the LOs in 100 02 and 100 03 of Area 100 KSA;

(2) be conducted during the training; the ATO may in addition conduct a formative evaluation (continuous assessment) over a specified phase of the course;

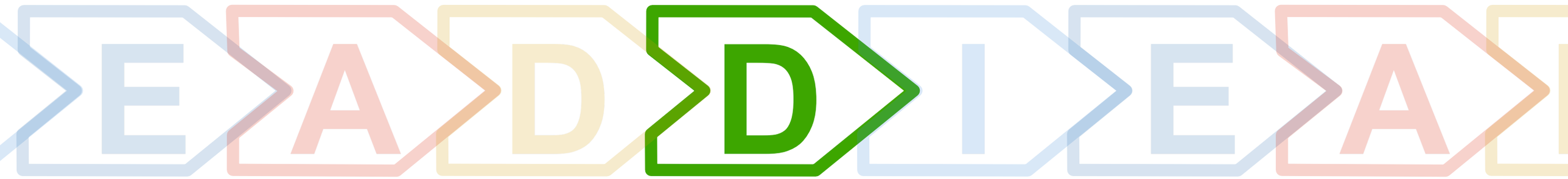
Ground School Phase 1



Ground School Phase 2



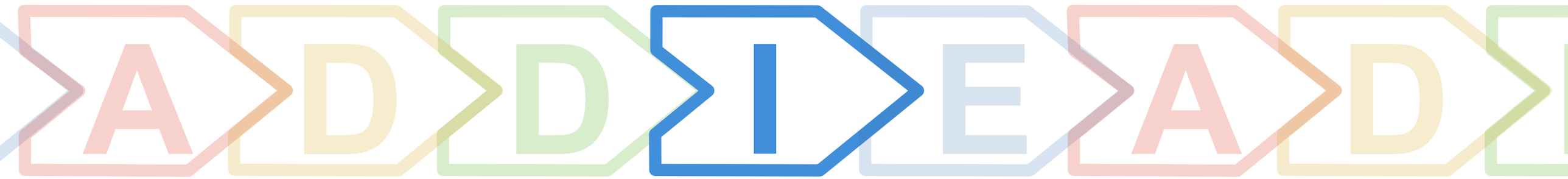
Develop



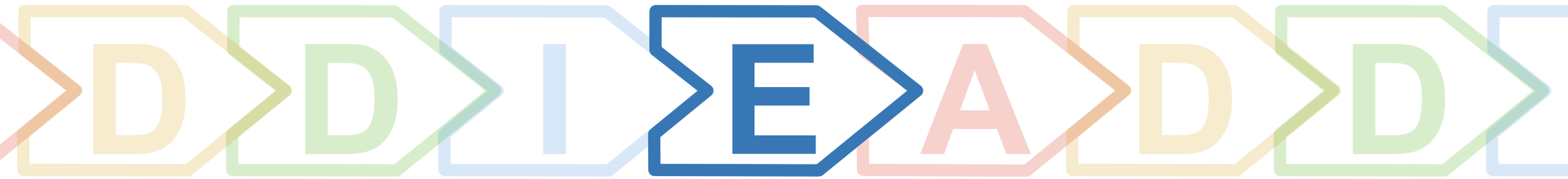
Most of the work was already done…

- Identified what can be observed and recorded in class that later could be classified against the Area 100 KSA learning objectives;
- Adapted the instructors' reports;
- Allocated more time for the Area 100 KSA debriefs.

Implement



Evaluate



How did it go this time?

- The instructors appreciated the decreased workload - one integrated system rather than two;
- The assessments became seamlessly integrated into and throughout the entire training syllabus;
- The students feel like the course is aimed at their development, rather than at passing exams;

Third Version

From Area 100 KSA to Full CBTA

ADDIE will return

FTEJerez
Flight Training Europe

ATPG

ATPG

Area 100 KSA Assessment Grading

Jacqui Suren

EASA KSA Webinar
13th December 2023

ATPG

Area 100 KSA Assessment Grading Overview

- The Pilot Competency OBs/ KSA LOs
- Purpose of KSA ATO Assessment
- Functions of competency grading in TK
- **KSA Pilot Competency Grading**

ATPG

The Pilot Competency OBs/ LOs

The Area 100 KSA LOs relate directly to the EASA EBT Pilot Competency OBs of today, which have been slightly updated and amended from the past ICAO competencies

- The ATPG proposes that an ATO should have the choice of using the KSA 100 LOs, or the related updated EASA EBT Pilot Competency OBs.
- In a few cases OBs have moved into or between competencies.

Example: Problem solving and decision making

	EASA EBT - Problem solving and decision making OBs	**EASA KSA 100 02 03 Problem solving and decision making (PSD) LOs/OBs**
		Show the ability to ….
6.1	Identifies, assesses and manages threats and errors in a timely manner	Manages threats and errors in a timely manner. Identifies and manages risks effectively
6.2	Seeks accurate and adequate information from appropriate sources	Seeks accurate and adequate information from appropriate sources
6.3	Identifies and verifies what and why things have gone wrong, if appropriate	Identifies and verifies what and why things have gone wrong
6.4	Preservers in working through problems, whilst prioritising safety	Preservers in working through problems
6.5	Identifies and considers appropriate options	Identifies and considers options
6.6	Applies appropriate and timely decision-making techniques	Employs proper problem-solving strategies
6.7	Monitors, reviews and adapts decisions as required	Monitors, reviews and adapts decisions as required
6.8	Adapts when faced with situations where no guidance or procedure exists	-
6.9	Demonstrates resilience when encountering an unexpected situation	Demonstrates resilience when encountering an unexpected situation

ATPG

Purpose of ATO KSA Assessments

1. The need for deeper understanding and the application of knowledge (including TEM).

- Met through ATO active learning methods and KSA assessments in the TK phase, which enable the higher taxonomy learning objectives to be explored/taught effectively, whilst also providing across-subject, practical and scenario application learning environments (training)
- The KSA assessment exercises enable the students to demonstrate their across-subject, application of knowledge for assessment (including TEM). These assessments supplement the EASA single subject examination system (assessment)

ATPG

Purpose of KSA ATO Assessment

2. The development of the Student's Pilot Competencies

- The KSA 100 02 LOs are based on the competency observable behaviours (OBs). Previously known as performance indicators
- The ATO designs each assessment exercise for a given environment and exercise aim, which to complete well, is likely to require the student to show particular, 'relevant', competency OBs
- By the TKI observing the exercise, they can record (take note) of what they see and then relate or classify these to the competency OBs. They can then grade the relevant competencies and provide feedback on the competency strengths and weaknesses and how to improve further

ATPG

Functions of competency grading in TK

1. For student development

- Grading of each competence gives a picture across the Pilot Competencies, enabling the individual student and TKIs to focus training on the weaker areas whilst ensuring the further development of all the competencies

3. For data analysis

- Data analysis assists the evaluation of course design and student's progress

2. To ensure a minimum competency standard (satisfactory) by the end of the TK phase (training milestone).

The student must be **satisfactory**, (minimum is a grade L2*), in each competence, in each summative assessment.

* Grade L2 signifies the grade 'level 2' as included in GM. To prevent confusion with EBT level 2, ' grade L2' is being used here.

ATPG

KSA Pilot competency grading

- The over-riding requirement, for the student to reach the **satisfactory** level in each summative assessment (i.e. grade L2 or above), is that the student *cannot* have had a negative or neutral effect on the outcome, or on others, in that competence
- The most common way to determine the competency level, is for the TKI to observe how MANY, how OFTEN and how WELL the student demonstrated the OBs (LOs) in that competence. Plus, the level of success of the outcome
- To be able to do this, the TKI completing the assessment must be familiar with the competencies and OBs/LOs.

ATPG

KSA Pilot competency grading - Process

- The TKI assessment process can be described as (**ORCA**- Observe, Record, Classify and Assess).
- The TKI **observes** the student(s), taking notes of what they see (**Record**).
- The TKI then reflects on which OBs/LOs were demonstrated ('**Classify**') before grading (**Assessing**) the student's performance.
- Finally, the TKI then considers and adds to the report, how they consider that the student can develop further.

ATPG

KSA Pilot Competency grading – The grades

The essential boundary for the KSA summative assessments, is that between a grade L1 and L2, as this determines if the student's performance is unsatisfactory or satisfactory. (This binary system in EBT is known as Level 0)

Grade L1 (Unsatisfactory)

The student's performance in this competency was **ineffective or inadequate**, which in relation to this competency had a **negative or neutral effect** on others or on the outcome of the exercise

The student showed **none or few** of the relevant performance indicators (OBs) in this competency

Grade L2 (Satisfactory)

The student's performance in this competency was **satisfactory**, which had a slightly positive effect on the satisfactory outcome of the exercise, and in group situations had a slightly positive effect on others

The student showed at least **some** of the relevant performance indicators (OBs) in this competency **some** of the time

Some is around 'half'. i.e., the student showed around half of the OBs around half of the time

The minimum for 'some' is 35%, which means that a third of the OBs is a Grade 1 (Unsatisfactory)

ATPG

Pilot Competency Grading (including granularity)

Grade L3

The student showed **most** of the relevant performance indicators (OBs) in this competency, **most** of the time

Central to a **good outcome**

Grade L4

The student **consistently** showed **most or all**, of the relevant performance indicators (OBs).

Central to a **very good outcome**

Grade L5

The student **consistently** showed **all** of the relevant performance indicators (OBs)

Central to an **excellent outcome**

Notes:

1. The 'relevant' OBs are those likely to be observed in that designed assessment exercise.
2. ATOs may decide to combine grades 4 and 5, or just use unsatisfactory and satisfactory
3. The KSA grades do not equate to the EBT grades because the standard and conditions are different.

The need for inter-rater reliability/ concordance between ATO assessors, ATOs and NCAs

EASA KSA Webinar

AREA 100 KSA Assessment Grading

Please note any questions and ask via the Sli.do App

KSA Assessment Standardisation

Hilary Farley-Wood
Learning & Development Manager

13th December 2023 – EASA KSA WebEx

Aim higher.
Pilot training with an edge.

Leading Edge Aviation

Introduction

- How to assess
- Who can assess
- Challenges and Solutions
- Assessment standardisation

How to assess

- Observe student behaviour
- Record evidence
- Classify against LO/OBs
- Assess and feedback

Who can assess?

- relevant experience of the commercial aviation industry
- experience of ATPL syllabus
- successful completion of KSA Assessment Course to include:
  - understanding of the aims of KSA
  - knowledge of the pilot competencies
  - familiarity with the observable behaviours (performance indicators)
  - understanding of the ATO assessments to be conducted
  - achieving grading consistency to meet CAA/EASA standardisation requirements
  - familiarisation with ATO debriefing system

Challenges & Solutions

Challenges

- Achieving standardisation (inter-rater reliability)

Solutions

- Assessment training to include:
  - Familiarisation with the observable behaviours (OBs)
  - Evidencing OBs observed (using examples)
  - Pair/group work to optimise concordance

Assessment standardisation

- Practical Exercises in 2 sections: Text based then video

- Over to you!
  - Be ready to participate
  - Refer to competency OBs and grading matrix
  - Note down evidence for your assessment and debrief
  - Standardisation discussion

Section 1 – text based

Familiarity with Communication LO/OBs

Interactive exercises (1 - 4)

Familiarity with Communication LO/OBs

100 02 00 00	CORE COMPETENCIES LEARNING OBJECTIVES
100 02 01 00	Communication
(01)	Show the ability to identify whether the recipient is ready and able to receive the information.
(02)	Show the ability to appropriately select what, when, how and with whom to communicate.
(03)	Show the ability to communicate clearly, accurately and concisely.
(04)	Show the ability to confirm whether the recipient correctly understands important information.
(05)	Show the ability to listen actively and show you understand the information you receive.
(06)	Show the ability to ask relevant and effective questions.
(07)	Show the ability to adhere to standard radio-telephony phraseology.
(08)	Show the ability to accurately read, interpret, construct and respond to given documentation in English.
(09)	Show the ability to correctly interpret non-verbal communication.
(10)	Show the ability to use appropriate eye contact, body movement and gestures that are consistent with and support verbal messages.

Text based exercise
Which OBs do these relate to?

1. Student X listened attentively to others' point of view and used effective questioning to clarify or challenge suggestions e.g. "Could we just clarify we are planning to ……..?"

(05)	Show the ability to listen actively and show you understand the information you receive.
(06)	Show the ability to ask relevant and effective questions.

2. Student X was correct and concise, speaking at an appropriate pace and with clear voice projection, turning their body to face the group and using open body language including good eye contact.

(03)	Show the ability to communicate clearly, accurately and concisely.
(10)	Show the ability to use appropriate eye contact, body movement and gestures that are consistent with and support verbal messages.

Grading

- How would you grade this student?
- Did the student's communication have a positive effect on the outcome and the others?
- Yes
- Did the student demonstrate *some* of the OBs *some* of the time?
- Yes
  - Some means: approximately half with an absolute minimum of 35%.
  - E.g. in this exercise 9 of the OBs could possibly be observed. 4 were observed.
  - Not possible to assess frequency from this text example.

Satisfactory/Grade L2

Text based exercise
Which OBs do these relate to?

3. Occasionally Student X repeated requests for information at inappropriate times, using an impatient tone and talking over others, this information was not readily available at that stage of the task.

(01)	Show the ability to identify whether the recipient is ready and able to receive the information.
(02)	Show the ability to appropriately select what, when, how and with whom to communicate.
(10)	Show the ability to use appropriate eye contact, body movement and gestures that are consistent with and support verbal messages.

Grading

- How would you grade this student?
- Did the student's communication have a positive effect on the outcome and the others?
- No, it was negative.

Unsatisfactory/Grade L1

Text based exercise
Which OBs do these relate to?

4. Student X communicated rarely and only when prompted, their responses were difficult to hear and unclear. Student X required direction from teammates to locate relevant information amongst the documentation provided and overlooked some of the relevant details.

(02)	Show the ability to appropriately select what, when, how and with whom to communicate.
(03)	Show the ability to communicate clearly, accurately and concisely.
(08)	Show the ability to accurately read, interpret, construct and respond to given documentation in English.

Grading

- How would you grade this student?
- Did the student’s communication have a positive effect on the outcome and the others?
- No, it was neutral due to lack of contribution.

Unsatisfactory/Grade L1

Video Exercises – Over to you

Summative Flight Planning Exercise (extract)

Please note!

- The students shown are acting an agreed role for KSA Assessment training purposes only.

- Each student shown in the video clips performed to an excellent standard through their training, including KSA.

- We are immensely grateful to them for their support in creating this material.

Section 1

Moira – Which Communication LOs were shown?

100 02 00 00	CORE COMPETENCIES LEARNING OBJECTIVES
100 02 01 00	Communication
(01)	Show the ability to identify whether the recipient is ready and able to receive the information.
(02)	Show the ability to appropriately select what, when, how and with whom to communicate.
(03)	Show the ability to communicate clearly, accurately and concisely.
(04)	Show the ability to confirm whether the recipient correctly understands important information.
(05)	Show the ability to listen actively and show you understand the information you receive.
(06)	Show the ability to ask relevant and effective questions.
(07)	Show the ability to adhere to standard radio-telephony phraseology.
(08)	Show the ability to accurately read, interpret, construct and respond to given documentation in English.
(09)	Show the ability to correctly interpret non-verbal communication.
(10)	Show the ability to use appropriate eye contact, body movement and gestures that are consistent with and support verbal messages.

We saw that Moira was able to accurately interpret the documentation provided and that some other OBs/LOs were partially met, e.g. accurate and concise, however this should not be credited because Moira didn't communicate clearly, she was too quiet.

Unsatisfactory/Grade L1

Arif - Communication

100 02 00 00	CORE COMPETENCIES LEARNING OBJECTIVES
100 02 01 00	Communication
(01)	Show the ability to identify whether the recipient is ready and able to receive the information.
(02)	Show the ability to appropriately select what, when, how and with whom to communicate.
(03)	Show the ability to communicate clearly, accurately and concisely.
(04)	Show the ability to confirm whether the recipient correctly understands important information.
(05)	Show the ability to listen actively and show you understand the information you receive.
(06)	Show the ability to ask relevant and effective questions.
(07)	Show the ability to adhere to standard radio-telephony phraseology.
(08)	Show the ability to accurately read, interpret, construct and respond to given documentation in English.
(09)	Show the ability to correctly interpret non-verbal communication.
(10)	Show the ability to use appropriate eye contact, body movement and gestures that are consistent with and support verbal messages.

We saw Arif was able to communicate clearly and ask when he needed clarification however, after telling others what to do he didn't check if they understood and his tone and body language was negative.

Unsatisfactory/Grade L1

Brad - Communication

100 02 00 00	CORE COMPETENCIES LEARNING OBJECTIVES
100 02 01 00	Communication
(01)	Show the ability to identify whether the recipient is ready and able to receive the information.
(02)	Show the ability to appropriately select what, when, how and with whom to communicate.
(03)	Show the ability to communicate clearly, accurately and concisely.
(04)	Show the ability to confirm whether the recipient correctly understands important information.
(05)	Show the ability to listen actively and show you understand the information you receive.
(06)	Show the ability to ask relevant and effective questions.
(07)	Show the ability to adhere to standard radio-telephony phraseology.
(08)	Show the ability to accurately read, interpret, construct and respond to given documentation in English.
(09)	Show the ability to correctly interpret non-verbal communication.
(10)	Show the ability to use appropriate eye contact, body movement and gestures that are consistent with and support verbal messages.

We saw Brad communicate clearly and at appropriate times with each of the others, asking relevant questions and confirming understanding.

Satisfactory/Grade L2 (high)

Moira – Leadership and Teamwork

100 02 02 00	Leadership and teamwork
(01)	Show the ability to create an atmosphere of open communication that encourages participation.
(02)	Show the initiative and the ability to give directions when required.
(03)	Show the ability to admit mistakes and take responsibility.
(04)	Show the ability to anticipate and respond appropriately to others' needs.
(05)	Show the ability to carry out instructions when directed.
(06)	Show the ability to communicate relevant concerns and intentions.
(07)	Show the ability to give and receive feedback constructively.
(08)	Show empathy, respect and tolerance for others.
(09)	Show the ability to engage others in planning and to allocate activities fairly and appropriately according to others' abilities.
(10)	Show the ability to address and resolve conflicts and disagreement in a constructive manner.
(11)	Show the ability to project self-control.

We saw that Moira was able to follow instructions and treated the others with respect. She also showed tolerance and self-control.

Satisfactory/Grade L2

Arif – Leadership and Teamwork

100 02 02 00	Leadership and teamwork
(01)	Show the ability to create an atmosphere of open communication that encourages participation.
(02)	Show the initiative and the ability to give directions when required.
(03)	Show the ability to admit mistakes and take responsibility.
(04)	Show the ability to anticipate and respond appropriately to others' needs.
(05)	Show the ability to carry out instructions when directed.
(06)	Show the ability to communicate relevant concerns and intentions.
(07)	Show the ability to give and receive feedback constructively.
(08)	Show empathy, respect and tolerance for others.
(09)	Show the ability to engage others in planning and to allocate activities fairly and appropriately according to others' abilities.
(10)	Show the ability to address and resolve conflicts and disagreement in a constructive manner.
(11)	Show the ability to project self-control.

We saw Arif taking initiative and giving instructions to others and his opinions, however, he did not show empathy or encourage others to put forward their suggestions.

Unsatisfactory/Grade L1

Brad – Leadership and Teamwork

100 02 02 00	Leadership and teamwork
(01)	Show the ability to create an atmosphere of open communication that encourages participation.
(02)	Show the initiative and the ability to give directions when required.
(03)	Show the ability to admit mistakes and take responsibility.
(04)	Show the ability to anticipate and respond appropriately to others' needs.
(05)	Show the ability to carry out instructions when directed.
(06)	Show the ability to communicate relevant concerns and intentions.
(07)	Show the ability to give and receive feedback constructively.
(08)	Show empathy, respect and tolerance for others.
(09)	Show the ability to engage others in planning and to allocate activities fairly and appropriately according to others' abilities.
(10)	Show the ability to address and resolve conflicts and disagreement in a constructive manner.
(11)	Show the ability to project self-control.

We saw Brad following instructions, showing respect for the others and responding to Moira's need for assistance along with other behaviours.

Satisfactory/Grade L2 (high)

Section 3

Final Assessment

Moira - Communication

Did the student's communication have a positive effect on the outcome and the others?

Yes (If 'No' assign grade L1)

To decide which grade, how many OBs did Moira demonstrate and how often together with Moira's effect on how successful the exercise was?

Satisfactory/Grade L2 (*some* of the OBs *some* of the time)

Initially unsatisfactory/grade L1 but improved sufficiently in second half.

Moira - Leadership & Teamwork

Did the student's leadership & teamwork have a positive effect on the outcome and the others?

Yes (If 'No' assign grade L1)

To decide which grade, how many OBs did Moira demonstrate and how often together with Moira's effect on how successful the exercise was?

Satisfactory/Grade L2 (just)

Teamwork was good however, little evidence of leadership OBs. Improved in second half.

Arif - Communication

Did the student's communication have a positive effect on the outcome and the others?

No

Unsatisfactory/Grade L1

In second half fewer OBs observed and multiple times when Arif's communication had a negative effect on the others and potentially the outcome.

Arif - Leadership & Teamwork

Did the student's leadership & teamwork have a positive effect on the outcome and the others?

No

Unsatisfactory/Grade L1

A number of instances when Arif's LTW had a negative effect on the others and potentially the outcome.

Brad - Communication

Did the student's communication have a positive effect on the outcome and the others?

Yes (If 'No' assign grade L1)

To decide which grade, how many OBs did Brad demonstrate and how often together with Brad's effect on how successful the exercise was?

Satisfactory (good)/Grade L3 (*most* of OBs *most* of the time, good outcome)

Initially grade L2 but improved considerably in second half.

Brad - Leadership & Teamwork

Did the student's leadership & teamwork have a positive effect on the outcome and the others?

Yes (If 'No' assign grade L1)

To decide which grade, how many OBs did Brad demonstrate and how often, together with Brad's effect on how successful the exercise was?

Satisfactory (good) Grade L3 (high) (*most* of OBs *most* of the time, good effect on outcome)

Overall, a high grade L3. If LTW had been consistent at level shown in second half, would have been grade L4.

Application of Knowledge

How would you grade their application of knowledge?

Moira

- Good knowledge level consistently shown

satisfactory (good)/Grade L3

Arif

- Insufficient knowledge (safety critical)

unsatisfactory/Grade L1

Brad

- Good knowledge shown regularly

satisfactory (good)/Grade L3

Meet the actors!

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Meet the film crew!

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Debriefing

Written

Student Debrief - Written

- Each student should receive an individual written report/debrief of their performance for each task; this should include:
    - details of LOs that have been satisfied
    - evidence of how LOs have been satisfied where possible
    - evidence of LOs with neutral or negative effect
    - overall grade for each competency assessed
- Suggestions for further development
- Student comments

Assessment standards

If a student fails to reach the minimum satisfactory level in each competency:

- the student should receive further training as appropriate
- the student will be required to complete another summative assessment that covers the competencies where performance was previously assessed as unsatisfactory.

Thank you

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TKI Training

Comparing & Contrasting EASA EBT with KSA 100

Captain Andy Mitchell BEng, FRAeS, Chair ATPG

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KNO
0. Application of Knowledge

PRO
1. Application of Procedures and Compliance with Regulations

COM
2. Communication

FPA
3. Flight Path Management (Automation)

FPM
4. Flight Path Management (Manual)

LTW
5. Leadership & Teamwork

PSD
6. Problem solving & Decision Making

SAW
7. Situation awareness and management of information

WLM
8. Workload Management

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Pilot Competencies[1]

KNO | PRO | COM | FPA | FPM | LTW | PSD | SAW | WLM

Instructor Competencies

MLE | INS | INT | AEV

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Pilot Competencies[1]
KNO | PRO | COM | FPA | FPM | LTW | PSD | SAW | WLM

IEC 1. Management of the learning environment

IEC 2. Instruction

IEC 3. Interaction with the trainee

IEC 4. Assessment & Evaluation

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CBTA matrix for EBT instructor

EBT instructor competencies				
IEC1	IEC2	IEC3	IEC4	IEC5
Pilot competencies	Management of the learning environment	Instruction	Interaction with the trainees	Assessment and evaluation
TA	TA	TA-SE	TA-SE	TA-SE

Note: TA: competencies trained and assessed
SE: competencies requiring special emphasis during training

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IEC 2 Management of the learning environment	Lecturer	Present TKI	CBTA TKI
iOB 2.1 Applies TEM in the context of instruction/evaluation			
iOB 2.2 Briefs on safety procedures for situations that are likely to develop during instruction/evaluation			
iOB 2.3 Intervenes appropriately, at the correct time and level (e.g. progresses from verbal assistance to taking over control)			
iOB 2.4 Resumes instruction/evaluation as practicable after any intervention			
iOB 2.5 Plans and prepares training media, equipment and resources			
iOB 2.6 Briefs on training devices or aircraft limitations that may influence training, when applicable			
iOB 2.7 Creates and manages conditions (e.g. airspace, ATC, weather, time, etc.) to be suitable for the training objectives			
iOB 2.8 Adapts to changes in the environment whilst minimising training disruptions			
iOB 2.9 Manages time, training media and equipment to ensure that training objectives are met			

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IEC 2 Management of the learning environment	Lecturer	Present TKI	CBTA TKI
iOB 2.1 Applies TEM in the context of instruction/evaluation	No		
iOB 2.2 Briefs on safety procedures for situations that are likely to develop during instruction/evaluation	Yes		
iOB 2.3 Intervenes appropriately, at the correct time and level (e.g. progresses from verbal assistance to taking over control)	No		
iOB 2.4 Resumes instruction/evaluation as practicable after any intervention	No		
iOB 2.5 Plans and prepares training media, equipment and resources	Yes		
iOB 2.6 Briefs on training devices or aircraft limitations that may influence training, when applicable	No		
iOB 2.7 Creates and manages conditions (e.g. airspace, ATC, weather, time, etc.) to be suitable for the training objectives	No		
iOB 2.8 Adapts to changes in the environment whilst minimising training disruptions	No		
iOB 2.9 Manages time, training media and equipment to ensure that training objectives are met	Yes*		

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IEC 2 Management of the learning environment	Lecturer	Present TKI	CBTA TKI
iOB 2.1 Applies TEM in the context of instruction/evaluation	No	No	
iOB 2.2 Briefs on safety procedures for situations that are likely to develop during instruction/evaluation	Yes	Yes	
iOB 2.3 Intervenes appropriately, at the correct time and level (e.g. progresses from verbal assistance to taking over control)	No	Yes*	
iOB 2.4 Resumes instruction/evaluation as practicable after any intervention	No	Yes	
iOB 2.5 Plans and prepares training media, equipment and resources	Yes	Yes	
iOB 2.6 Briefs on training devices or aircraft limitations that may influence training, when applicable	No	Yes*	
iOB 2.7 Creates and manages conditions (e.g. airspace, ATC, weather, time, etc.) to be suitable for the training objectives	No	No	
iOB 2.8 Adapts to changes in the environment whilst minimising training disruptions	No	No	
iOB 2.9 Manages time, training media and equipment to ensure that training objectives are met	Yes*	Yes*	

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IEC 2 Management of the learning environment	Lecturer	Present TKI	CBTA TKI
iOB 2.1 Applies TEM in the context of instruction/evaluation	No	No	Yes
iOB 2.2 Briefs on safety procedures for situations that are likely to develop during instruction/evaluation	Yes	Yes	Yes
iOB 2.3 Intervenes appropriately, at the correct time and level (e.g. progresses from verbal assistance to taking over control)	No	Yes*	Yes
iOB 2.4 Resumes instruction/evaluation as practicable after any intervention	No	Yes	Yes
iOB 2.5 Plans and prepares training media, equipment and resources	Yes	Yes	Yes
iOB 2.6 Briefs on training devices or aircraft limitations that may influence training, when applicable	No	Yes*	Yes
iOB 2.7 Creates and manages conditions (e.g. airspace, ATC, weather, time, etc.) to be suitable for the training objectives	No	No	Yes
iOB 2.8 Adapts to changes in the environment whilst minimising training disruptions	No	No	Yes
iOB 2.9 Manages time, training media and equipment to ensure that training objectives are met	Yes*	Yes*	Yes

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IEC 2 Management of the learning environment	Lecturer	Present TKI	CBTA TKI
iOB 2.1 Applies TEM in the context of instruction/evaluation	No	No	Yes
iOB 2.2 Briefs on safety procedures for situations that are likely to develop during instruction/evaluation	Yes	Yes	Yes
iOB 2.3 Intervenes appropriately, at the correct time and level (e.g. progresses from verbal assistance to taking over control)	No	Yes*	Yes
iOB 2.4 Resumes instruction/evaluation as practicable after any intervention	No	Yes	Yes
iOB 2.5 Plans and prepares training media, equipment and resources	Yes	Yes	Yes
iOB 2.6 Briefs on training devices or aircraft limitations that may influence training, when applicable	No	Yes*	Yes
iOB 2.7 Creates and manages conditions (e.g. airspace, ATC, weather, time, etc.) to be suitable for the training objectives	No	No	Yes
iOB 2.8 Adapts to changes in the environment whilst minimising training disruptions	No	No	Yes
iOB 2.9 Manages time, training media and equipment to ensure that training objectives are met	Yes*	Yes*	Yes

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IEC 3 Instruction	Lecturer	Present TKI	CBTA TKI
iOB 3.1 References approved sources (operations, technical and training manuals, standards and regulations)	Yes		
iOB 3.2 States clearly the objectives and clarifies roles for the training	Yes		
iOB 3.3 Follows the approved training programme	Yes		
iOB 3.4 Applies instructional methods as appropriate (e.g. explanation, demonstration, learning by discovery, facilitation, in-seat instruction)	No		
iOB 3.5 Sustains operational relevance and realism	No		
iOB 3.6 Adapts the amount of instructor inputs to ensure that the training objectives are met	No		
iOB 3.7 Adapts to situations that might disrupt a planned sequence of events	No		
iOB 3.8 Continuously assesses the trainee's competencies (e.g. by including the root cause(s) according to the competency framework)	No		
iOB 3.9 Encourages the trainee to self-assess	No		
iOB 3.10 Allows the trainee to self-correct in a timely manner	No		
iOB 3.11 Applies trainee-centred feedback techniques (e.g. facilitation, etc.)	No		
iOB 3.12 Provides positive reinforcement	No		

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IEC 3 Instruction	Lecturer	Present TKI	CBTA TKI
iOB 3.1 References approved sources (operations, technical and training manuals, standards and regulations)	Yes	Yes	
iOB 3.2 States clearly the objectives and clarifies roles for the training	Yes	Yes	
iOB 3.3 Follows the approved training programme	Yes	Yes	
iOB 3.4 Applies instructional methods as appropriate (e.g. explanation, demonstration, learning by discovery, facilitation, in-seat instruction)	No	Yes*	
iOB 3.5 Sustains operational relevance and realism	No	No	
iOB 3.6 Adapts the amount of instructor inputs to ensure that the training objectives are met	No	Yes	
iOB 3.7 Adapts to situations that might disrupt a planned sequence of events	No	Yes	
iOB 3.8 Continuously assesses the trainee's competencies (e.g. by including the root cause(s) according to the competency framework)	No	No	
iOB 3.9 Encourages the trainee to self-assess	No	No	
iOB 3.10 Allows the trainee to self-correct in a timely manner	No	No	
iOB 3.11 Applies trainee-centred feedback techniques (e.g. facilitation, etc.)	No	No	
iOB 3.12 Provides positive reinforcement	No	Yes	

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IEC 3 Instruction	Lecturer	Present TKI	CBTA TKI
iOB 3.1 References approved sources (operations, technical and training manuals, standards and regulations)	Yes	Yes	Yes
iOB 3.2 States clearly the objectives and clarifies roles for the training	Yes	Yes	Yes
iOB 3.3 Follows the approved training programme	Yes	Yes	Yes
iOB 3.4 Applies instructional methods as appropriate (e.g. explanation, demonstration, learning by discovery, facilitation, in-seat instruction)	No	Yes*	Yes
iOB 3.5 Sustains operational relevance and realism	No	No	Yes
iOB 3.6 Adapts the amount of instructor inputs to ensure that the training objectives are met	No	Yes	Yes
iOB 3.7 Adapts to situations that might disrupt a planned sequence of events	No	Yes	Yes
iOB 3.8 Continuously assesses the trainee's competencies (e.g. by including the root cause(s) according to the competency framework)	No	No	Yes
iOB 3.9 Encourages the trainee to self-assess	No	No	Yes
iOB 3.10 Allows the trainee to self-correct in a timely manner	No	Yes	Yes
iOB 3.11 Applies trainee-centred feedback techniques (e.g. facilitation, etc.)	No	No	Yes
iOB 3.12 Provides positive reinforcement	No	Yes	Yes

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ATPG

IEC 3 Instruction	Lecturer	Present TKI	CBTA TKI
iOB 3.1 References approved sources (operations, technical and training manuals, standards and regulations)	Yes	Yes	Yes
iOB 3.2 States clearly the objectives and clarifies roles for the training	Yes	Yes	Yes
iOB 3.3 Follows the approved training programme	Yes	Yes	Yes
iOB 3.4 Applies instructional methods as appropriate (e.g. explanation, demonstration, learning by discovery, facilitation, in-seat instruction)	No	Yes*	Yes
iOB 3.5 Sustains operational relevance and realism	No	No	Yes
iOB 3.6 Adapts the amount of instructor inputs to ensure that the training objectives are met	No	Yes	Yes
iOB 3.7 Adapts to situations that might disrupt a planned sequence of events	No	Yes	Yes
iOB 3.8 Continuously assesses the trainee's competencies (e.g. by including the root cause(s) according to the competency framework)	No	No	Yes
iOB 3.9 Encourages the trainee to self-assess	No	No	Yes
iOB 3.10 Allows the trainee to self-correct in a timely manner	No	Yes	Yes
iOB 3.11 Applies trainee-centred feedback techniques (e.g. facilitation, etc.)	No	No	Yes
iOB 3.12 Provides positive reinforcement	No	Yes	Yes

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IEC 4 Inteaction with the trainees	Lecturer	Present TKI	CBTA TKI
iOB 4.1 Shows respect for the trainee (e.g. for culture, language and experience)	No	Yes	Yes
iOB 4.2 Shows patience and empathy (e.g. by actively listening, reading non-verbal messages and encouraging dialogue	No	Yes	Yes
iOB 4.3 Manages trainees' barriers to learning	No	Yes	Yes
iOB 4.4 Encourages engagement and mutual support between the trainees	No	Yes	Yes
iOB 4.5 Coaches the trainees	No	Yes	Yes
iOB 4.6 Supports the goal and training policies of the operator/ATO and authority	Yes	Yes	Yes
iOB 4.7 Shows integrity (e.g. honesty and professional principles)	Yes	Yes	Yes
iOB 4.8 Demonstrates acceptable personal conduct, acceptable social practices, content expertise, a model for professional & interpersonal behaviour	Yes	Yes	Yes
iOB 4.9 Actively seeks and accepts feedback to improve own performance	No	Yes	Yes

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IEC 5 Assessment and evaluation	Lecturer	Present TKI	CBTA TKI
iOB 5.1 Complies with operator/ATO and authority requirements	Yes	Yes	Yes
iOB 5.2 Ensures that the trainee understands the assessment process	Yes*	Yes*	Yes
iOB 5.3 Applies the competency standards and conditions	No	No	Yes
iOB 5.4 Assesses trainee's competency (-ies)	No	No	Yes
iOB 5.5 Performs grading	No	No	Yes
iOB 5.6 Provides recommendations based on the outcome of the assessment	No	Yes*	Yes
iOB 5.7 Makes decisions based on the outcome of assessments	No	No	Yes
iOB 5.8 Provides clear feedback to the trainee	No	Yes	Yes
iOB 5.9 Reports strengths and weaknesses of the training system	No	Yes	Yes
iOB 5.10 Suggests improvements for the training system	No	Yes	Yes
iOB 5.11 Produces reports using appropriate forms and media	Yes	Yes	Yes

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IEC 5 Assessment and evaluation	Lecturer	Present TKI	CBTA TKI
iOB 5.1 Complies with operator/ATO and authority requirements	Yes	Yes	Yes
iOB 5.2 Ensures that the trainee understands the assessment process	Yes*	Yes*	Yes
iOB 5.3 Applies the competency standards and conditions	No	No	Yes
iOB 5.4 Assesses trainee's competency (-ies)	No	No	Yes
iOB 5.5 Performs grading	No	No	Yes
iOB 5.6 Provides recommendations based on the outcome of the assessment	No	Yes*	Yes
iOB 5.7 Makes decisions based on the outcome of assessments	No	No	Yes
iOB 5.8 Provides clear feedback to the trainee	No	Yes	Yes
iOB 5.9 Reports strengths and weaknesses of the training system	No	Yes	Yes
iOB 5.10 Suggests improvements for the training system	No	Yes	Yes
iOB 5.11 Produces reports using appropriate forms and media	Yes	Yes	Yes

GM3 ORO.FC.146(c)

ATPG

Potential CBTA matrix for CBTA Theoretical Knowledge Instructor

CBTA Theoretical Knowledge Instructor competencies				
IEC1	IEC2	IEC3	IEC4	IEC5
Pilot competencies	Management of the learning environment	Instruction	Interaction with the trainees	Assessment and evaluation
TA	TA-SE	TA-SE	TA	TA-SE

Note: TA: competencies trained and assessed
SE: competencies requiring special emphasis during training

ATPG

Thank you,
let's keep this conversation going

info@atpg.eu

Continued thanks to our organisations for their support:

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And special thanks for their trust in us:

EASA European Aviation Safety Agency, HalldaleGroup

ATPG

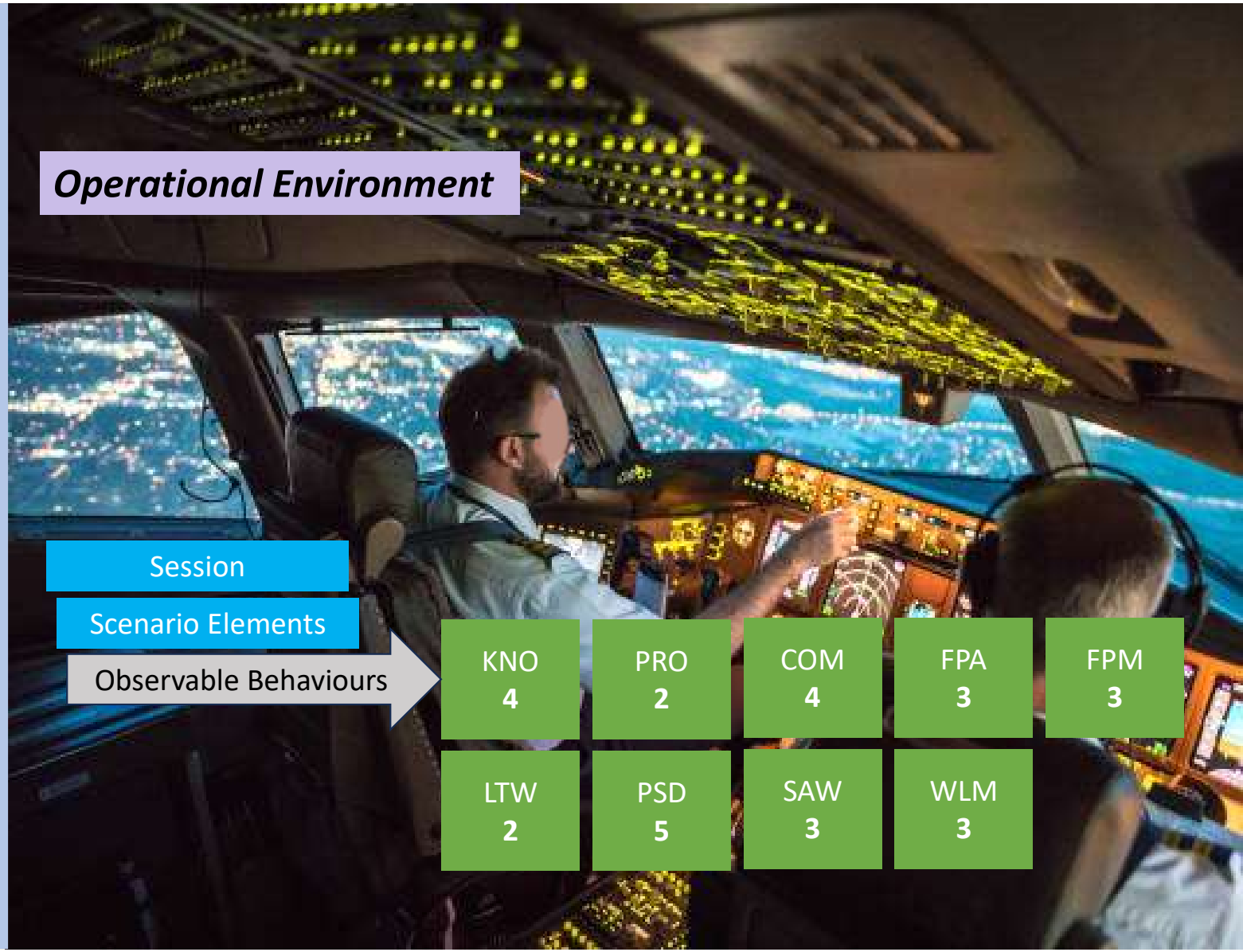
Feedback & Data in KSA 100

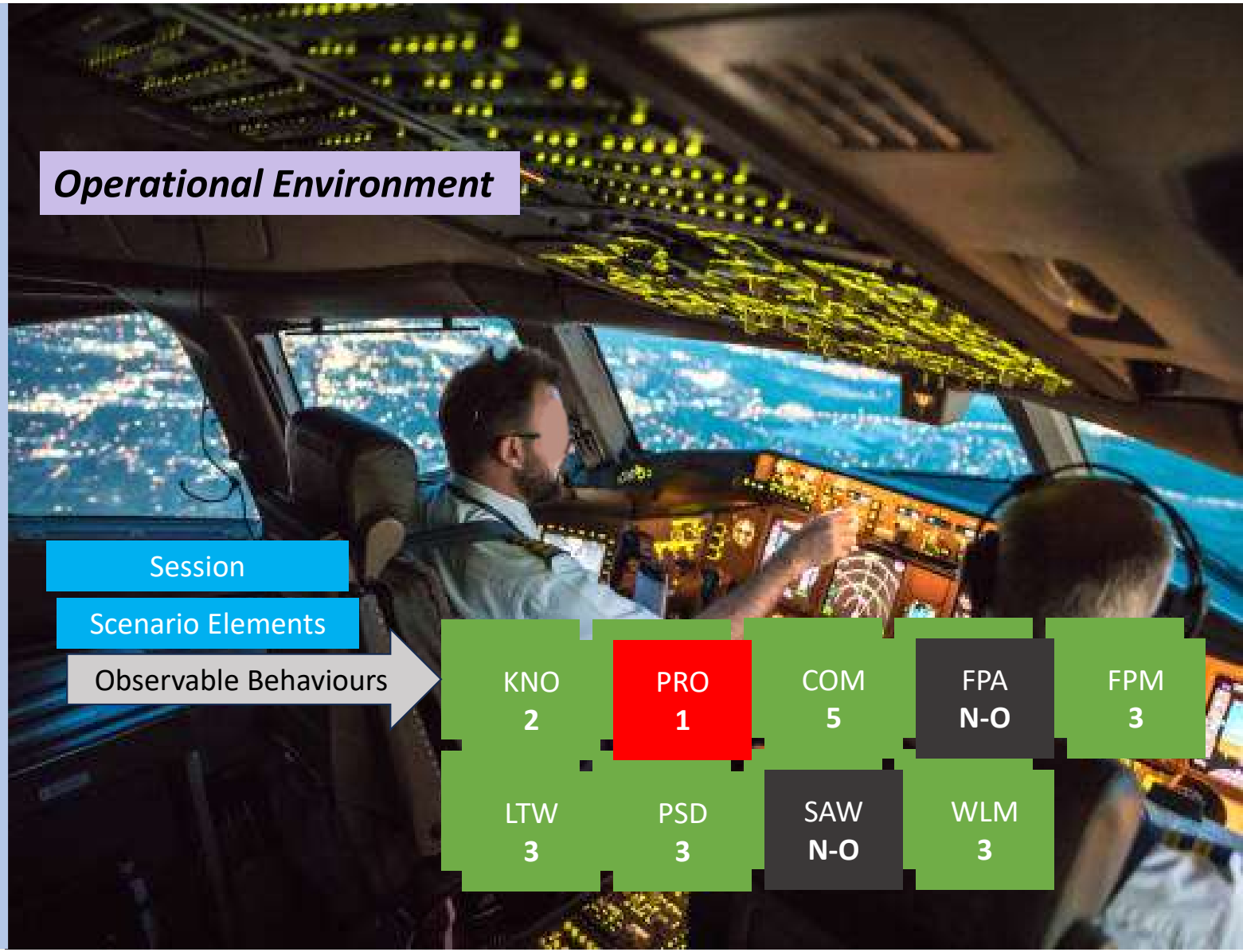
Captain Andy Mitchell BEng, FRAeS, Chair ATPG

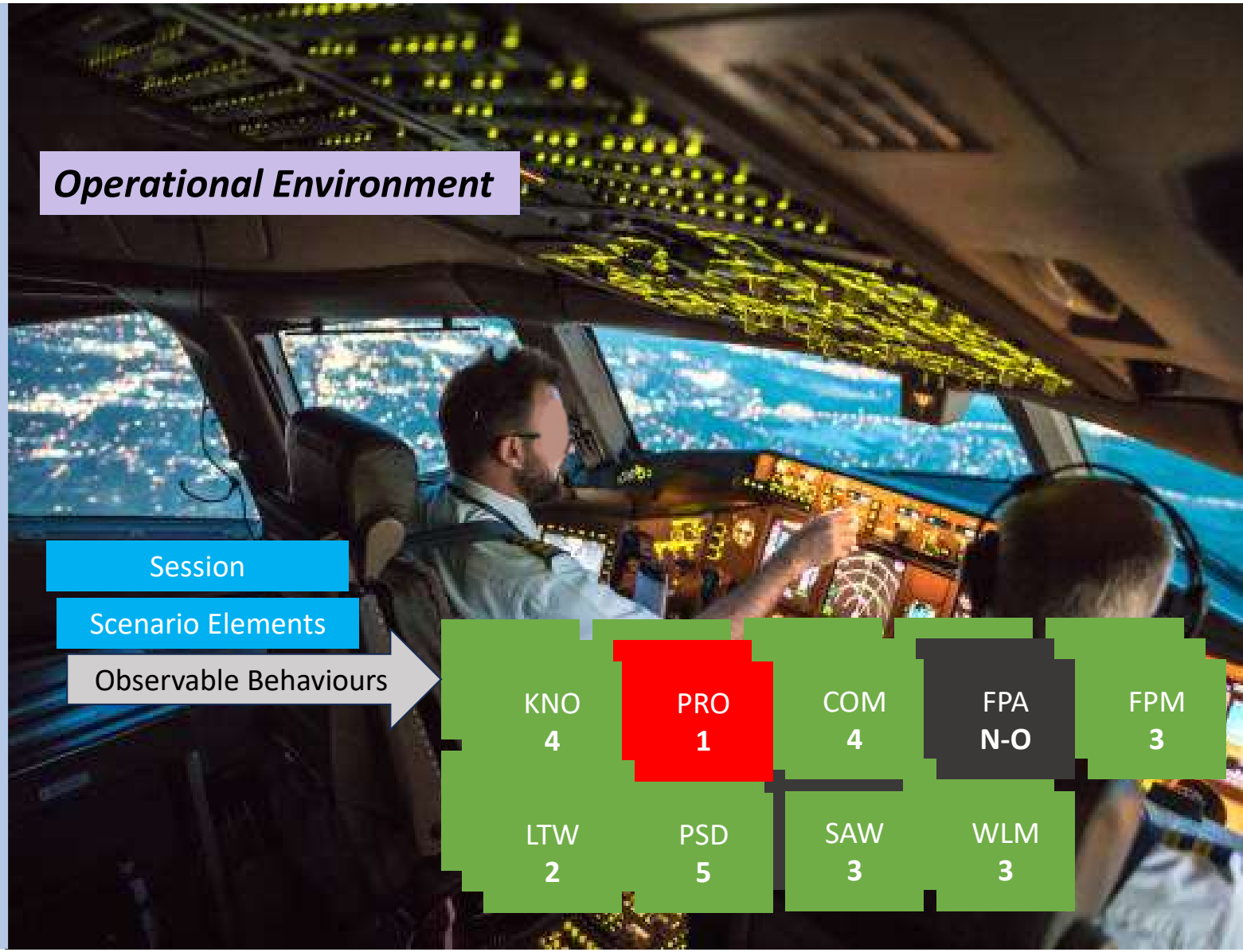
…provide meaningful and standard data to enable identification of individual, crew, class, instructor and ATO trends, which can be analysed in order to provide feedback for further improvement or development


Non-operational environment

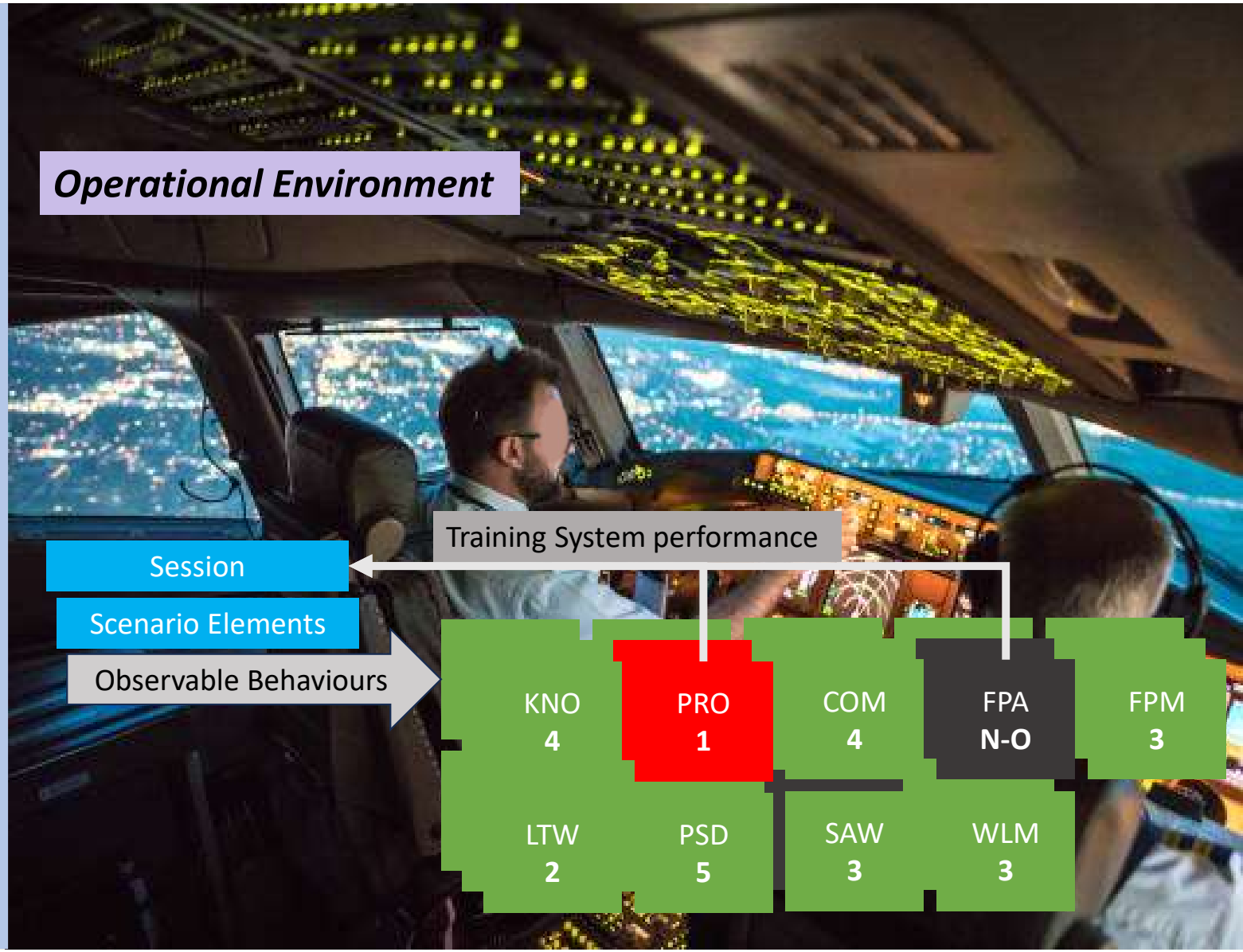

Operational Environment

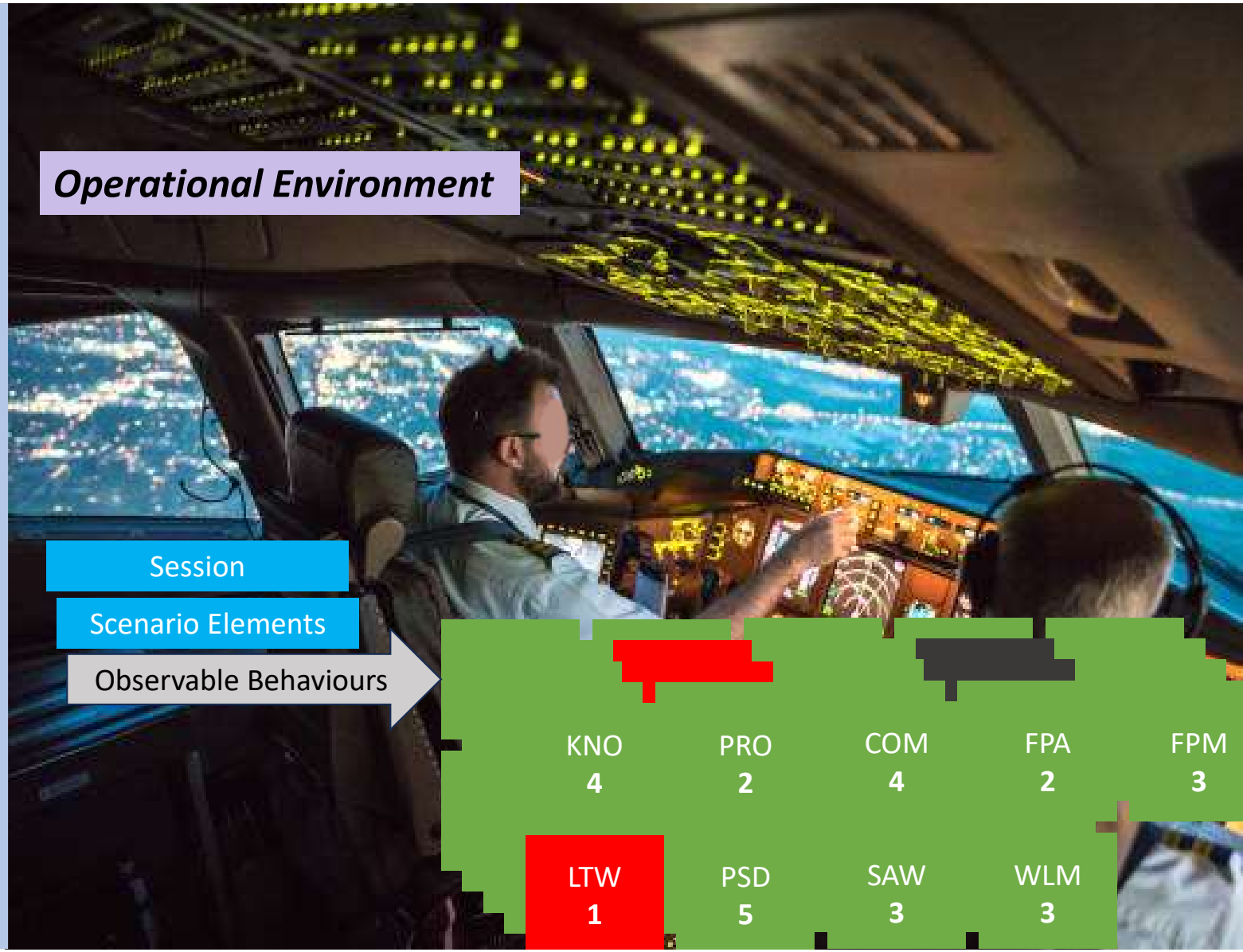

Operational Environment
Session
Scenario Elements
Observable Behaviours
KNO 4
PRO 2
COM 4
FPA 3
FPM 3
LTW 2
PSD 5
SAW 3
WLM 3


Operational Environment
Session
Scenario Elements
Observable Behaviours
KNO
2
PRO
1
COM
5
FPA
N-O
FPM
3
LTW
3
PSD
3
SAW
N-O
WLM
3

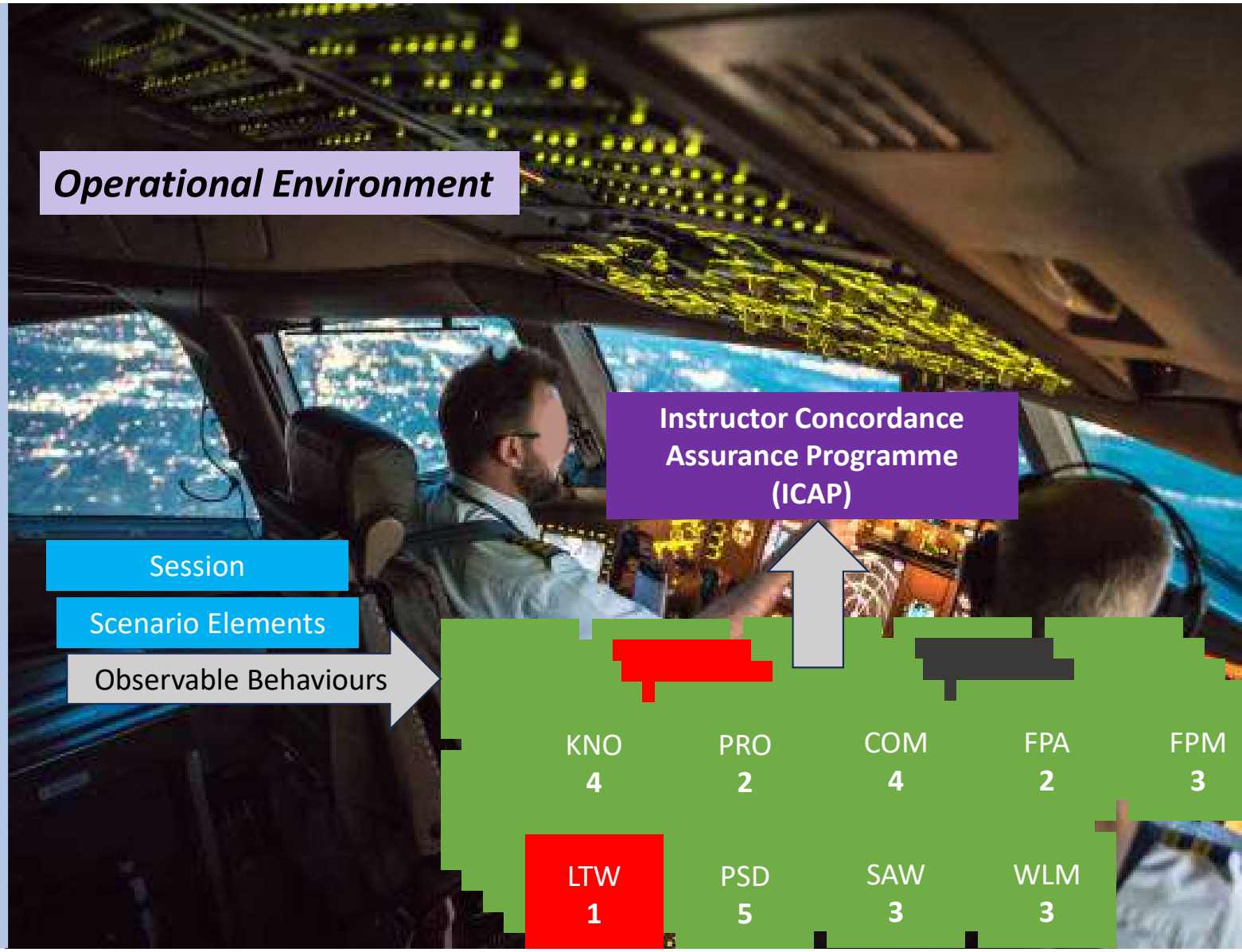

Operational Environment
Session
Scenario Elements
Observable Behaviours
KNO
4
PRO
1
COM
4
FPA
N-O
FPM
3
LTW
2
PSD
5
SAW
3
WLM
3

AMC1 ORO.FC.231(c)

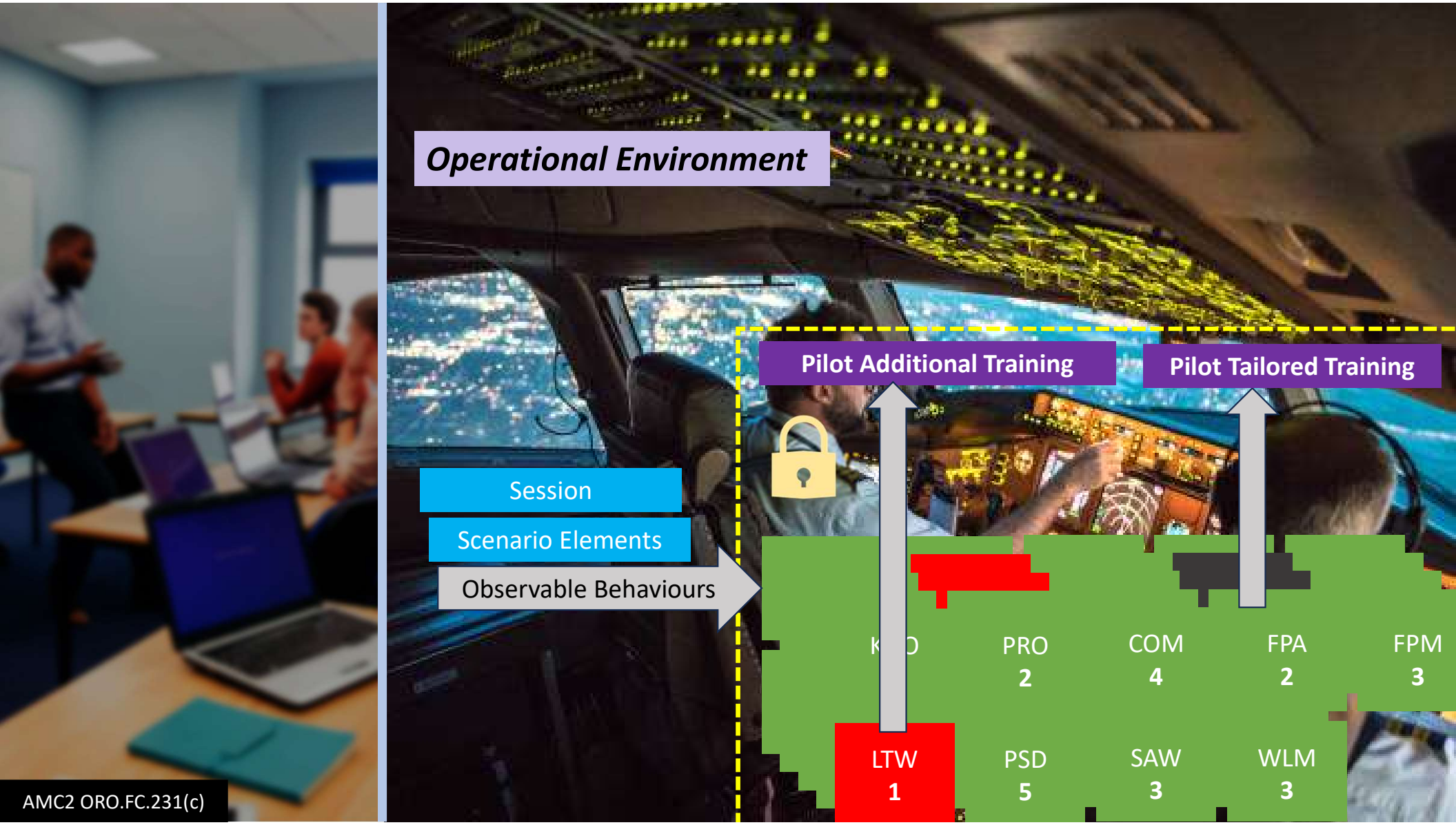


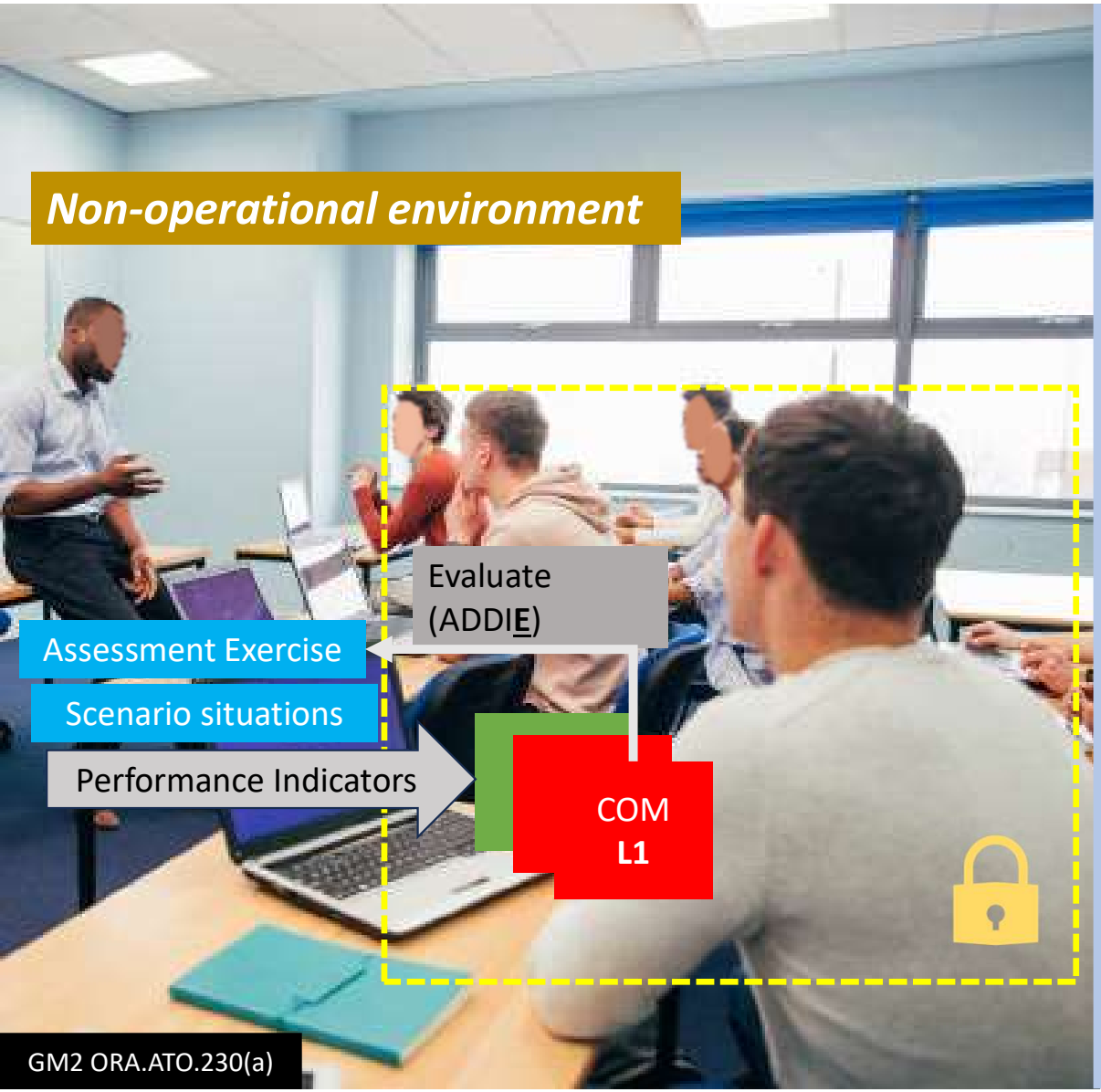

Operational Environment
Session
Scenario Elements
Observable Behaviours
KNO
4
PRO
2
COM
4
FPA
2
FPM
3
LTW
1
PSD
5
SAW
3
WLM
3

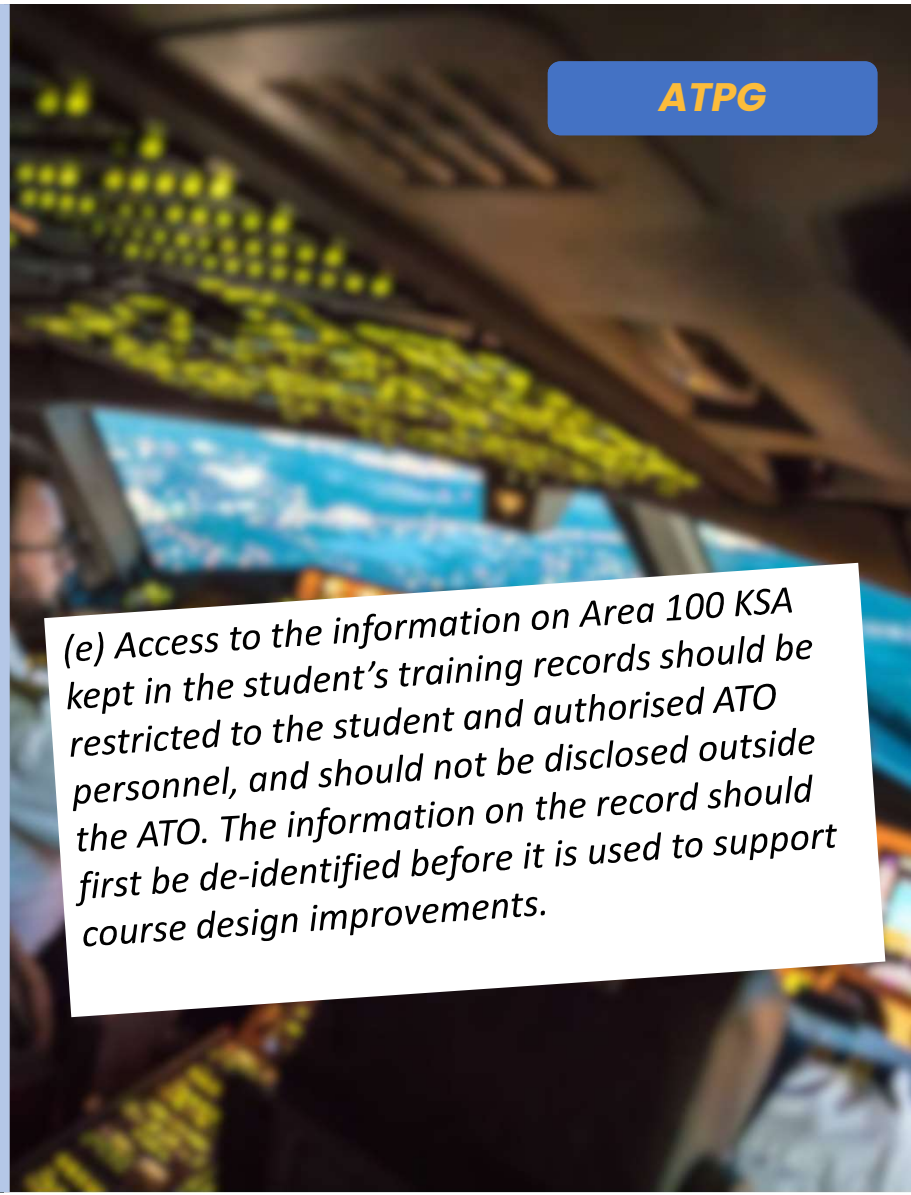
AMC1 ORO.FC.231(a)(4)

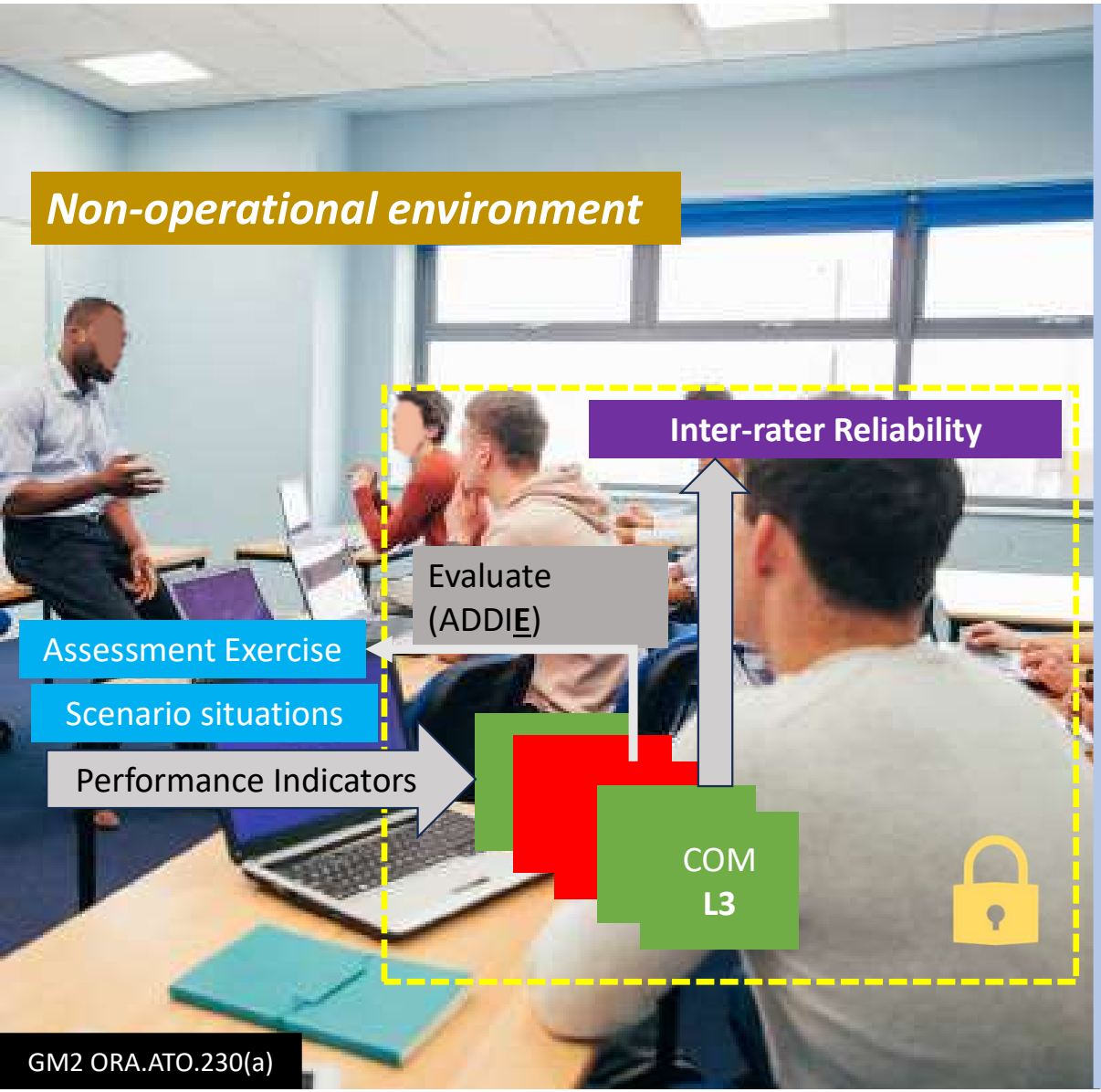


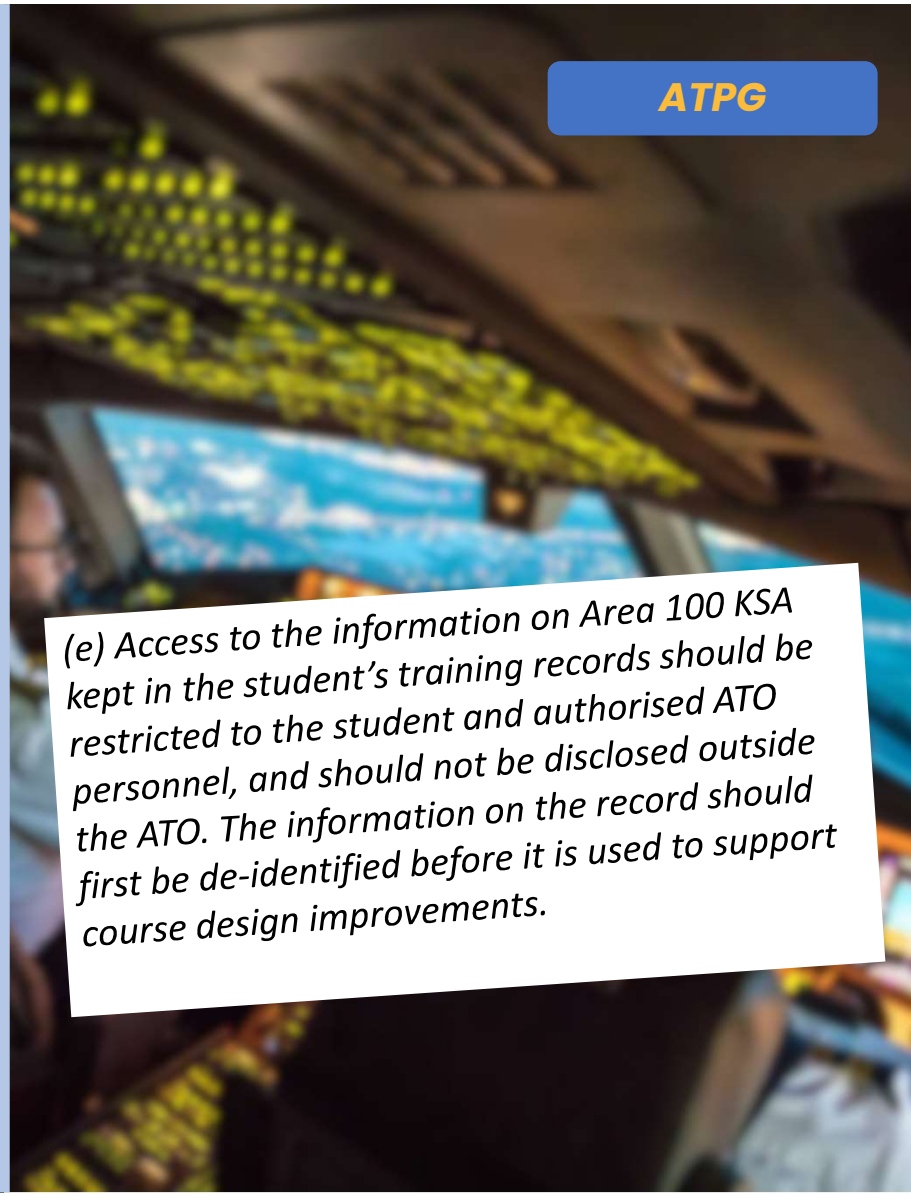
GM3 ORO.FC.231(a)(a)(3)


Operational Environment
Pilot Additional Training
Pilot Tailored Training
Session
Scenario Elements
Observable Behaviours
PRO
2
COM
4
FPA
2
FPM
3
LTW
1
PSD
5
SAW
3
WLM
3
AMC2 ORO.FC.231(c)


Non-operational environment
Evaluate
(ADDIE)
Assessment Exercise
Scenario situations
Performance Indicators
COM
L1
GM2 ORA.ATO.230(a)


ATPG
(e) Access to the information on Area 100 KSA kept in the student's training records should be restricted to the student and authorised ATO personnel, and should not be disclosed outside the ATO. The information on the record should first be de-identified before it is used to support course design improvements.


Non-operational environment
Inter-rater Reliability
Evaluate
(ADDIE)
Assessment Exercise
Scenario situations
Performance Indicators
COM
L3
GM2 ORA.ATO.230(a)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KSA 100 – potential next steps in context of CBTA alignment

ATPG

- Change wording from **Performance Indicators** to **Observable Behaviours** and align on EASA Pilot Competency Framework [GM2 ORA.ATO.230(a)]
- As per EBT, change wording from **Inter-rater Reliability** to **Instructor Concordance Assurance** [AMC2 ORA.ATO.230(a)]
- Consider AMC1 ORO.FC.231(a)(4) EBT ICAP as inspiration for best practices in Instructor Concordance for KSA 100
- Change **Exercise** to **Session** [GM2 ORA.ATO.230(a)]
- Change **Scenario Situations** to **Scenario Elements** [GM2 ORA.ATO.230(a)]
- Remove the one instance of **Pass/Fail** and replace with **Satisfactory/Unsatisfactory** [AMC3 ORA.ATO.230(a)(d)(4)]
- Align on **'Path to competence'** at ATO vs. '**Competence**' in AOC
- Complete TA-SE study and create guidance material on CBTA TKI Training syllabus
- Align **How Many, How Often & How Well** with **EBT Venn Model / TEM / ORCA** [GM2 ORA.ATO.230(a)(c)]

CBTA Alignment

ATPG

Non-operational environment

Operational Environment

Path to competence

Competence

CBTA

MPL P1 | MPL P2 | MPL P3 | MPL P4

Ground School — CBTA

SEP/MEP Flight Training — CBTA

APS MCC — CBTA

Type Rating — CBTA+E

Recurrent — CBTA+E

ATPG

Thank you,
let's keep the conversation going

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And special thanks for their trust in us:

EASA European Aviation Safety Agency, HalldaleGroup

ATPG

*Driving industry **conversation** & **innovation** to enhance aircrew training quality, diversity & efficiency while increasing safety & environmental sustainability*

Luis Martins, ATPG Secretary

Area 100 KSA Oversight

Auditing an ATO's Area 100 KSA Programme

The Training Manual

Auditing the Documentation

Training Manual:

As a minimum, an ATO should ensure the following tests:

- One (1) formative assessment covering *most* of the KSA 100 02 and 03 LOs;
- Two (2) summative assessments covering *all* of the KSA 100 02 and 03 LOs *between the two*;
- One (1) mental maths test with *at least* 22 questions (2 per KSA 100 04 LO).

Ref.: AMC1 ORA.ATO.230(a), AMC3 ORA.ATO.230(a) (d)

Training Manual:

Formative and Summative Assessments:

The ATO needs to have in the Training Manual:

- When, what is included and how it will be graded;
- Definition of what a satisfactory standard is;
- Student's Area 100 KSA report template;
- Debrief method;
- Recovery training necessary in case of an unsatisfactory result in a summative assessment;
- An example of each formative and summative assessment.

Ref.: AMC1 ORA.ATO.230(a), AMC3 ORA.ATO.230(a) (d)

Training Manual:

Mental Maths Assessment:

Regarding the Mental Maths Test, the Training Manual must include:

- Satisfactory Standard: 75% min;
- Format:
  - oral or written;
  - answered using mental maths and short-term memory;
  - scenario based (if possible);
- An example of a test.

Ref.: AMC1 ORA.ATO.230(a), AMC3 ORA.ATO.230(a) (d)

The Instructors

Initial Training and Inter-Rater Reliability

Instructors' Qualification:

Initial Training:

- Instructors that deliver KSA instruction have received appropriate training (…);
- Instructors responsible for assessing Area 100 KSA have received appropriate training (…).

Inter-Rater Reliability (Concordance Assurance):

- Annual recurrent training.

Ref.: AMC2 ORA.ATO.230(a).

The Training Philosophy

Going Beyond Box Ticking

Why did EASA introduce Area 100 KSA?

Explanatory Note to Decision 2018-001-R:

- *"advancing the training philosophy"*;
- *"[providing] all the necessary knowledge and competencies to prepare pilots for performing state-of-the-art flight operations";*
- *"improving teaching methodologies and accommodating evolving learning needs"*
- *"facilitate the development of [a student's] core competencies."*

What it is not

Area 100 KSA is not:

An MCC before the MCC.

Another box-ticking, self-contained,
set of examination events.

What it is

Area 100 KSA is intended to:

- Enable a student to start the next phase of training better prepared.
- Be aimed at the development of the student rather than at box-ticking examination events.
- Be cross-subject and seamlessly integrated into and throughout the entire training syllabus.
- Facilitate the development of the student's core competencies.

Be an assessment of a student's path to competency.

Ask questions such as:

- *"Can you show me a report from a student that was unsatisfactory in an assessment and improved to satisfactory as a result of your Area 100 KSA training?*
- *"What positive and negative trends have you identified in your students during your KSA training?"*
- *"Are you observing everything you planned to observe in your assessments?"*
- *"How has your course evolved since the implementation of Area 100 KSA?"*

ATPG

Thank you,
let's keep the conversation going

info@atpg.eu

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MINISTÈRE
CHARGÉ
DES TRANSPORTS

Liberté
Égalité
Fraternité

dgac direction générale de l'Aviation civile
DSAC

AREA 100 KSA APPROVAL

DGAC FRANCE

MINISTÈRE CHARGÉ DES TRANSPORTS

AGENDA

- **Preparation Actions**
  - DGAC
  - ATO
- **Pre-approval Actions**
- **Approval**
- **Post approval Actions**

Preparation
Identification of actions from DGAC.

Update the software for taking theoretical exams

Write an Area 100 KSA guide for ATOs: https://www.ecologie.gouv.fr/sites/default/files/Guide_100_KSA_ATO.pdf

Promote a compliance matrix for Area 100 KSA

Proposal for a standardised certificate of success

Manuals update approval

New training programme including Area 100 KSA approval

Preparation
Identification of Actions for ATOs

Understand the CBTA philosophy and integrate this into theoretical courses

Conceive and define 100 KSA assessments

Ensure that all items are properly assessed using a compliance matrix

Train instructors

Train assessors (assessing instructors)

Create a procedure to ensure that candidates have passed Area 100 KSA before registering for the last theoretical exam

Modify manuals and training programmes

Implement Area 100 KSA assessments

Pre-Approval
Support to ATOs updating their courses

Presentation of the KSA 100 Guide at the annual DGAC conference with ATOs

Identification of a DGAC Point of contact to answer ATO questions

Regular exchange with the ATO

ATO support on request

Promotion of the ADDIE method for course development

Approval

Approval is based on the compliance matrix which must demonstrate what was expected in the guide:

- Instructional Systems Design

The creation of the course must be based on an ISD system, which must be documented in the ATO manuals. The course must evolve taking into account feedback.

- Assessments:

The presence of the following assessments and tests must be documented :

- One (at least) formative assessment covering most KSA 100 02 & 03 LOs
- Two (at least) summative assessments covering all KSA 100 02 & 03 LOs
- One (at least) mental maths test with at least 22 questions (2 for each KSA 100 04 LO)

Approval

- ***Instructor and assessor training***

ATO must demonstrate :

- Instructors providing 100 KSA instruction have received appropriate and specific training. This training includes two parts: a generic part concerning pilots' competencies, CBTA, Observable Behaviours (OBs), … and a second part specific to the ATO depending on the scenarios implemented.

This training is a key factor for the DGAC in the approval process

- Assessors have also received appropriate and specific training.

- Annual recurrent training is planned focused on the standardisation of instructors and assessors in order to have harmonised rating.

Approval

- Assessment method

ATOs must have developed an assessment method and trained its assessors to use it.

Competency is assessed through observable behaviours (OBs). Some OBs associated with a competency might be observable but not measurable. The ATO, when developing these assessment exercises, must define which OBs the assessor is expected to observe. Some examples have been suggested in the guide.

- Trainee progress booklet.

Trainee progress booklet must be updated to include Area 100 KSA; a certificate of success should be included and archived.

Post approval :
in situ check of the 100 KSA training course

Audit or training control have been carried out in the ATO specifically on Area 100 KSA

- Trainees interviews
- Instructors interviews
- Check Area 100 KSA assessment systems
- Evaluate the pedagogical performance and effectiveness of the ATO’s implementation of Area 100 KSA
- Evaluate the change in teaching methods compared to the « old » teaching methods

MINISTÈRE CHARGÉ DES TRANSPORTS

Performance in ECQB-based TK exams 01/08/2021 – 31/07/2022

Exams based on the (old) syllabus without KSA 100 vs. the 2018/2020 syllabus

Comparing the performance of candidates on courses WITHOUT KSA 100 vs. candidates who completed KSA 100

Exams using (old) syllabus without KSA 100	Exams using (new) syllabus with KSA 100
ATPL(A) & CPL(H): average score across all subjects is about the same for the old and new syllabi-based exams	
Performance of the subjects, considering all licences:	
- Lower pass rate in many subjects	- Significantly higher pass rate in some subjects, e.g. 010, 021, 022, 031, 070, 081
- Pass rates in 091 & 092 were the highest (over 90%)	- Pass rate in 090 was the highest (over 90%)
- Same / similar pass rates in subjects 032, 033, 040 for the old and new syllabi exams	

Performance in ECQB-based TK exams 01/08/2021 – 31/07/2022

Exams based on the (old) syllabus without KSA 100 vs. the 2018/2020 syllabus

Comparing the performance of candidates on courses WITHOUT KSA 100 vs. candidates who completed KSA 100

Exams using (old) syllabus without KSA 100	Exams using (new) syllabus with KSA 100
Average score across all subjects was **about the same** for the old and new syllabi-based exams - ATPL(A), CPL(H)	
Average score across all subjects was better for the old syllabus-based exams - ATPL(H)/IR - IR	Average score across all subjects was better for the new syllabus-based exams - ATPL(H)/VFR - CPL(A) - CB-IR(A)

MINISTÈRE
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DSAC

Questions?