

Competency Based Training in Aviation Maintenance Basic Training

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Who am I?



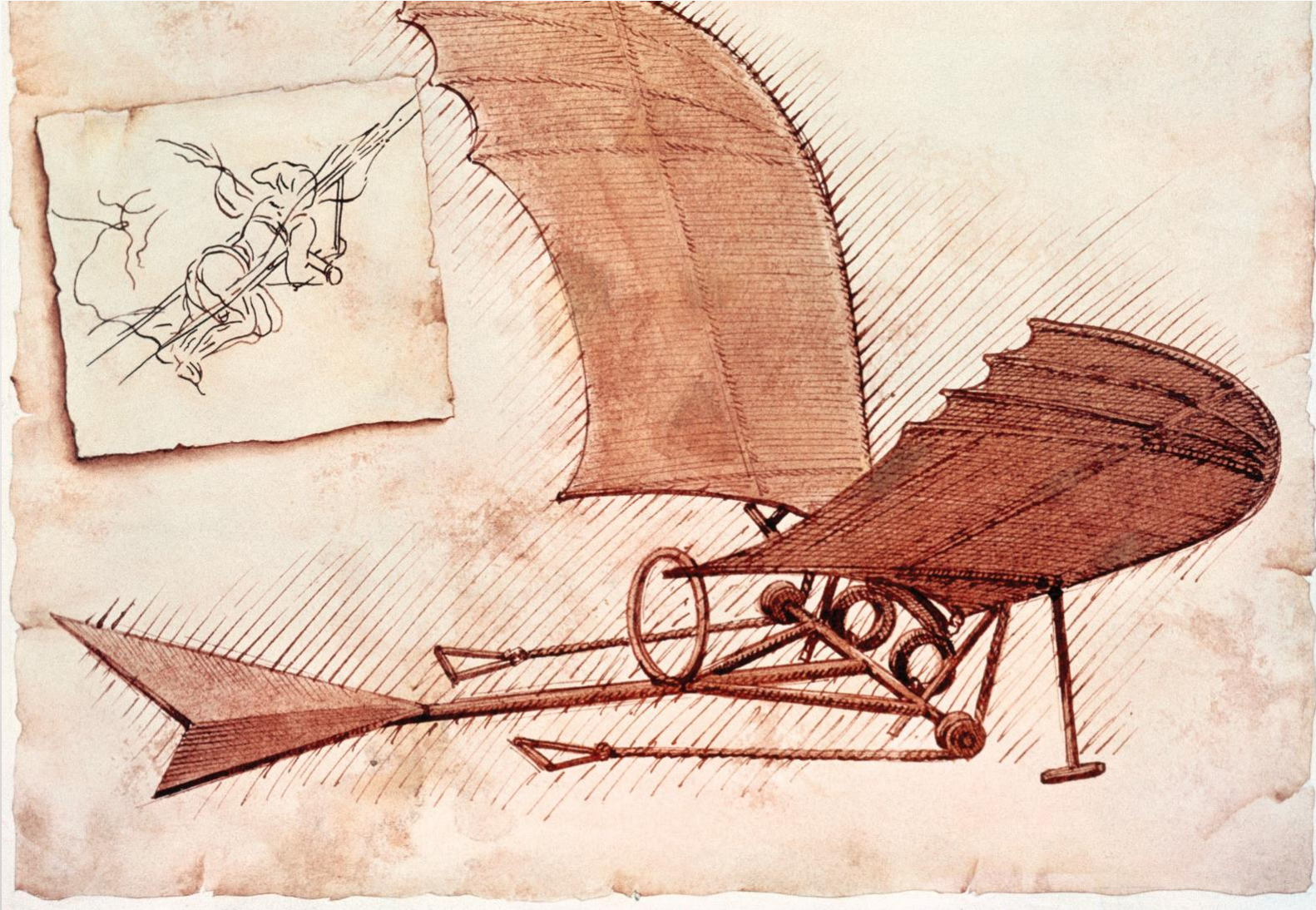
Lydia Kes

- Head of Education Aviation Maintenance since 2017.
- President of international Working Group “*New Training Standards*” of the EAMTC (European Aviation Maintenance Training Committee)
- Member of EASA HF CAG (EASA Human Factors Collaborative Analysts Group)

MSc. Neuropsychology

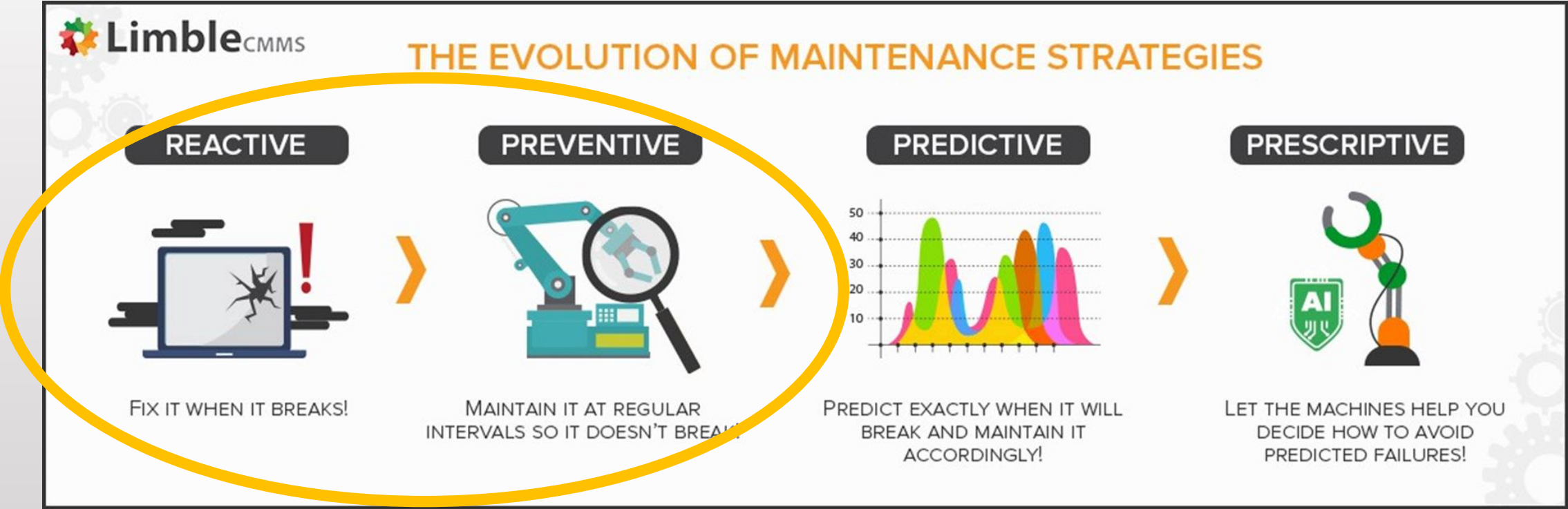
Inhoudsopgave

1. Where do we come from as an industry
2. What are we facing as in industry
3. New Training Standards: Competency Based Training



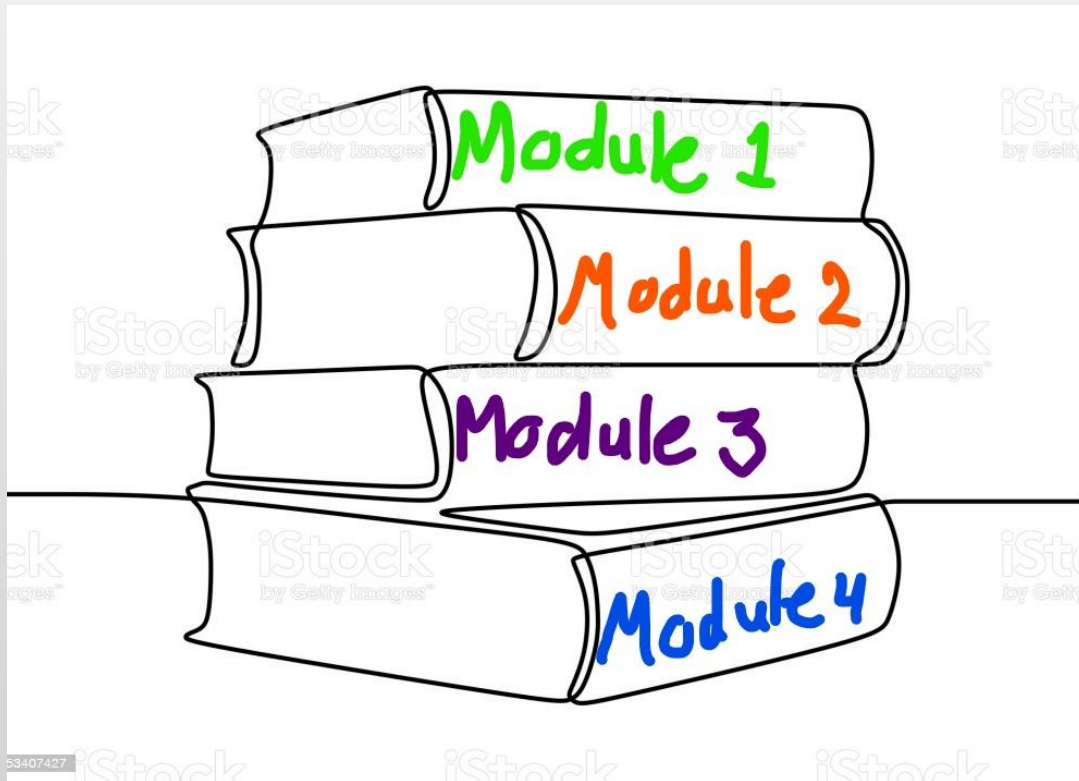
1. Where do we come from?

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[Predictive Maintenance \(PdM\): Implementation and Applications | by Bryan Christiansen | Medium](#)

1. Where do we come from?



- Hours based training
- Quantified and standardized learning experiences
- Black-and-White approach
- Convenient for regulators
- Non-flexible for the aviation (training) industry
- From an educational point of view very debatable

1. Where do we come from?

FOR INFORMATION ONLY

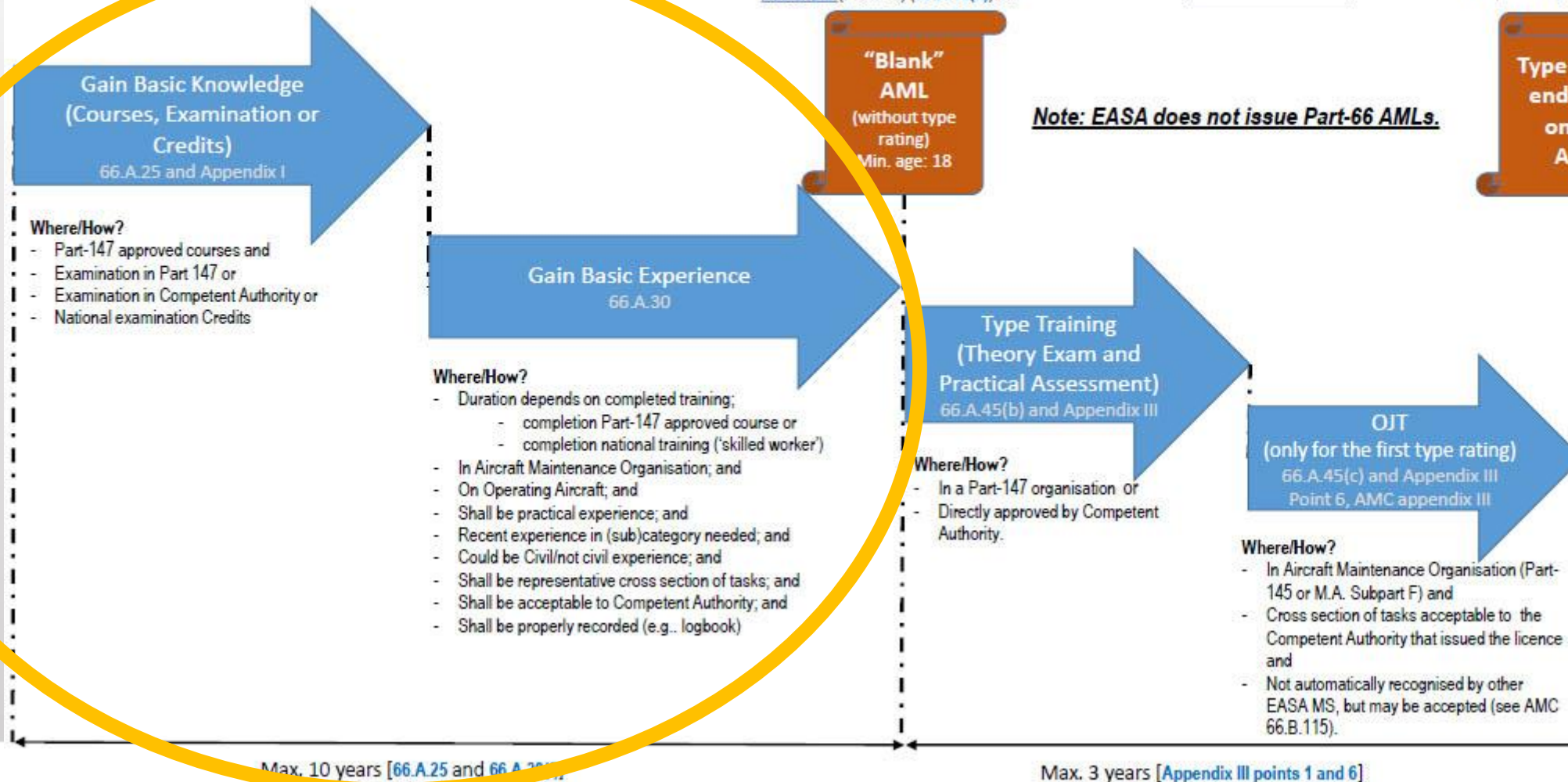
Version 1 (24-06-2016)

Scheme 1: Part-66 Aircraft Maintenance Licence (AML) - B1 and B2 categories with Group 1 Aircraft -

Apply to one of the [EASA MS Competent Authorities](#) (Form 19) (66.A.10(a)) for:

MS = Member State

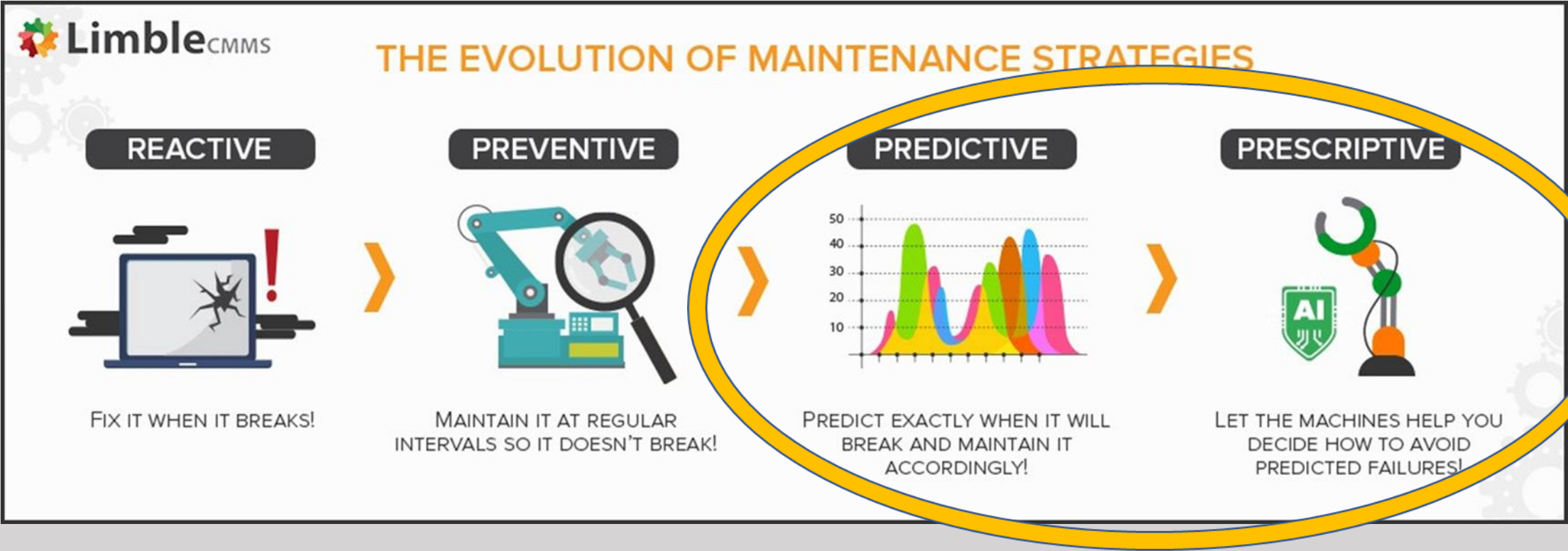
Apply to the [EASA MS Competent Authorities](#) that issued the Part-66 AML (Form 19) (66.A.10(b)) for:





2. What are we facing?

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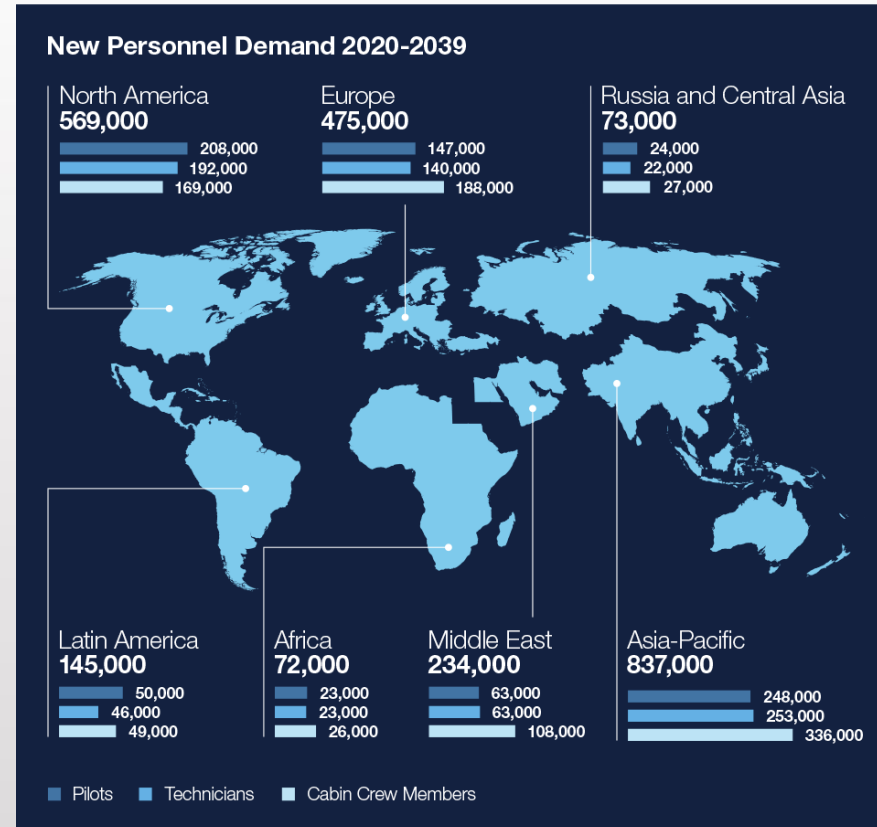


[Predictive Maintenance \(PdM\): Implementation and Applications | by Bryan Christiansen | Medium](#)

2. What are we facing?

A demand of 739,000
Technicians coming up

*Boeing New Personnel
Demand 2020 – 2039
(Pilot and Technician
Outlook 2020 – 2039,
Boeing)*



Commercial Aviation
2,086,000
New Personnel



Business Aviation
and Civil Helicopter
319,000
New Personnel

The MRO Industry Challenge:

- Keep enough technicians skilled to service the large fleet of old aircrafts;
- Acquiring the knowledge and skills to maintain the new generation airplanes with advanced technology.

3. Competency Based Training

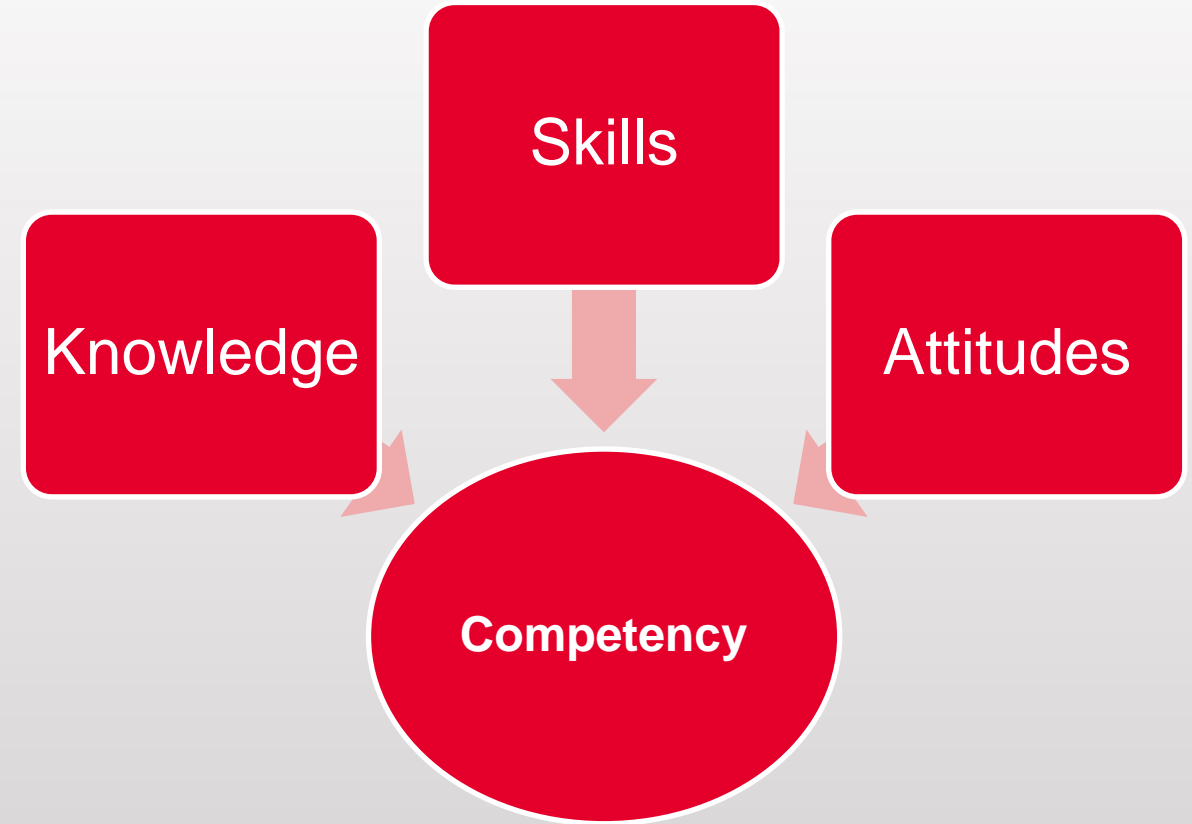


Competency Based Training

Competency Based Training

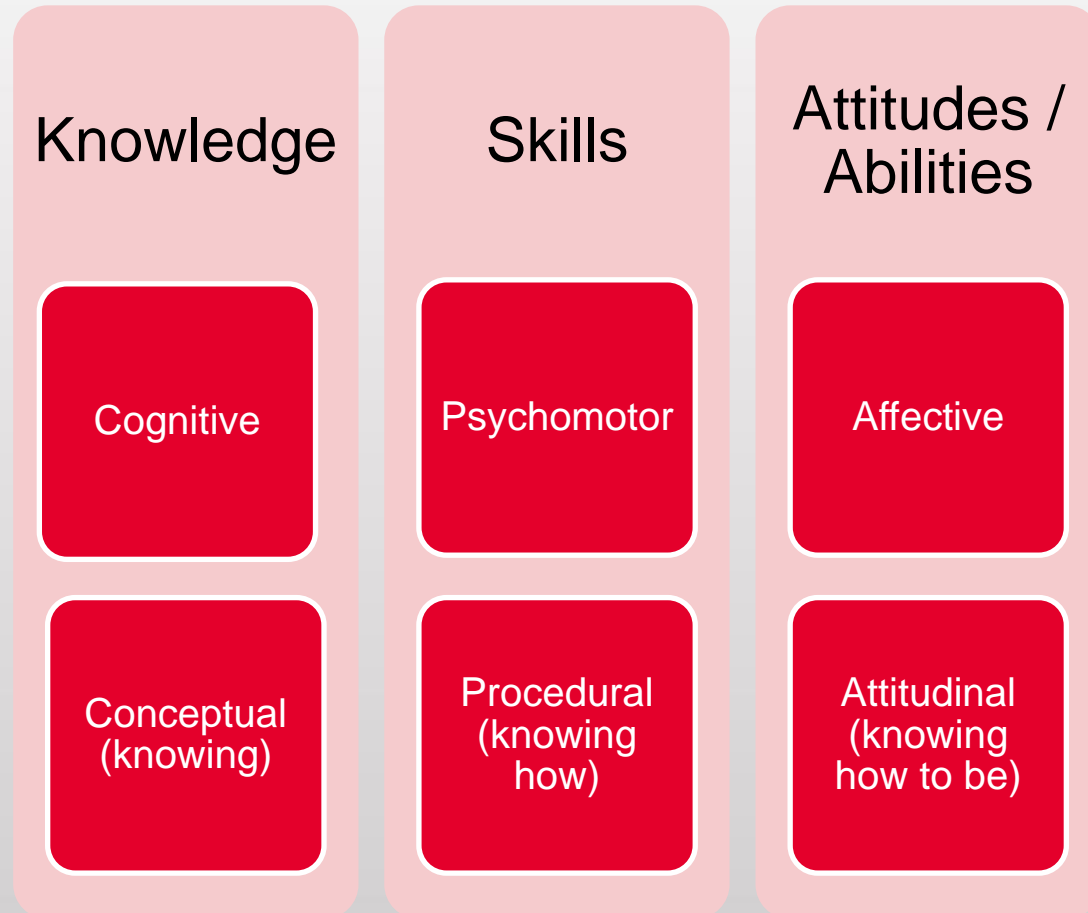


From frontal teaching to coaching



Competency can only be observed through behaviour and performance!

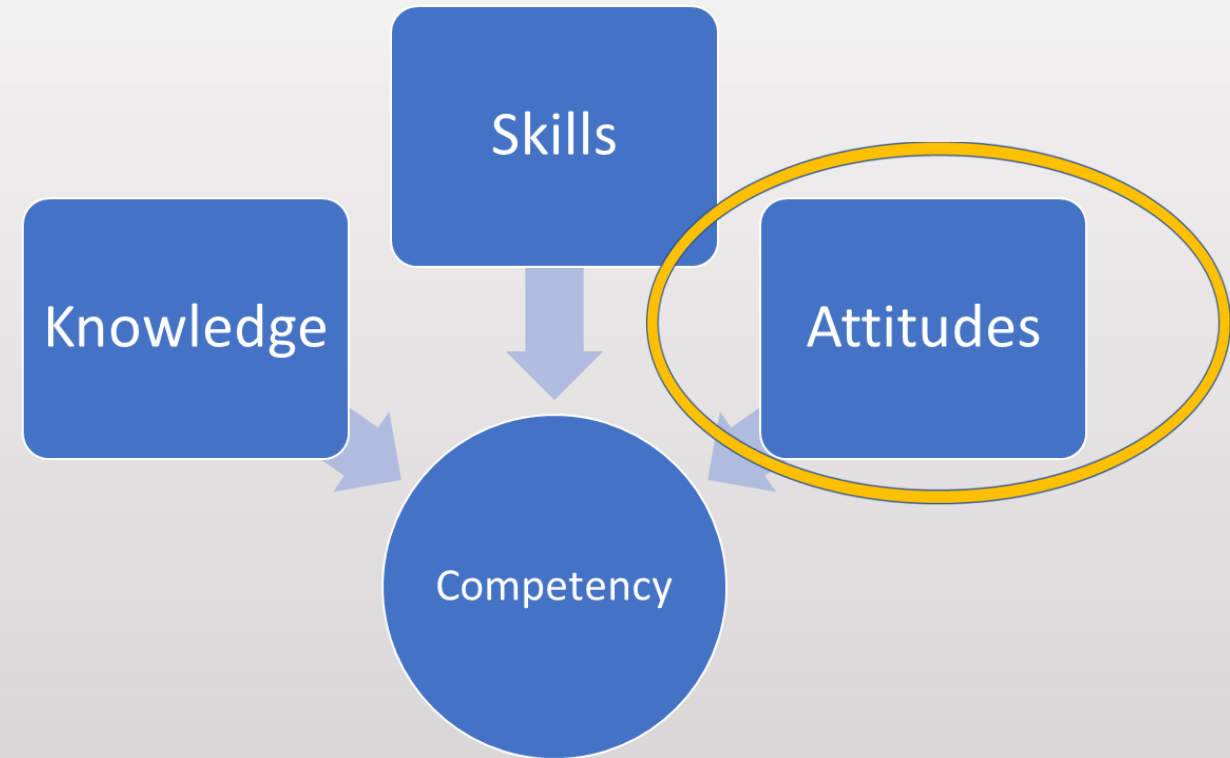
Competency Based Training



- Focus on *whole-task* learning experiences
- Increase the complexity of the tasks during the training program
- Integration of knowledge, skills and attitudes to do justice to the complexity of real-world scenario's in MRO Aviation
- 'Soft Skills' & 'Hard Skills'

Training Program PART-66 (B1) vs. Competencies

1. Mathematics
2. Physics
3. Electrical Fundamentals
4. Electronic Fundamentals
5. Digital Techniques Electronic Instrument Systems
6. Materials and Hardware
7. Maintenance Practices
8. Basic Aerodynamics
9. Human Factors
10. Aviation Legislation
11. Turbine Aeroplane, Aerodynamics, Structures and Systems
15. Gas Turbine Engines
17. Propeller





ICAO

Doc 9868

PROCEDURES FOR AIR NAVIGATION SERVICES

Training

Third Edition, 2020



This edition incorporates all amendments approved by the Council prior to 8 June 2020 and supersedes on 5 November 2020, all previous editions of Doc 9868.

INTERNATIONAL CIVIL AVIATION ORGANIZATION



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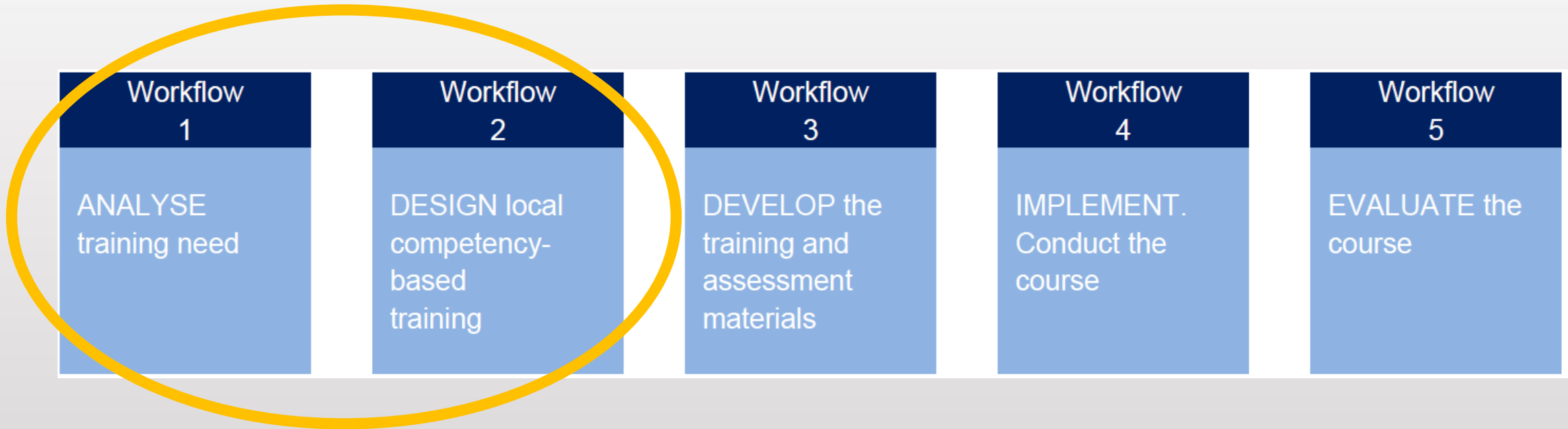
ICAO Competency Framework for Aircraft Maintenance

1. Application of procedures
2. Work Management
3. Situational Awareness
4. Technical Expertise
5. System Thinking
6. Coordination and Handover
7. Risk Management
8. Teamwork
9. Problem Solving and Decision Making
10. Self-Management and Continuous Learning
11. Communication

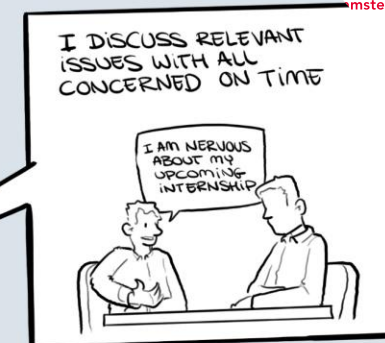
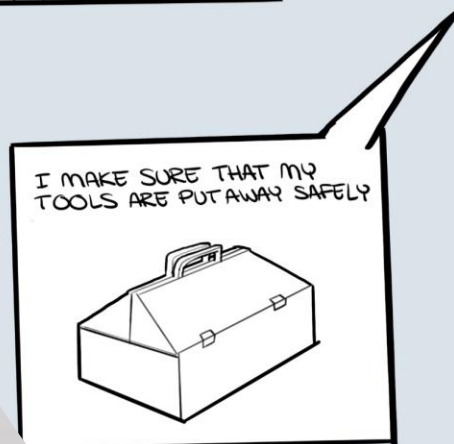
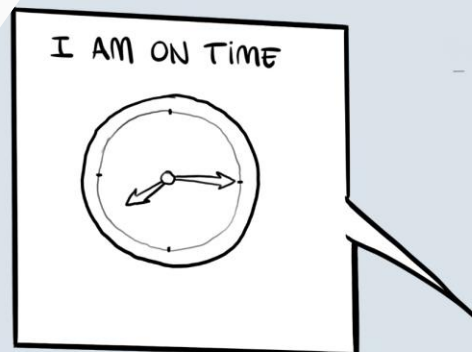
3. Competency Based Training

Competency	Definition	Observable Behaviours (OB)
<p>ICAO Competency 1:</p> <p>APPLICATION OF PROCEDURES</p>	<p><u>Description 1</u></p> <p><i>Identifies and applies procedures following appropriate documents and applicable regulations, using the appropriate knowledge</i></p>	<p>1.1 Identifies correct processes and procedures associated with a specific task</p> <p>1.2 Demonstrates proper use of documents.</p> <p>1.3 Applies system knowledge appropriately</p> <p>1.4 Demonstrates compliance with applicable regulations</p> <p>1.5 Documents work performed or accomplished correct</p>

3. Competency Based Training



SELF-REFLECTION



3. Competency Based Training

- Shift from quantity to quality (the students and organizational needs are central, not the training hours)
- Recognition of new teaching technologies (VR / AR / E-Learning)
- Framework of generic skills that don't need to be demonstrated repeatedly within subsequent aircraft type ratings
- Ability to cross-train from other industries with complementary competencies
- Flexibility to anticipate faster on changing circumstances and technologies (Lifelong Learning)
- Cost reduction; prior learning and previously developed competencies count → expedites the training path of the learner (self-paced learning)

Thank you for listening! Any Questions?

