

# Guidance for allowing Virtual Classroom Instruction and Distance Learning

## CIVIL AVIATION DIRECTORATE

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### 1.0 Introduction

The purpose of this document is to provide guidelines to Training Organisations when conducting virtual classroom instruction.

### 1.1 Scope

Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EU) No 2018/1139 of the European Parliament and of the Council:

- LAPL, PPL, CPL, ATPL, modular CPL, ATPL integrated (up to the time allowed by ORA.ATO.305 and AMC1 ORA.ATO.305)
- Class and type rating courses (AMC2 ORA.ATO.125, AMC3 ORA.ATO.125)
- MCC Airplane system training (GM1 FCL.735A) and airline oriented training
- 100 KSA (may include in suitable portions: classroom, e-learning).
- CC Initial training course and examination (CC.TRA.220, Appendix 1 to Part-CC, AMC 1 Appendix 1 to Part-CC)

Regulation (EU) 2015/340 of 20 February 2015 laying down technical requirements and administrative procedures relating to air traffic controllers' licences and certificates pursuant to Regulation (EU) No 2018/1139 of the European Parliament and of the Council, amending Commission Implementing Regulation (EU) No 923/2012 and repealing Commission Regulation (EU) No 805/2011.

Most can have virtual equivalents, such as:

- A classroom can be physical or virtual;
- Tutorials can be also e-tutorials;
- CBT can be also online available outside of the training organisation;
- Demonstrations, including those supported by demonstration equipment, virtual reality technology can be applied;
- Exercises carried out as groups or individuals and based on pre-flight and en-route planning, communications, presentations, and projects may be online in a small virtual classroom;
- The directed study including workbook exercises or assignments is excellent for online Learning Management System use;
- Aerodrome or aviation industry field trips, the instructor can present at industry field, students can have an online session (e.g. using Open Broadcaster Software) with the possibility of asking questions;
- Distance learning both methods synchronous and asynchronous are already in common use.
- E-learning
- Mobile learning
- Web-based learning



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### **2.0 Shift to more distance learning and virtual classroom environment**

Due to the COVID-19 outbreak European training organisations are in need to shift more of their theoretical knowledge instruction footprint to a remote/virtual environment to enable continuity of training of their student pilots by distance learning or virtual classroom instruction.

Prior to allowing distance learning or virtual classroom instruction, the training organisations shall perform a risk assessment that, as a minimum, carefully evaluates whether:

- Student pilots and theoretical knowledge instructors will have access to appropriate equipment to support remote learning/instruction or the shift;
- the teaching style remains effective in achieving the training objectives;
- the remote environment is able to reach each training objective (not all will be achievable, such as those related to OSD in pilot training).

The training organisation should reflect the agreed approach with an update of the training manual. The shift from the "real" class to the "virtual" class is a change that must be managed according to the change management procedure described in the manuals of a training organisation itself. This change from the real class to the virtual class is a change requiring prior approval.

Also, the training organisation should ensure that the instructors:

- Have received appropriate training covering the procedures established above and on the use of the tool.

The organisation would then be required to conduct a demonstration of a session to an inspector assigned by TMCAD.

### **2.1 Distance Learning**

Distance learning is covered by the following provisions in the Aircrew Regulation;

- Part-ORA of the Aircrew Regulation, Section III – Additional requirements for training organisations providing specific types of training, already foresees in a chapter for the distance learning course: Chapter 1 – Distance learning course.
- ORA.ATO.300 General states in which cases the training organisation may be approved to conduct modular course programmes using distance learning.
- AMC to Appendix 3 in Part-FCL in relation to CPL and ATPL training courses allows only a limited form of remote learning stating 'suitable proportions of...e-learning', including for the ATP integrated course. This limitation in an integrated course, in contrast to modular course, is intended to ensure that 'theoretical knowledge and flight training in an aircraft or an FSTD will be integrated so that as the flying training exercises are carried out students will be able to apply the knowledge gained from the associated theoretical knowledge instruction and flight training'.



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### 2.2 Virtual classroom instruction

Virtual classroom training is covered by the following provisions:

- ORA.ATO.305 Classroom instruction gives criteria regarding the classroom instruction. In point (b) and the AMC to point (b) states that classroom instruction delivered by an instructor to a student may include videoconferencing appropriate to the task if the necessary level of communication is ensured and appropriate equipment is available.

Virtual classroom shall ensure an acceptable level of communication and interaction with appropriate equipment and tools. The training organisation virtual classroom instruction should provide real-time instructor-led learning where students can interact, communicate, view and discuss presentations. The training organisation should also ensure that students make satisfactory academic progress and maintain reliable records for the completion of training.

These requirements should form part of the CMM system.

#### 2.2.1 Virtual classroom instruction – level of communication

For an acceptable level of communication, the following criteria should be met:

1. Live interactive instructor-led sessions in an online learning environment within a shared online space;
2. Continuous active and simultaneous exchange between instructor and student(s): dynamic and two-way flow of communication without delay;
3. The ability to share relevant training material as specified for the appropriate lesson, unit or course in the training manual;
4. Maintaining a “video and audio” interactive communication by taking into account non-verbal communication cues (tone of voice, facial expression, etc);
5. Ensuring an appropriate level of student’s attentiveness by providing guidance to the students such as quiet room without nuisances.
6. Ensuring a policy for the use of the virtual classroom instructions such as “raise your hand, question, etc”
7. Monitoring what the instructor’s screen displays;
8. Synchronous discussions with other students in the virtual classroom;
9. Ensuring that students have tools to present learning content in different formats, as well as to implement collaborative and individual activities. The instructor should have the particularly important role of the moderator who guides the learning process and supports group activities and discussions
10. Synchronous virtual classroom instructions require student-centred instruction in which the students and the instructor interact equally – active participation, collaborative work, and communication are encouraged in this type of classroom. The instructor should create opportunities for both independent learning and learning from one another and guides the students in developing and practicing the skills they need. In order to increase the motivation level – video lectures and self-directed activities, which the learners cover at their own pace, as well as enhancing their interest in the learning activities.



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### **2.2.2 Virtual classroom instruction – appropriate equipment and tool**

#### 1. Equipment

The equipment needed for the virtual classroom instruction should ensure the acceptable level of communication without technical interruption during the virtual classroom instruction. The training organisation should define the screen characteristic in order to have a high enough resolution to watch videos or read computer files regarding the available training materials.

#### 2. Tool

The tool should ensure the students identification (visual) and, a continuous assessment of the level of communication with all students. The tool should permit the instructor to achieve similar training objectives and quality of instruction, compared to instruction within actual classroom instruction as defined by the training organisation.

### **2.2.3 Virtual classroom instruction – instructor**

The training organisation should ensure that the instructor delivering virtual classroom instruction:

1. Has received appropriate training covering at least learning style, teaching method associated to virtual classroom instruction, such as videoconferencing, and a familiarisation to the used virtual classroom instruction system,
2. Has demonstrated his ability to manage time, effective use of training media, equipment and tools to ensure that training objectives are met,
3. Performs formative assessments only as the summative assessments are excluded,
4. Performs any necessary assessment of the student(s) including proper identification of the assessed student.

### **2.2.4 Virtual classroom instruction – student pilot**

1. Instruction in a synchronous virtual classroom can only be successful with the active participation and engagement of the students. This creates a positive learning environment and helps the students achieve the expected outcomes;
2. During the virtual classroom instruction there should be opportunities for frequent interaction between student and instructor, student and other students, and student and content;
3. Over the course of the virtual classroom instruction, the students should be encouraged by the instructor to participate every 3-5 minutes. This can be achieved by a variety of activities such as brainstorming, small group discussion, collaborative and individual tasks, Q&A sessions, hands-on experience, etc.

### **2.2.5 Virtual classroom instruction – Acceptable level of academic effectiveness**

#### 1. Maximum number of students and training times

Class numbers in ground subjects involving virtual classroom instruction should not exceed 12 students, unless a risk assessment as described in paragraph 2 is conducted where the training organisation demonstrates that a higher number of students would not affect the effectiveness of the training and its objectives by accepting more students. The maximum number of students



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should be established considering the capability of technology of the tool to maintain an acceptable level of communication.

The amount of time spent in effective virtual classroom instruction should not exceed 5 hours per day. A break of at least 20 minutes should be planned for every hour of virtual classroom instruction.

#### 2. Attendance records

The instructor delivering the virtual classroom instruction should be responsible for the attendance records of the students by ensuring that the students are in the virtual classroom and they have the appropriate level of communication during all the virtual classroom instruction.

#### 3. Student progress

Non-attendance in case of interruption or loss of the level of communication should be managed in accordance with the “non-attendance” policy as in an actual classroom instruction.

#### **2.2.6 Training system feedback loop**

The training organisation should ensure that the instructor delivering virtual classroom instruction:

1. Reports strengths and weaknesses of the training system (training environment, curriculum, assessment/evaluation) including feedback from students;
2. Suggests improvements for the training system;
3. Keeps an effective time management;
4. Makes sure that there are synchronous discussions with classmates.

## PERSONNEL LICENSING SECTION