OPERATIONS ADVISORY NOTICE (OAN)		**tm** Transport Malta
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Subject: **GUIDANCE FOR VIRTUAL CLASSROOM INSTRUCTION AND DISTANCE LEARNING.**		

1.0   INTRODUCTION

Following the successful use of virtual classroom training during the COVID 19 pandemic period, EASA has published guidelines which will continue to allow such training post pandemic period. Main excerpts are included in this OAN.

On-line teaching requires careful thinking about how students and teachers are equipped for the change and serious consideration about whether the teaching style is still effective when taken out from the classroom and transposed to or mixed with technological devices. Moreover, inequalities are exacerbated when it comes to access to technology and digital devices, as students may lack the connections and devices to learn remotely.

On-line learning makes extensive use of the concept of *connectivism* which is a learning theory that explains how Internet technologies have created new opportunities for people to learn and share information across the World Wide Web and among themselves. A good and thorough understanding of this theory will help course designers achieve effective learning in virtual classes as they would in a real class.

This OAN provides guidelines to operators for such training to be used as part of blended training and which are meant to be included and published in their OM D.

2.0   REQUIREMENTS FOR AOC HOLDERS WHO INTEND TO CHANGE TRAINING FORMAT FROM REAL CLASS TRAINING TO DISTANCE LEARNING OR VIRTUAL CLASSROOM INSTRUCTION.

When deciding to change distance learning, if applicable, or virtual classroom instruction, the operator needs to perform a risk assessment that, as a minimum, carefully evaluates whether:

1. *Students and theoretical knowledge instructors will have access to appropriate equipment to support remote learning/instruction or the shift from face-to-face to virtual classroom training;*
2. *The teaching style remains effective in achieving the training objectives;*
3. *The remote environment can reach each training objective (not all will be achievable, such as those related to OSD in pilot training).*

The operator should reflect the agreed approach with an update of the OM Part D. The shift from the face-to-face class to the virtual class is a transformation/ variation that must be managed according to the change management procedure described in the manuals of the operator. An AOC holder outsourcing such training to third party providers shall include the verification of compliance by the third-party provider as part of the compliance monitoring programme.

The change from the physical tuition to a virtual one is a major change, requiring the prior approval of TM CAD.

Operators are reminded that any time spent on such courses shall be recorded on the respective rosters as 'duty'.

3.0   DISTANCE LEARNING.

Distance learning is not new and is covered by provisions in the Aircrew Regulation, Part-66 and Part-147 Regulations.

When introducing distance learning, due consideration should be given to students' evaluation. For this reason, after finishing the distance learning course, the operator should have an evaluation meeting with the students at the training centre.

In regard of theoretical knowledge instruction linked to flight crew type-rating training that often take place in different time zones, it may be useful to allow individual distance learning with feedback at a later stage.

During distance learning the progress needs to be more closely monitored. This can be done by additional (online) tests. For some courses, examination may not be acceptable online and should be done at a later stage. A short refresher training may be desirable.

Distance learning requires additional attention during internal audits. (Refer to **OAN 16 2018**).

4.0   VIRTUAL CLASSROOM INSTRUCTION.

The face-to-face classroom instruction delivered by an instructor may be replaced by virtual classroom instruction, such as videoconferencing, if an acceptable level of communication and interaction is ensured with appropriate equipment and tools. The virtual classroom instruction should provide real-time instructor-led learning where students can interact, communicate, view and discuss presentations. The operator should also guarantee that students make satisfactory academic progress and maintain reliable records for the completion of training.

There are no requirements for IT infrastructure addressing personal data protection and security, change management, continuity, integrity, audits, user authentication privileges, logging of overall integrated system activity, etc. However, many training providers and air operators run their business in the paperless way with various types of IT tools, forming a more or less integrated IT system: VLE (Virtual Learning Environment), LMS (Learning Management Systems), Virtual Classrooms, Video Conferencing, cloud-based e-learning, progress tests from outsourced sites, E-books, Twitter, YouTube or other video channels, etc.

Some backup guidance can only be found in the domain's specific regulations mainly for record-keeping.

These requirements should be in place and constitute a crucial part of the Compliance Monitoring System.

4.1 Virtual Classroom Instruction – Level of Communication

An acceptable level of communication should meet all the following criteria:

1. Live interactive instructor-led sessions in an online learning environment within a shared online space;
2. Maintain continuously an active and simultaneously exchange between instructor and student(s): dynamic and two-way flow of communication without delay;
3. Able to share relevant training material as specified for the appropriate lesson, unit or course in the training manual;
4. Maintain a "video and audio" interactive communication by considering non-verbal communication cues (tone of voice, facial expression …);
5. Ensuring an appropriate level of student's attentiveness by providing guidance to the students such as quiet room without nuisances.
6. Establish a policy for the use of the virtual classroom instructions such as "raise your hand, question, …"
7. Monitor what the instructor's screen displays;
8. Synchronous discussions with other students in the virtual classroom;
9. Ensure 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.

4.2 Virtual Classroom Instruction – Appropriate Equipment and Tools

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. Generally smart phones are not considered adequate for presenting video and images, although they may be very effective for attending a lecture.

4.3 Virtual Classroom Instruction – Instructor

The operator 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. Demonstrates his ability to manage time, training media and equipment and tool to ensure that the training objectives are met'.
3. Performs any necessary assessment of the student(s) including proper identification of the assessed student.

4.4 Virtual Classroom Instruction – Student

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.

4.5 Virtual Classroom Instruction – Acceptable Level of Academic Effectiveness

1. Maximum number of students and training times
The maximum number of students should be established considering the capability of the tool to maintain an acceptable level of communication and it should be adapted to the training objectives. Ideally, it should avoid exceeding a maximum number of 12 students. <mark>Except for virtual training for single-pilot operations whereby it should be limited to 6 students to ensure a sufficient level of interaction during the training session.</mark>

Training design should consider that students may find virtual classroom training more tiring than traditional classroom training and the daily training hours may therefore need to be reduced. A break of reasonable time 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 the students are in the virtual classroom instruction with the appropriate level of communication during all the virtual classroom instruction.

3. Interruption of connection, loss of communication
Interruption of connection and loss of communication amongst individual participants can happen during a virtual classroom session. The operator should develop a policy on the progress of such a session, repetition of instructed training element and re-involvement of participants affected by the temporary loss of connection.

Non-attendance should be managed in accordance with the "non-attendance" policy as in a face-to-face classroom instruction.

4. Examinations/Evaluations
When examination or evaluation is necessary in virtual classroom, positive identification of students should be assured. Oral exams or remote forms could be used, provided the system used is the same for all students.

5 TRAINING SYSTEM FEEDBACK LOOP

The operator should ensure that:

1. The participants report strengths and weaknesses of the training system (training environment, training programme, assessment/evaluation) and suggest improvements;
2. The instructor keeps an effective time management;
3. Discussions among classmates is facilitated;
4. Feedback system for student is elicited.
5. <mark>Makes sure that there are synchronous discussions with classmates.</mark>

6 OVERSIGHT BY TM CAD

TM CAD should have access to the virtual classrooms and sample the training. Operators and in the case of outsourcing training providers shall provide TM CAD Flight Operations Inspectors with log in details in advance.

Flight Operations Inspectorate