



MILITARY AIR TRAFFIC CONTROLLER INITIAL TRAINING

**Initial rating training composition document
Approach Control Surveillance (APS)**

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**MILITARY AIR TRAFFIC CONTROLLER
WORKING GROUP**

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STATUS

The Status of the document can take 3 values:

Working Draft: Working copy to develop the proposed version or revision of the document.

Draft: Version to be proposed to the ESMAB Policy by the MATCO Working Group

Approved: Final version approved* by the ESMAB Policy for publication.

EDITION

The Edition value of document will have the following template: **Edition X.YY:**

The **value of X** will change after a **major** revision of the document.

The **value of Y** will change after a **minor** revision of the document.

* It should be noted that the approval by ESMAB Policy is given with the clear understanding that the document is legally non-binding and its potential implementation remains fully a decision to be taken at national level.

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COMPOSITION OF MILITARY ATCO INITIAL APS RATING TRAINING:

For reference use: AMC1 ATCO.D.010(a)(2)(iv) Composition of initial APS rating training¹

All the following content comes from EASA AMC and includes the amendments coming from the Commission Implementing Regulation (EU) 2023/893 of 21 April 2023 amending Commission Regulation (EU) 2015/340 which was published in the Official Journal of the EU on 4 May 2023.

These amendments are drafted according to the EASA regulatory convention for the introduction of changes compared to applicable provisions, i.e.:

Number represents the level of taxonomy as for [AMC1 ATCO.D.010\(a\) \(a\)\(2\)\(i\) Composition of initial training](#).

The term “National” when used in the composition document should be understood as meaning both civil and military.

Mandatory content should be understood as training content provided in all Member States.

Optional content should be understood as content that might be omitted in Member States where this is not applicable.

Military ATCO Initial Approach Control Surveillance (APS) Rating training should contain the following subjects, topics, subtopics and training objectives using as baseline the subjects, topics and subtopics contained in Appendix 6 to Annex I of amended Commission Regulation (EU) 2015/340 — Aerodrome Approach Control Procedural Rating training. This might indeed facilitate the potential latter conversion of Military ATCO licences into Civil Student ATCO licences.

The taxonomy of some of the training objectives identified in AMC1 ATCO.D.010(a)(2)(iv) to Commission Regulation (EU) 2015/340 have been highlighted in **bright green** where they required to be adapted to the working requirements and needs of Military ATCOs.

Additional topics, subtopics and training objectives have also been identified and included **in bright yellow** in the Initial APS Rating Training content to take into account the specific training requirements of Military ATCOs.

The composition of the Military ATCO Initial APS Rating Training as presented in this document are the minimum requirements recommended to be implemented by interested military ATCO training organisations. Any Member State might decide to train its military ATCOs giving one or several of the training objectives a higher level of importance hence a higher taxonomy level.

Despite the fact that this document is legally non-binding, in order to achieve standardisation in the initial training of Military ATCOs, Member States which decide to implement it should apply its content as proposed.

¹ Page 502 of Easy Access Rules dated March 2024

SUBJECT 1: INTRODUCTION TO THE COURSE

TOPIC INTR 1 — COURSE MANAGEMENT				
Subtopic INTR 1.1 — Course introduction				
APS INTR 1.1.1	Explain the aims and main objectives of the course.	2		ALL
Subtopic INTR 1.2 — Course administration				
APS INTR 1.2.1	State how the course is administered.	1		ALL
Subtopic INTR 1.3 — Study material and training documentation				
APS INTR 1.3.1	Use appropriate documents and their sources for course studies.	3	Optional content: training documentation, library, CBT library, web, learning management server	ALL
APS INTR 1.3.2	Integrate appropriate information into course studies.	4	Training documentation Optional content: supplementary information, library	ALL
TOPIC INTR 2 — INTRODUCTION TO THE ATC TRAINING COURSE				
Subtopic INTR 2.1 — Course content and organisation				
APS INTR 2.1.1	State the different training methods used during the course.	1	Theoretical training, practical training, self-study, types of training events	ALL
APS INTR 2.1.2	State the subjects covered by the course and their purpose.	1		ALL
APS INTR 2.1.3	Describe the organisation of theoretical training.	2	Optional content: course programme	ALL
APS INTR 2.1.4	Describe the organisation of practical training.	2	Optional content: PTP, simulation, briefing, debriefing, course programme	ALL
Subtopic INTR 2.2 — Training ethos				
APS INTR 2.2.1	Recognise the feedback mechanisms available.	1	Training progress, assessment, briefing, debriefing, learner–instructor feedback, instructor–instructor feedback	ALL
Subtopic INTR 2.3 — Assessment process				
APS INTR 2.3.1	Describe the assessment process.	2		ALL

SUBJECT 2: AVIATION LAW

TOPIC LAW 1 — ATCO LICENSING/CERTIFICATE OF COMPETENCE				
Subtopic LAW 1.1 — Privileges and conditions				
APS LAW 1.1.1	Appreciate the conditions which shall be met to issue an Approach Control Surveillance rating.	3	Regulation (EU) 2015/340 ¹ <i>Optional content: national documents</i>	APS
APS LAW 1.1.2	Explain how to maintain and update professional knowledge and skills to retain competence in the operational environment.	2		ALL
APS LAW 1.1.3	Explain the conditions for suspension/ revocation of an ATCO licence.	2	Regulation (EU) 2015/340, military regulations and directives	ALL
TOPIC LAW 2 — RULES AND REGULATIONS				
Subtopic LAW 2.1 — Reports				
APS LAW 2.1.1	Describe the functions of, and processes for, reporting.	2	Reporting culture, mandatory and voluntary occurrence reporting forms, Regulation (EU) No 376/2014 ² , Regulation (EU) 2015/1018 ³ <i>Optional content: breach of regulations, watchbook/logbook, records, voluntary reporting, military specific reports.</i>	ALL
APS LAW 2.1.2	Use forms for reporting.	3	Regulation (EU) No 376/2014, mandatory and voluntary occurrence reporting forms <i>Optional content: routine air-reports, breach of regulations, watchbook/logbook, records, military specific reports.</i>	ALL
Subtopic LAW 2.2 — Airspace				
APS LAW 2.2.1	Appreciate airspace classes and structure and their relevance to operations using the Approach Control Surveillance rating.	3		APS
APS LAW 2.2.2	Provide planning, coordination and control actions appropriate to the classification and structure of airspace.	4	Military requirements, areas of responsibility <i>Optional content: Regulation (EU) No 923/2012⁴, international requirements,</i>	ALL

¹ Commission 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 (EC) No 216/2008 of the European Parliament and of the Council, amending Commission Implementing Regulation (EU) No 923/2012 and repealing Commission Regulation (EU) No 805/2011 (OJ L 63, 6.3.2015, p. 1).

² Regulation (EU) No 376/2014 of the European Parliament and of the Council of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation, amending Regulation (EU) No 996/2010 of the European Parliament and of the Council and repealing Directive 2003/42/EC of the European Parliament and of the Council and Commission Regulations (EC) No 1321/2007 and (EC) No 1330/2007 (OJ L 122, 24.4.2014, p. 18).

³ Commission Implementing Regulation (EU) 2015/1018 of 29 June 2015 laying down a list classifying occurrences in civil aviation to be mandatorily reported according to Regulation (EU) No 376/2014 of the European Parliament and of the Council (OJ L 163, 30.6.2015, p.1).

⁴ Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (OJ L 281, 13.10.2012, p. 1).

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TOPIC LAW 2 — RULES AND REGULATIONS				
			<i>civil requirements, sectorisation, national requirements</i>	
APS LAW 2.2.3	Appreciate responsibility for terrain clearance.	3		ALL

TOPIC LAW 3 — ATS SAFETY MANAGEMENT				
Subtopic LAW 3.1 — Feedback process				
APS LAW 3.1.1	State the importance of controller contribution to the feedback process.	1	<i>Optional content: voluntary reporting</i>	ALL
APS LAW 3.1.2	Describe how reported occurrences are analysed.	2	<i>Optional content: Regulation (EU) No 376/2014, local procedures</i>	ALL
APS LAW 3.1.3	Name the means used to disseminate recommendations.	1	<i>Optional content: safety letters, safety boards web pages</i>	ALL
APS LAW 3.1.4	Appreciate the 'Just Culture' concept.	3	Benefits, prerequisites, constraints <i>Optional content: Skybrary</i>	ALL
Subtopic LAW 3.2 — Safety investigation				
APS LAW 3.2.1	Describe the role and objectives of safety investigation in the improvement of safety.	2		ALL

SUBJECT 3: AIR TRAFFIC MANAGEMENT

TOPIC ATM 1 — PROVISION OF SERVICES				
Subtopic ATM 1.1 — Air traffic control (ATC) service				
APS ATM 1.1.1	Appreciate own area of responsibility.	3		APP ACP APS ACS
APS ATM 1.1.2	Provide approach control service.	4	Regulation (EU) No 923/2012, Regulation (EU) 2017/373, operating procedures for the simulated/training environment	APP APS
Subtopic ATM 1.2 — Flight information service (FIS) and Military Radar Information Service (RIS) ¹				
APS ATM 1.2.1	Provide FIS and RIS.	4	Regulation (EU) No 923/2012, Regulation (EU) 2017/373 <i>Optional content: national documents, military regulations and directives</i>	ALL
APS ATM 1.2.2	Use an ATS surveillance system in the provision of FIS and RIS.	3	Regulation (EU) No 923/2012, Regulation (EU) 2017/373, information to identified aircraft concerning: traffic, navigation <i>Optional content: weather</i>	APS ACS
APS ATM 1.2.3	Issue appropriate information concerning the position of conflicting traffic.	3	Regulation (EU) No 923/2012, Regulation (EU) 2017/373, traffic information, essential traffic information <i>Optional content: military regulations and directives</i>	APS ACS APP ACP
APS ATM 1.2.4	Appreciate the use of ATIS in the provision of flight information service.	3	Regulation (EU) No 923/2012	ALL
Subtopic ATM 1.3 — Alerting service (ALRS)				
APS ATM 1.3.1	Provide ALRS.	4	Regulation (EU) 2017/373, Regulation (EU) No 923/2012 <i>Optional content: national documents</i>	ALL
APS ATM 1.3.2	Respond to distress and urgency messages and signals.	3	Regulation (EU) No 923/2012, ICAO Annex 10 <i>Optional content: EUROCONTROL Guidelines for Controller Training in the Handling of Unusual/Emergency Situations, ICAO Doc 4444, national documents</i>	ALL
APS ATM 1.3.3	Use an ATS surveillance system in the provision of ALRS.	3		APS ACS
Subtopic ATM 1.4 — ATS system capacity and air traffic flow management				
APS ATM 1.4.1	Appreciate the impact of ATS system capacity and air traffic flow management on the controller.	3	<i>Optional content: EUROCONTROL ATFCM Users Manual, FABs, FUA, free route airspace, local implementation of ATFCM principles, military operational principles, etc.</i>	APP ACP APS ACS

¹ Where applicable.

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TOPIC ATM 1 — PROVISION OF SERVICES				
APS ATM 1.4.2	Take account of flow management procedures in the provision of ATC.	2	Optional content: EUROCONTROL ATFCM Users Manual	APP APS
APS ATM 1.4.3	Organise traffic flows and patterns to take account of airspace boundaries.	4	Optional content: civil and military, controlled, uncontrolled, advisory, restricted, danger, prohibited, special rules, sector boundaries, national boundaries, FIR boundaries, delegated airspace, transfer of control, transfer of communications, en-route, off-route	APP ACP APS ACS
APS ATM 1.4.4	Organise traffic flows and patterns to take account of areas of responsibility.	4	Optional content: EUROCONTROL ATFCM Users Manual	APP ACP APS ACS
APS ATM 1.4.5	Inform the supervisor of local factors affecting ATS system capacity and air traffic flow management.	3	Optional content: abnormal situations, decrease in sector capacity, limitations on systems and equipment, changes in workload/capacity, unusual meteorological conditions, relevant information like: reported ground-based incidents, forest fire, smoke, oil pollution, laser incidents.	APP ACP APS ACS
APS ATM 1.4.6	Organise traffic flows and patterns to take account of ATS surveillance system capability.	4		APS ACS
Subtopic ATM 1.5 — Airspace management (ASM)				
APS ATM 1.5.1	Appreciate the impact of ASM on the controller.	3	Optional content: FABs, EUROCONTROL Specification for the application of FUA, TSAs, CDRs, CBAs, free route airspace	APP ACP APS ACS
APS ATM 1.5.2	Organise traffic to take account of ASM.	4	Real-time activation, deactivation or reallocation of airspace Optional content: CDR, TSA, TRA, CBA, PCA, NOTAM areas	APS ACS
TOPIC ATM 2 — COMMUNICATION				
Subtopic ATM 2.1 — Effective communication				
APS ATM 2.1.1	List the communication means between controllers.	1	Optional content: electronic, written, verbal and non-verbal communication	ALL
APS ATM 2.1.2	Select the most suitable means of communication given the situation.	5		ALL
APS ATM 2.1.3	Use approved phraseology.	3	Regulation (EU) No 923/2012, ICAO Doc 4444 Optional content: published national/local language phraseology, NATO STANAGs	ALL
APS ATM 2.1.4	Ensure effective communication.	4	Use of plain language when required, communication within the sector/working position, between the sectors/WPs/ATC Units, readback/verification of readback	ALL

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TOPIC ATM 2 — COMMUNICATION				
APS ATM 2.1.5	Analyse examples of pilot and controller communication for effectiveness.	4	Optional content: real-life recordings, situation in the simulator	ALL

TOPIC ATM 3 — ATC CLEARANCES AND ATC INSTRUCTIONS				
Subtopic ATM 3.1 — ATC clearances				
APS ATM 3.1.1	Issue appropriate ATC clearances.	3	Regulation (EU) No 923/2012, Regulation (EU) 2017/373, ICAO Doc 4444 Optional content: national documents	ALL
APS ATM 3.1.2	Integrate appropriate ATC clearances into the control service.	4		ALL
APS ATM 3.1.3	Ensure that the agreed course of action is carried out.	4		ALL
Subtopic ATM 3.2 — ATC instructions				
APS ATM 3.2.1	Issue appropriate ATC instructions.	3	Regulation (EU) No 923/2012, Regulation (EU) 2017/373, ICAO Doc 4444 Optional content: national documents	ALL
APS ATM 3.2.2	Integrate appropriate ATC instructions into the control service.	4		ALL
APS ATM 3.2.3	Ensure that the agreed course of action is carried out.	4		ALL

TOPIC ATM 4 — COORDINATION				
Subtopic ATM 4.1 — Necessity for coordination				
APS ATM 4.1.1	Identify the need for coordination.	3		ALL
Subtopic ATM 4.2 — Tools and methods for coordination				
APS ATM 4.2.1	Use the available tools and methods for coordination.	3	Optional content: electronic transfer of flight data, telephone, interphone, intercom, direct speech, radiotelephone (RTF), local agreements, automated system coordination, specific military tools, silent coordination	ALL

Subtopic ATM 4.3 — Coordination procedures				
APS ATM 4.3.1	Initiate appropriate coordination.	3	Delegation/transfer of responsibility for air-ground communications and separation, transfer of control, etc., Regulation (EU) 2017/373 Optional content: release point	ALL
APS ATM 4.3.2	Analyse effect of coordination requested by an adjacent position/unit.	4	Optional content: delegation/transfer of responsibility for air-ground communications and separation, release point, transfer of control, etc.	ALL

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Subtopic ATM 4.3 — Coordination procedures				
APS ATM 4.3.3	Select, after negotiation, an appropriate course of action.	5		ALL
APS ATM 4.3.4	Ensure that the agreed course of action is carried out.	4		ALL
APS ATM 4.3.5	Coordinate when providing FIS, RIS .	4	Regulation (EU) 2017/373 <i>Optional content: ICAO Doc 4444, handling of military areas or operations</i>	ALL
APS ATM 4.3.6	Coordinate when providing ALRS.	4	Regulation (EU) 2017/373 <i>Optional content: ICAO Doc 4444</i>	ALL

TOPIC ATM 5 — ALTIMETRY AND LEVEL ALLOCATION				
Subtopic ATM 5.1 — Altimetry				
APS ATM 5.1.1	Allocate levels according to altimetry data.	4	Regulation (EU) No 923/2012	ALL
APS ATM 5.1.2	Ensure separation according to altimetry data.	4	<i>Optional content: transition level, transition altitude, transition layer, height, flight level, altitude, vertical distance to airspace boundaries</i>	ALL
Subtopic ATM 5.2 — Terrain clearance				
APS ATM 5.2.1	Provide planning, coordination and control actions appropriate to the rules for minimum usable levels and terrain clearance.	4	<i>Optional content: minimum vectoring altitude, terrain clearance dimensions, minimum safe altitudes, transition level, minimum flight level, minimum sector altitude</i>	APS ACS

TOPIC ATM 6 — SEPARATIONS				
Subtopic ATM 6.1 — Vertical separation				
APS ATM 6.1.1	Provide standard vertical separation.	4	ICAO Doc 4444, Regulation (EU) No 923/2012, level allocation, during climb/descent, rate of climb/descent, holding pattern, military regulations and directives <i>Optional content: EUROCONTROL EUROAT document</i>	APP APS ACS
APS ATM 6.1.2	Provide increased vertical separation.	4	Regulation (EU) No 923/2012, ICAO Doc 4444, military regulations and directives <i>Optional content: level allocation, during climb/descent, rate of climb/descent, degraded aircraft performance, non-RVSM aircraft, reported severe turbulence, EUROCONTROL EUROAT document</i>	APP ACP APS ACS
APS ATM 6.1.3	Appreciate the application of emergency vertical separation.	3	Regulation (EU) No 923/2012, ICAO Doc 4444, ICAO Doc 7030	APP ACP APS ACS

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TOPIC ATM 6 — SEPARATIONS				
APS ATM 6.1.4	Provide vertical separation in a surveillance environment.	4	Pressure altitude-derived information, pilot-level reports, military regulations and directives <i>Optional content: into/out of ATS surveillance system coverage, EUROCONTROL EUROAT document</i>	APS ACS
Subtopic ATM 6.2 — Longitudinal separation in a surveillance environment				
APS ATM 6.2.1	Provide longitudinal separation in a surveillance environment.	4	Successive departures, successive arrivals, overflights, speed control, silent transfer, ICAO Doc 4444, military regulations and directives <i>Optional content: EUROCONTROL EUROAT document</i>	APS
Subtopic ATM 6.3 — Delegation of separation				
APS ATM 6.3.1	Delegate separation to pilots in the case of aircraft executing successive visual approaches.	4		APP APS
APS ATM 6.3.2	Appreciate the conditions which must be met when delegating separation to pilots to fly maintaining own separation while in VMC.	3	Regulation (EU) 2017/373	APP APS
Subtopic ATM 6.4 — Wake turbulence distance-based separation				
APS ATM 6.4.1	Provide distance-based wake turbulence separation.	4	Regulation (EU) 2017/373, Regulation (EU) No 923/2012 <i>Optional content: EASA SIB 2017-10 'En-route Wake Turbulence Encounters', national documents</i>	APS ACS
Subtopic ATM 6.5 — Separation based on ATS surveillance systems				
APS ATM 6.5.1	Describe how separation based on ATS surveillance systems is applied.	2	Regulation (EU) 2017/373	APS ACS
APS ATM 6.5.2	Provide horizontal separation.	4	Regulation (EU) 2017/373 <i>Optional content: local/simulator operation manuals, holding</i>	APS ACS
APS ATM 6.5.3	Provide horizontal separation by vectoring in a variety of situations.	4	<i>Optional content: transit, meteorological phenomena, vectoring for approach, departure versus transit versus arrival</i>	APS ACS
APS ATM 6.5.4	Ensure horizontal or vertical separation from airspace boundaries.	4	Adjacent sectors, restricted, prohibited and danger areas, TSAs, TRAs	APS ACS

TOPIC ATM 7 — AIRBORNE AND GROUND-BASED SAFETY NETS				
Subtopic ATM 7.1 — Airborne safety nets				
APS ATM 7.1.1	Recognise the independence of ACAS thresholds and ATC separation standards.	1	ICAO Doc 9863 <i>Optional content: Skybrary Safety Nets</i>	ALL
APS ATM 7.1.2	Describe the controller responsibility during and following an ACAS RA reported by pilot.	2	Regulation (EU) 923/2012 <i>Optional content: ICAO Doc 4444, ICAO Doc 9863, Skybrary Safety Nets</i>	ALL

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TOPIC ATM 7 — AIRBORNE AND GROUND-BASED SAFETY NETS				
APS ATM 7.1.3	Respond to pilot notification of actions based on airborne systems warnings.	3	ACAS, <i>Optional content:</i> TAWS, Skybrary Safety Nets	APP APS ACP ACS
Subtopic ATM 7.2 — Ground-based safety nets				
APS ATM 7.2.1	Describe the controller responsibility during and following safety net warnings.	2	Regulation (EU) 2017/373 <i>Optional content:</i> ICAO Doc 4444, STCA, MSAW, APW, APM	APS ACS
APS ATM 7.2.2	Respond to ground-based safety net warnings.	3	<i>Optional content:</i> STCA, MSAW, APW, APM	APS ACS
TOPIC ATM 8 — DATA DISPLAY				
Subtopic ATM 8.1 — Data management				
APS ATM 8.1.1	Update the data display to accurately reflect the traffic situation.	3	<i>Optional content:</i> information displayed, strip-marking procedures, electronic information data displays, actions based on traffic display information, calculation of EETs	ALL
APS ATM 8.1.2	Analyse pertinent data on data displays.	4		ALL
APS ATM 8.1.3	Organise pertinent data on data displays.	4		ALL
APS ATM 8.1.4	Obtain flight plan information.	3	CPL, supplementary information <i>Optional content:</i> FPL, RPL, AFIL, etc.	ALL
APS ATM 8.1.5	Use flight plan information.	3		ALL

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TOPIC ATM 9 — OPERATIONAL ENVIRONMENT (SIMULATED)				
Subtopic ATM 9.1 — Integrity of the operational environment				
APS ATM 9.1.1	Obtain information concerning the operational environment.	3	<i>Optional content: local/simulator operation manuals, briefing, notices, current flight plan data/information displays, pilot reports, coordination, verification of information</i>	ALL
APS ATM 9.1.2	Ensure the integrity of the operational environment.	4	<i>Optional content: integrity of displays, verification of the information provided by displays, etc.</i>	APP ACP APS ACS
Subtopic ATM 9.2 — Verification of the currency of operational procedures				
APS ATM 9.2.1	Check all relevant documentation before managing traffic.	3	<i>Optional content: briefing, letters of agreement (LoAs), NOTAMs, AICs</i>	ALL
APS ATM 9.2.2	Manage traffic in accordance with a change to operational procedures.	4		APP ACP APS ACS
Subtopic ATM 9.3 — Handover–takeover				
APS ATM 9.3.1	Transfer information to the relieving controller.	3		ALL
APS ATM 9.3.2	Obtain information from the controller handing over.	3		ALL
APS ATM 9.3.3	List possible actions to provide a safe position handover-takeover.	1	<i>Optional content: rigour, preparation, overlap time</i>	ALL
APS ATM 9.3.4	Explain consequences of a missed position handover-takeover process.	2		ALL

TOPIC ATM 10 — PROVISION OF CONTROL SERVICE				
Subtopic ATM 10.1 — Responsibility for the provision of control service and processing of information				
APS ATM 10.1.1	Describe the division of responsibility among air traffic control units.	2	Regulation (EU) 2017/373 <i>Optional content: ICAO Doc 4444</i>	ALL
APS ATM 10.1.2	Describe the responsibility of civil ATCOs in regard to military traffic.	2	ICAO Doc 4444 <i>Optional content: ICAO Doc 9554</i>	ALL
APS ATMMIL 10.1.2.1	Describe the responsibility of military ATCOs in regard to civil traffic.	2	ICAO Doc 4444 <i>Optional content: ICAO Doc 9554, national regulations or directives</i>	ALL
APS ATM 10.1.3	Describe the responsibility in regard to unmanned free balloons.	2	Regulation (EU) No 923/2012	ALL
APS ATM 10.1.4	Interpret operational information.	5		APP ACP APS ACS

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TOPIC ATM 10 — PROVISION OF CONTROL SERVICE				
APS ATM 10.1.5	Organise forwarding of operational information.	4	<i>Optional content: including the use of backup procedures</i>	APP ACP APS ACS
APS ATM 10.1.6	Integrate operational information into control decisions.	4		APP ACP APS ACS
APS ATM 10.1.7	Appreciate the influence of operational requirements.	3	Specific military flying requirements <i>Optional content: calibration flights, aerial photography</i>	
Subtopic ATM 10.2 — ATS surveillance service				
APS ATM 10.2.1	Explain the responsibility for the provision of ATS surveillance service appropriate to APS rating.	2	Regulation (EU) No 923/2012, Regulation (EU) 2017/373 <i>Optional content: local/simulator operation manuals, TRA service</i>	APS
APS ATM 10.2.2	Explain the functions that may be performed with the use of ATS surveillance system derived information presented on a situation display.	2	Regulation (EU) 2017/373	APS ACS
APS ATM 10.2.3	Provide planning, coordination and control actions appropriate to VFR, SVFR and IFR traffic in VMC and IMC.	4	Regulation (EU) No 923/2012, Regulation (EU) 2017/373, ICAO Doc 4444, military regulations and directives <i>Optional content: TRA service</i>	APS APP
APS ATM 10.2.4	Apply the procedures for termination of ATS surveillance service.	3	Regulation (EU) 2017/373 <i>Optional content: ICAO Doc 4444, transfer of control, termination or interruption of ATS surveillance service</i>	APS ACS
Subtopic ATM 10.3 — Traffic management process				
APS ATM 10.3.1	Ensure that situational awareness is maintained.	4	Information gathering, scanning, traffic projection	APS ACS
APS ATM 10.3.2	Detect conflicts in time for appropriate resolution.	4		ALL
APS ATM 10.3.3	Identify potential solutions to achieve a safe and effective traffic flow.	3		APP ACP APS ACS
APS ATM 10.3.4	Evaluate possible outcomes of different planning and control actions.	5		ALL
APS ATM 10.3.5	Select an appropriate plan in time to achieve safe and effective traffic flow.	5		APP ACP APS ACS
APS ATM 10.3.6	Ensure an adequate priority of actions.	4		ALL

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TOPIC ATM 10 — PROVISION OF CONTROL SERVICE				
APS ATM 10.3.7	Execute the selected plan in a timely manner.	3		ALL
APS ATM 10.3.8	Ensure that a safe and efficient outcome is achieved.	4	Traffic monitoring, adaptability and follow-up	ALL
Subtopic ATM 10.4 — Handling traffic				
APS ATM 10.4.1	Manage arrivals, departures and overflights.	4	<i>Optional content: simulator operation procedures, military procedures</i>	APP ACP APS ACS
APS ATM 10.4.2	Balance the workload against personal capacity.	5	<i>Optional content: rerouting, replanning, prioritising solutions, denying requests, delegating responsibility for separation</i>	APP ACP APS ACS
APS ATM 10.4.3	Define flight path monitoring and vectoring.	1	Regulation (EU) 2017/373	APS ACS
APS ATM 10.4.4	Explain the requirements for vectoring and termination of vectoring.	2	ICAO Doc 4444, Regulation (EU) 2017/373	APS ACS
APS ATM 10.4.5	Provide vectoring.	4	Regulation (EU) No 923/2012, Regulation (EU) 2017/373 <i>Optional content: separation, expediting arrivals, departures and/or climb to cruising levels, aircraft leaving the hold, navigation assistance, uncontrolled airspace, etc.</i>	APS ACS
APS ATM 10.4.6	Apply the procedures for termination of vectoring.	3	Regulation (EU) No 923/2012, Regulation (EU) 2017/373	APS ACS
APS ATM 10.4.7	Manage traffic on different types of approaches.	4	Precision, non-precision, visual	APP APS
APS ATM 10.4.8	Initiate missed approach.	3	Regulation (EU) No 923/2012, Regulation (EU) 2017/373 <i>Optional content: Skybrary</i>	APP APS
APS ATM 10.4.9	Integrate aircraft on missed approach into the traffic situation.	4		APP APS
APS ATMMIL 10.4.10	Apply military procedures	3	<i>Optional content: formation flights, radar trail procedures, join-up, split-up, MARSAs, fuel jettison, SFO, etc.</i>	ADC APS APP
APS ATMMIL 10.4.11	Apply RPAS procedures	3	Contingency procedure (e.g. loss of link, loss of communication), pre-planned automated profiles	ALL

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TOPIC ATM 10 — PROVISION OF CONTROL SERVICE				
Subtopic ATM 10.5 — Control service with advanced system support				
APS ATM 10.5.1	Appreciate the impact of advanced systems on the provision of approach control service.	3	<i>Optional content: sequencing systems, arrival management, departure management, automated holding lists, vertical traffic displays, conflict detection and decision-making tools, automated information and coordination tools</i>	APS

TOPIC ATM 11 — HOLDING				
Subtopic ATM 11.1 — General holding procedures				
APS ATM 11.1.1	Apply holding procedures.	3	ICAO Doc 4444, Regulation (EU) No 923/2012, Regulation (EU) 2017/373, holding instructions, allocation of holding levels, onward clearance times	APP ACP APS ACS
APS ATM 11.1.2	Appreciate the factors affecting holding patterns.	3	Effect of speed, effect of level used, effect of navigation aid in use, weather phenomena, turbulence, aircraft type, aircraft configuration	APP ACP APS ACS
Subtopic ATM 11.2 — Approaching aircraft				
APS ATM 11.2.1	Issue Expected Approach Times (EATs).	3		APP APS
APS ATM 11.2.2	Organise the traffic landing sequence in a holding pattern.	4	<i>Optional content: company preference, aircraft performance, aircraft approach capability, ILS categories, flow control management, military procedures and specificities</i>	APP APS
Subtopic ATM 11.3 — Holding in a surveillance environment				
APS ATM 11.3.1	Organise traffic to separate other aircraft from holding aircraft.	4		APS ACS
APS ATM 11.3.2	Integrate system support, when available.	4	<i>Optional content: arrival management system, automated holding lists, vertical traffic displays</i>	APS ACS

TOPIC ATM 12 — IDENTIFICATION				
Subtopic ATM 12.1 — Establishment of identification				
APS ATM 12.1.1	Appreciate the precautions when establishing identification.	3		APS ACS
APS ATM 12.1.2	Identify aircraft.	3	<i>Optional content: PSR, SSR or ADS identification method</i>	APS ACS
APS ATM 12.1.3	Apply the procedures in the case of misidentification.	3	ICAO Doc 4444, Regulation (EU) 2017/373 <i>Optional content: local/simulator operation manuals</i>	APS ACS
Subtopic ATM 12.2 — Maintenance of identification				
APS ATM 12.2.1	Appreciate the necessity to maintain identification.	3		APS ACS

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TOPIC ATM 12 — IDENTIFICATION				
Subtopic ATM 12.3 — Loss of identity				
APS ATM 12.3.1	Appreciate when an aircraft identification is lost or in doubt.	3	<i>Optional content: out of ATS surveillance system coverage, failure of ATS surveillance system, weather clutter, other clutter, garbling, holding, military procedures (e.g. formation flights), etc.</i>	APS ACS
APS ATM 12.3.2	Apply methods to re-establish identification.	3		APS ACS
APS ATM 12.3.3	Respond to loss/doubt concerning identification.	3	<i>Optional content: procedural separation</i>	APS ACS
Subtopic ATM 12.4 — Position information				
APS ATM 12.4.1	Appreciate the circumstances when position information should be passed on to aircraft.	3		APS ACS
APS ATM 12.4.2	State the format in which position information can be passed on to aircraft.	1	Regulation (EU) 2017/373	APS ACS
Subtopic ATM 12.5 — Transfer of identity				
APS ATM 12.5.1	Apply methods of transfer of identification.	3		APS ACS
APS ATM 12.5.2	Appreciate the precautions when transferring identification.	3		APS ACS

SUBJECT 4: METEOROLOGY

TOPIC MET 1 — METEOROLOGICAL PHENOMENA				
Subtopic MET 1.1 — Meteorological phenomena				
APS MET 1.1.1	Appreciate the impact of adverse weather on aircraft.	3	Thunderstorms, icing, clear-air turbulence (CAT), turbulence, microburst, wind shear, severe mountain waves, squall lines, volcanic ash	APP APS
APS MET 1.1.2	Integrate data about meteorological phenomena into the provision of ATS.	4	Clearances, instructions and transmitted information <i>Optional content: relevant meteorological phenomena</i>	ALL
APS MET 1.1.3	Use techniques to avoid adverse weather when necessary/possible.	3	Rerouting, level change, etc.	APP ACP APS ACS

TOPIC MET 2 — SOURCES OF METEOROLOGICAL DATA				
Subtopic MET 2.1 — Sources of meteorological information				
APS MET 2.1.1	Obtain meteorological information.	3	METAR, TAF, SIGMET, AIRMET <i>Optional content: AIREP/special AIREP, pilot reports</i>	APP ACP APS ACS
APS MET 2.1.2	Decode information from meteorological data displays.	3		ALL
APS MET 2.1.3	Relay meteorological information.	3	ICAO Doc 4444, Regulation (EU) No 923/2012 <i>Optional content: flight information centre, adjacent ATS unit</i>	ALL

SUBJECT 5: NAVIGATION

TOPIC NAV 1 — MAPS AND AERONAUTICAL CHARTS				
Subtopic NAV 1.1 — Maps and charts				
APS NAV 1.1.1	Decode symbols and information displayed on aeronautical maps and charts.	3	Instrument approach charts, SID & STAR charts, aerodrome charts, military maps and charts <i>Optional content: visual approach charts, military maps and charts</i>	ADC APP APS
APS NAV 1.1.2	Use relevant maps and charts.	3		ALL
TOPIC NAV 2 — INSTRUMENT NAVIGATION				
Subtopic NAV 2.1 — Navigational systems				
APS NAV 2.1.1	Manage traffic in case of change in the operational status of navigational systems.	4	<i>Optional content: limitations, availability and status of ground-based and satellite-based systems</i>	APP ACP APS ACS
APS NAV 2.1.2	Appreciate the effect of a change in the operational status of navigational systems.	3	<i>Optional content: precision, limitations, status, degraded procedures</i>	ALL
Subtopic NAV 2.2 — Stabilised approach				
APS NAV 2.2.1	Describe the concept of stabilised approach.	2	<i>Optional content: Skybrary</i>	ADC APP APS
APS NAV 2.2.2	Appreciate the effect of late change of runway-in-use or type of approach for landing aircraft.	3	Cockpit workload <i>Optional content: impact on vertical profile (CDO), FMS management, crew procedure briefing, missed approach, loss of situational awareness, etc.</i>	APP APS
APS NAV 2.2.3	Appreciate controller actions that may contribute to an unstabilised approach.	3	Inappropriate speed control, vectoring for short final, vectoring for approach with significant tailwind, glide path interception from above, lack or incorrect distance to touchdown information, delayed descent, incorrect use of 'DIRECT TO'	APS
Subtopic NAV 2.3 — Instrument departures and arrivals				
APS NAV 2.3.1	Describe relevant SIDs and STARs.	2		APP APS
APS NAV 2.3.2	Describe the types and phases of instrument approach procedures.	2	Regulation (EU) 2017/373, ICAO Annex 6 <i>Optional content: military procedures (e.g. formation flights)</i>	ADC APP APS
APS NAV 2.3.3	Describe the relevant minima applicable for a precision/non-precision and visual approach.	2	<i>Optional content: Type A/B operations, CAT I/II/III criteria, LNAV, LNAV/VNAV, LPV, RNP AR APCH minima, TACAN procedures, GCA/PAR/SRA(PPI).</i>	ADC APP APS
Subtopic NAV 2.4 — Navigational assistance				

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TOPIC NAV 2 — INSTRUMENT NAVIGATION				
APS NAV 2.4.1	Evaluate the necessary information to be provided to pilots in need of navigational assistance.	5	<i>Optional content: nearest most suitable aerodrome, track, heading, distance, aerodrome information, any other navigational assistance relevant at the time</i>	APP ACP APS ACS
APS NAV 2.4.2	Assist pilots with navigation when required.	3	Aircraft observed to be deviating from their known intended route, on pilots' request	APS ACS
Subtopic NAV 2.5 — Satellite-based systems				
APS NAV 2.5.1	State the different applications of satellite-based systems relevant for approach operations.	1	RNP APCH, RNP AR APCH, SBAS, GBAS <i>Optional content: LNAV, LNAV/VNAV LPV, RNP minima, precision approach</i>	APP APS
Subtopic NAV 2.6 — PBN applications				
APS NAV 2.6.1	State the navigation applications used in approach and terminal environments.	1	Approach-RNP APCH/ RNP AR APCH, Terminal-RNAV-1 RNP 1 with RF, rotorcraft option RNP 0.3 <i>Optional content: ICAO Doc 9613, Regulation (EU) No 716/2014¹, Regulation (EU) 2018/1048²</i>	APP APS
APS NAV 2.6.2	Explain the principles and designation of navigation specifications in use.	2	Performance, functionalities, sensors <i>Optional content: aircrew and controller requirements, accuracy requirements, integrity and continuity</i>	APP ACP APS ACS
APS NAV 2.6.3	Describe differences in turn performances.	2	<i>Optional content: fly by, fly over, RF, ICAO Doc 4444</i>	APP APS
APS NAV 2.6.4	State future PBN developments.	1	A-RNP, RNP (AR) DEP <i>Optional content: RNP 3D, VNAV, RNP 4D, TBO</i>	ALL

¹ Commission Implementing Regulation (EU) No 716/2014 of 27 June 2014 on the establishment of the Pilot Common Project supporting the implementation of the European Air Traffic Management Master Plan (OJ L 190, 28.6.2014, p. 19).

² Commission Implementing Regulation (EU) 2018/1048 of 18 July 2018 laying down airspace usage requirements and operating procedures concerning performance-based navigation (OJ L 189, 26.7.2018, p. 3).

SUBJECT 6: AIRCRAFT

TOPIC ACFT 1 — AIRCRAFT INSTRUMENTS				
Subtopic ACFT 1.1 — Aircraft instruments				
APS ACFT 1.1.1	Integrate information from aircraft instruments provided by the pilot into the provision of ATS.	4	<i>Optional content: aircraft radar information</i>	ALL
APS ACFT 1.1.2	Explain the operation of aircraft radio equipment.	2	<i>Optional content: radios (number of), emergency radios</i>	ALL
APS ACFT 1.1.3	Explain the operation of on-board surveillance equipment.	2	Transponders: equipment Mode A, Mode C, Mode S, ADS capability	ADC APS ACS
TOPIC ACFT 2 — AIRCRAFT CATEGORIES				
Subtopic ACFT 2.1 — Wake turbulence				
APS ACFT 2.1.1	Explain the wake turbulence effect and associated hazards to succeeding aircraft.	2		ALL
APS ACFT 2.1.2	Appreciate the techniques used to prevent hazards associated with wake turbulence to succeeding aircraft.	3		ALL
Subtopic ACFT 2.2 — Application of ICAO approach categories				
APS ACFT 2.2.1	Describe the use of ICAO approach categories.	2	ICAO Doc 8168	ADC APP APS
APS ACFT 2.2.2	Appreciate the effect of ICAO approach categories on the traffic organisation.	3		ADC APP APS
TOPIC ACFT 3 — FACTORS AFFECTING AIRCRAFT PERFORMANCE				
Subtopic ACFT 3.1 — Climb factors				
APS ACFT 3.1.1	Integrate the influence of factors affecting aircraft during climb.	4	<i>Optional content: speed, mass, air density, cabin pressurisation, wind and temperature, aircraft configuration</i>	APP ACP APS ACS
APS ACFT 3.1.2	Describe the influence of factors affecting departing aircraft.	3	<i>Optional content: runway conditions, runway slope, aerodrome elevation, wind, temperature, aircraft configuration, airframe contamination and aircraft mass</i>	APP APS
Subtopic ACFT 3.2 — Cruise factors				
APS ACFT 3.2.1	Integrate the influence of factors affecting aircraft during cruise.	4	<i>Optional content: level, cruising speed, wind, mass, cabin pressurisation, aircraft configuration</i>	APP APS
Subtopic ACFT 3.3 — Descent and initial approach factors				
APS ACFT 3.3.1	Integrate the influence of factors affecting aircraft during descent.	4	<i>Optional content: wind, speed, rate of descent, aircraft configuration, cabin pressurisation</i>	APP APS
Subtopic ACFT 3.4 — Final approach and landing factors				

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TOPIC ACFT 3 — FACTORS AFFECTING AIRCRAFT PERFORMANCE				
APS ACFT 3.4.1	Integrate the influence of factors affecting aircraft during final approach and landing.	4	<i>Optional content: wind, aircraft configuration, mass, meteorological conditions, runway conditions, runway slope, aerodrome elevation, speed (e.g. for arresting systems), specific military procedures</i>	APP APS
Subtopic ACFT 3.5 — Economic factors				
APS ACFT 3.5.1	Integrate consideration of economic factors affecting aircraft.	4	<i>Optional content: routing, level, speed, rate of climb and rate of descent, approach profile</i>	APP APS
APS ACFT 3.5.2	Provide continuous climb/descent whenever possible.	4		APS ACS
APS ACFT 3.5.3	Use direct routing where applicable.	3		APS APP ACP ACS
APS ACFT 3.5.4	Appreciate controller's actions that may contribute to pilot's ability to fly an optimum continuous descent.	3	<i>Optional content: level instructions, speed control, vertical speed control, vectoring, distance-to-touchdown information</i>	APS ACS
Subtopic ACFT 3.6 — Environmental factors				
APS ACFT 3.6.1	Appreciate the performance restrictions due to environmental considerations.	3	<i>Optional content: fuel-dumping, noise-abatement procedures, minimum flight levels, bird strike hazard, continuous descent operations</i>	APP APS
Subtopic ACFTMIL 3.7 — Operational factors				
APS ACFTMIL 3.7.1	Appreciate the performance restrictions due to operational factors.	3	<i>Optional content: use of chaffs, supersonic, FCAS, formation flights, etc.</i>	ALL
TOPIC ACFT 4 — AIRCRAFT DATA				
Subtopic ACFT 4.1 — Performance data				
APS ACFT 4.1.1	Integrate the average performance data of a representative sample of aircraft which will be encountered in the operational/ working environment into the provision of control service.	4	Performance data under a representative variety of circumstances	ALL

SUBJECT 7: HUMAN FACTORS

TOPIC HUM 1 — INFORMATION PROCESSING				
Subtopic HUM 1.1 — Cognition and factors influencing it				
APS HUM 1.1.1	Describe the human information-processing model.	2	Attention, perception, memory, situational awareness, decision-making, response	ALL
APS HUM 1.1.2	Describe the factors which influence human information-processing.	2	Confidence, stress, learning, knowledge, experience, fatigue, alcohol/drugs, distraction, interpersonal relations	ALL
Subtopic HUM 1.2 — Situational awareness				
APS HUM 1.2.1	Appreciate the effect of human information-processing factors on situational awareness.	3	Optional content: workload, knowledge, interpersonal relations, distraction, confidence, experience, fatigue, stress	ALL
Subtopic HUM 1.3 — Decision-making				
APS HUM 1.3.1	Appreciate the effect of human information-processing factors on decision-making.	3	Optional content: workload, stress, interpersonal relations, distraction, confidence	ALL
TOPIC HUM 2 — FACTORS AFFECTING HEALTH AND WELL-BEING				
Subtopic HUM 2.1 — Fatigue				
APS HUM 2.1.1	Describe the onset of fatigue.	2	Regulation (EU) 2017/373 Optional content: lack of concentration, listlessness, irritability, frustration, Skybrary Human Behaviour: EUROCONTROL Fatigue and sleep management	ALL
APS HUM 2.1.2	Recognise the onset of fatigue in self and in others.	1	Optional content: Skybrary Human Behaviour: EUROCONTROL Fatigue and sleep management	ALL
APS HUM 2.1.3	Describe appropriate action when recognising fatigue.	2	Optional content: Skybrary Human Behaviour: EUROCONTROL Fatigue and sleep management	ALL
Subtopic HUM 2.2 — Stress				
APS HUM 2.2.1	Recognise the effects of stress on performance.	1	Stress and its symptoms in self and in others Optional content: Regulation (EU) 2017/373	ALL
APS HUM 2.2.2	Describe appropriate action when recognising stress.	2		ALL
APS HUM 2.2.3	Act to reduce stress.	3		ALL
APS HUM 2.2.4	Respond to stressful situation by offering, asking or accepting assistance.	3		ALL
APS HUM 2.2.5	Recognise the effect of stressful events.	1	Self and others, abnormal situations	ALL

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TOPIC HUM 3 — THREAT AND ERROR MANAGEMENT				
Subtopic HUM 3.1 — Threat and error management framework				
APS HUM 3.1.1	Explain the importance of threat and error management.	2	Optional content: prevention of incidents, safety improvement, revision of procedures and/or working practices	ALL
APS HUM 3.1.2	Explain the threat and error management framework.	2	Threats, errors, undesired states, countermeasures Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control	ALL
APS HUM 3.1.3	Differentiate threats in ATC.	2	Internal, external, airborne, environmental Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control	ALL
APS HUM 3.1.4	Differentiate errors in ATC.	2	Equipment, procedural, communication Optional content: increase in traffic, changes in procedures, complexities of systems or traffic, weather, unusual occurrences	ALL
APS HUM 3.1.5	Differentiate undesired states.	2	On the ground, airborne Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control	ALL
APS HUM 3.1.6	Analyse examples of threat and error management in ATC.	4	Case studies Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control	ALL
Subtopic HUM 3.2 — Applied threat and error management				
APS HUM 3.2.1	Manage threats.	4	Detect and respond Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control	ALL
APS HUM 3.2.2	Manage errors.	4	Detect and respond Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control	ALL
APS HUM 3.2.3	Manage undesired states.	4	Detect and respond Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control	ALL

TOPIC HUM 4 — TEAMWORK				
Subtopic HUM 4.1 — Benefits of teamwork				
APS HUM 4.1.1	State the benefits of teamwork.	1	Increased safety, efficiency and capacity	ALL
APS HUM 4.1.2	List the controller's human performance elements affected by teamwork.	1	Situational awareness, communication, decision making, threat and error management, workload management	ALL
Subtopic HUM 4.2 — Conflict management				

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TOPIC HUM 4 — TEAMWORK				
APS HUM 4.2.1	Identify reasons for conflict.	3		ALL
APS HUM 4.2.2	Describe strategies to cope with human conflicts.	2	Optional content: in your team, in the simulator	ALL
APS HUM 4.2.3	Describe actions to prevent human conflicts.	2		ALL

TOPIC HUM 5 — SYSTEMS				
Subtopic HUM 5.1 — Concept of systems in ATM/ANS				
APS HUM 5.1.1	Explain the concept of systems.	2	People, procedures, equipment, ATM in systems terms, simple; complicated and complex systems, system thinking	ALL
APS HUM 5.1.2	Describe how changes in one part of a system may impact the other parts.	2		ALL
APS HUM 5.1.3	Describe the role of the human in the system.	2		ALL

TOPIC HUM 6 — COMMUNICATION				
Subtopic HUM 6.1 — Effective communication				
APS HUM 6.1.1	Explain effective communication in ATC operations.	2	ICAO Doc 9868	ALL
APS HUM 6.1.2	Explain key strategies used to enable open communication.	2	Optional content: Active listening, active speaking, assertiveness, honesty, relevance, facts, neutrality	ALL
APS HUM 6.1.3	Describe parameters affecting the controller's communication competency.	2	Workload, mutual knowledge, controller versus pilot mental picture, distractions, sound, human conflicts Optional content: Communication between and in the team(s), in the simulator, with the pilots, instructors, coordination partners workload	ALL

TOPIC HUM 6 — COMMUNICATIONS				
Subtopic HUM 6.1 — Effective communication				
Subtopic HUM 6.2 — Effective feedback				
APS HUM 6.2.1	Define feedback.	1		ALL
APS HUM 6.2.2	Explain the purpose of receiving and giving feedback and its effect on performance.	2		ALL
APS HUM 6.2.3	Consider the impact of communication styles on feedback, and resolving conflicts.	2		ALL
APS HUM	Integrate feedback into performance.	4		ALL

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TOPIC HUM 6 — COMMUNICATION				
6.2.4				

SUBJECT 8: EQUIPMENT AND SYSTEMS

TOPIC EQPS 1 — VOICE COMMUNICATIONS				
Subtopic EQPS 1.1 — Radio communications				
APS EQPS 1.1.1	Operate two-way communication equipment.	3	Transmit/receive switches, procedures <i>Optional content: frequency selection, standby equipment</i>	ALL
APS EQPS 1.1.2	Identify indications of operational status of radio equipment.	3	<i>Optional content: indicator lights, serviceability displays, selector/frequency displays, encrypted radio frequency</i>	ALL
APS EQPS 1.1.3	Consider radio range.	2	<i>Optional content: transfer to another frequency, apparent radio failure, failure to establish radio contact, frequency protection range</i>	APP ACP APS ACS
Subtopic EQPS 1.2 — Other voice communications				
APS EQPS 1.2.1	Operate landline communications.	3	<i>Optional content: telephone, interphone and intercom equipment</i>	ALL

TOPIC EQPS 2 — AUTOMATION IN ATS				
Subtopic EQPS 2.1 — Aeronautical fixed telecommunication network (AFTN)				
APS EQPS 2.1.1	Decode AFTN messages.	3	<i>Optional content: movement and control messages, NOTAMs, SNOWTAMs, BIRDTAMs, etc.</i>	ALL
Subtopic EQPS 2.2 — Automatic data interchange				
APS EQPS 2.2.1	Use automatic data transfer equipment where available.	3	<i>Optional content: sequencing systems, automated information and coordination, OLDI</i>	ADC APS ACS

TOPIC EQPS 3 — CONTROLLER WORKING POSITION				
Subtopic EQPS 3.1 — Operation and monitoring of equipment				
APS EQPS 3.1.1	Monitor the technical integrity of the controller working position.	3	Notification procedures, responsibilities	ALL
APS EQPS 3.1.2	Operate the equipment of the controller working position.	3	<i>Optional content: situation displays, flight progress board, flight data display, radio, telephone, maps and charts, strip-printer, clock, information systems, UDF/VDF</i>	ALL
APS EQPS 3.1.3	Operate the available equipment in abnormal and emergency situations.	3		ALL
Subtopic EQPS 3.2 — Situation displays and information systems				
APS EQPS 3.2.1	Use situation displays.	3		ALL
APS EQPS 3.2.2	Check the availability of information.	3		ALL
APS EQPS 3.2.3	Obtain information from equipment.	3		APP ACP

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TOPIC EQPS 3 — CONTROLLER WORKING POSITION				
				APS ACS
Subtopic EQPS 3.3 — Flight data systems				
APS EQPS 3.3.1	Use the flight data information at the controller working position.	3		ALL
Subtopic EQPS 3.4 — Use of ATS surveillance system				
APS EQPS 3.4.1	Use the ATS surveillance system functions.	3		APS ACS
APS EQPS 3.4.2	Analyse the information provided by the ATS surveillance system.	4		APS ACS
APS EQPS 3.4.3	Assign codes.	4		APS ACS
APS EQPS 3.4.4	Appreciate the use of advanced surveillance technology.	3	Optional content: Mode S, ADS-B, MLAT, etc.	APS ACS
Subtopic EQPS 3.5 — Advanced systems				
APS EQPS 3.5.1	Appreciate the use of controller–pilot data link communications when available.	3		APS ACS
APS EQPS 3.5.2	Characterise the use of information provided by advanced systems.	2	MTCD, AMAN, DMAN Optional content: trajectory-based information, MONA, etc.	APS ACS
TOPIC EQPS 4 — FUTURE EQUIPMENT				
Subtopic EQPS 4.1 — New developments				
APS EQPS 4.1.1	Recognise future developments.	1	New advanced systems Optional content: European ATM Master Plan, European Plan for Aviation Safety	ALL
TOPIC EQPS 5 — EQUIPMENT AND SYSTEMS' LIMITATIONS AND DEGRADATION				
Subtopic EQPS 5.1 — Reaction to limitations				
APS EQPS 5.1.1	Take account of the limitations of equipment and systems.	2		ALL
APS EQPS 5.1.2	Respond to technical deficiencies of the operational position.	3	Notification procedures, responsibilities	ALL
Subtopic EQPS 5.2 — Communication equipment degradation				
APS EQPS 5.2.1	Identify that communication equipment has degraded.	3	Optional content: ground–air and landline communications	APP ACP APS ACS
APS EQPS 5.2.2	Apply contingency procedures in the event of communication equipment degradation.	3	Optional content: procedures for total or partial degradation of ground–air and landline communications, alternative methods of transferring data	ALL

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TOPIC EQPS 5 — EQUIPMENT AND SYSTEMS' LIMITATIONS AND DEGRADATION				
Subtopic EQPS 5.3 — Navigational equipment degradation				
APS EQPS 5.3.1	Identify when a navigational equipment failure will affect operational ability.	3	<i>Optional content: navigational aids, "European GNSS Contingency/Reversion Handbook for PBN Operations"</i>	ALL
APS EQPS 5.3.2	Apply contingency procedures in the event of a navigational equipment degradation.	3	<i>Optional content: vertical separation, information to aircraft, navigational assistance, seeking assistance from adjacent units</i>	ALL
Subtopic EQPS 5.4 — Surveillance equipment degradation				
APS EQPS 5.4.1	Identify that surveillance equipment has degraded.	3	<i>Partial power failure, loss of certain facilities, total failure</i>	APS ACS
APS EQPS 5.4.2	Apply contingency procedures in the event of surveillance equipment degradation.	3	<i>Optional content: inform adjacent sectors, inform aircraft, apply vertical separation (emergency), increased horizontal separation, reduce the number of aircraft entering area of responsibility, transfer aircraft to another unit</i>	APS ACS
Subtopic EQPS 5.5 — ATC processing system degradation				
APS EQPS 5.5.1	Identify a processing system degradation.	3	<i>Optional content: FDPS, SDPS, software processing of situation display</i>	APS ACS
APS EQPS 5.5.2	Apply contingency procedures in the event of a processing system degradation.	3		APS ACS

SUBJECT 9: PROFESSIONAL ENVIRONMENT

TOPIC PEN 1 — FAMILIARISATION				
Subtopic PEN 1.1 — Study visit to an approach control unit				
APS PEN 1.1.1	Appreciate the functions and provision of an operational approach control service.	3	Study visit to an approach control unit	APP APS
TOPIC PEN 2 — AIRSPACE USERS				
Subtopic PEN 2.1 — Contributors to civil ATS operations				
APS PEN 2.1.1	Characterise civil ATS activities in an approach control unit.	2	<i>Optional content: familiarisation visits to APP, TWR, ACC, AIM/AIS, RCC</i>	APP APS
APS PEN 2.1.2	Characterise other parties interfacing with civil ATS operations.	2	<i>Optional content: familiarisation visits to engineering services, firefighting and emergency services, airline operations offices</i>	ALL
Subtopic PEN 2.2 — Contributors to military ATS operations				
APS PEN 2.2.1	Characterise military ATS activities.	2	<i>Optional content: familiarisation visits to military APP, TWR, ACC, AIM/AIS, RCC, Air Defence Units</i>	ALL
TOPIC PEN 3 — CUSTOMER RELATIONS				
Subtopic PEN 3.1 — Provision of services and user requirements				
APS PEN 3.1.1	Appreciate the role of an air navigation service provider.	3	Regulation (EU) 2018/1139¹	ALL
APS PEN 3.1.2	Appreciate ATS users' requirements.	3		ALL
TOPIC PEN 4 — ENVIRONMENTAL PROTECTION				
Subtopic PEN 4.1 — Environmental protection				
APS PEN 4.1.1	Describe the environmental constraints on aerodrome operations.	2	<i>Optional content: ICAO Doc 10013 — Operational opportunities to reduce fuel burn and emissions, hot cargo parking</i>	ADC APP APS
APS PEN 4.1.2	Explain the use of the Collaborative Environmental Management (CEM) process at aerodromes.	2	<i>Optional content: European ATM Master Plan, EUROCONTROL CEM Specification</i>	ADC APP APS
APS PEN 4.1.3	Appreciate the mitigation techniques used to minimise aviation's impact on the environment.	3	<i>Optional content: continuous descent operations (CDO), continuous climb operations (CCO), noise-abatement procedures, noise preferential routes, flight efficiency</i>	APS

¹ Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91.

SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS

TOPIC ABES 1 — ABNORMAL AND EMERGENCY SITUATIONS (ABES)				
Subtopic ABES 1.1 — Overview of ABES				
APS ABES 1.1.1	List common abnormal and emergency situations.	1	Military abnormal and emergency situations (e.g. use of aircraft arresting systems, flame out procedures) <i>Optional content: EATM Guidelines for Controller Training in the Handling of Unusual/Emergency Situations, ambulance flights, ground-based safety nets alerts, airframe failure, unreliable instruments, runway incursion, GNSS failure</i>	ALL
APS ABES 1.1.2	Identify potential or actual abnormal and emergency situations.	3		ALL
APS ABES 1.1.3	Take into account the procedures for given abnormal and emergency situations.	2	ICAO Doc 4444, military procedures	APP ACP APS ACS
APS ABES 1.1.4	Take into account that procedures do not exist for all abnormal and emergency situations.	2	<i>Optional content: real-life examples</i>	ALL
APS ABES 1.1.5	Consider how the evolution of a situation may have an impact on safety.	2	<i>Optional content: separation, information, coordination</i>	ALL

TOPIC ABES 2 — SKILLS IMPROVEMENT				
Subtopic ABES 2.1 — Communication effectiveness				
APS ABES 2.1.1	Ensure effective communication in all circumstances including the case where standard phraseology is not applicable.	4	Phraseology, vocabulary, readback, radio silence instruction, military procedures	ALL
APS ABES 2.1.2	Apply change of radiotelephony call sign.	3	Regulation (EU) No 923/2012, ICAO Doc 4444 <i>Optional content: ICAO Doc 4444</i>	ALL
Subtopic ABES 2.2 — Avoidance of mental overload				
APS ABES 2.2.1	Describe actions to keep the situation under control.	2	<i>Optional content: sector-splitting, holding, flow management, task delegation</i>	ALL
APS ABES 2.2.2	Organise priority of actions.	4		ALL
APS ABES 2.2.3	Ensure the effective dissemination of information.	4	<i>Optional content: between executive and planner/coordinator, with the supervisor, between sectors, between ACC, APP and TWR and air defence units, with ground staff, etc.</i>	ALL
APS ABES 2.2.4	Consider asking for help.	2		ALL

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TOPIC ABES 2 — SKILLS IMPROVEMENT				
Subtopic ABES 2.3 — Air-ground cooperation				
APS ABES 2.3.1	Collect appropriate information relevant to the situation.	3		ALL
APS ABES 2.3.2	Assist the pilot.	3	Pilot workload <i>Optional content: instructions, information, support, human factors, etc.</i>	ALL
TOPIC ABES 3 — PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS (ABES)				
Subtopic ABES 3.1 — Application of procedures for ABES				
APS ABES 3.1.1	Apply the procedures for given abnormal and emergency situations.	3	Military abnormal and emergency situations (e.g. use of aircraft arresting systems, flame out procedures) <i>Optional content: EATM Guidelines for Controller Training in the Handling of Unusual/Emergency Situations, ambulance flights, ground-based safety nets alerts, airframe failure</i>	ALL
Subtopic ABES 3.2 — Radio failure				
APS ABES 3.2.1	Describe the procedures to be followed by a pilot when that pilot experiences complete or partial radio failure.	2	Regulation (EU) No 923/2012, ICAO Doc 4444, military procedures <i>Optional content: simulator operation procedures</i>	ALL
APS ABES 3.2.2	Apply the procedures to be followed when a pilot experiences complete or partial radio failure.	3	Regulation (EU) No 923/2012, military procedures <i>Optional content: prolonged loss of communication</i>	ALL
Subtopic ABES 3.3 — Unlawful interference and aircraft bomb threat				
APS ABES 3.3.1	Apply ATC procedures associated with unlawful interference and aircraft bomb threat.	3	Regulation (EU) No 923/2012 <i>Optional content: simulator operation procedures, military procedures</i>	ALL
Subtopic ABES 3.4 — Strayed or unidentified aircraft				
APS ABES 3.4.1	Apply the procedures for strayed aircraft.	3	Regulation (EU) No 923/2012, military procedures <i>Optional content: inside controlled airspace, outside controlled airspace</i>	ALL
APS ABES 3.4.2	Apply the procedures for unidentified aircraft.	3	Regulation (EU) No 923/2012, military procedures	ALL
Subtopic ABES 3.5 — Diversion				
APS ABES 3.5.1	Provide navigational assistance to aircraft diverting in emergency.	4	Track/heading, distance, other navigational assistance <i>Optional content: nearest most suitable aerodrome</i>	APP ACP APS ACS
Subtopic ABES 3.6 — Transponder failure				
APS ABES 3.6.1	Apply procedures in the event of an SSR transponder failure.	3	Regulation (EU) No 923/2012 <i>Optional content: total/partial failure, impact on ADS-B/Mode S capability</i>	APS ACS

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TOPIC ABES 3 — PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS (ABES)				
Subtopic ABES 3.7 — Interception of civil aircraft				
APS ABES 3.7.1	Explain the procedures in the event of interception of civil aircraft.	2	Regulation (EU) No 923/2012, military procedures	ALL
Subtopic ABESMIL 3.8 – QRA procedures				
APS ABESMIL 3.8.1	Apply the procedures in the event of interception of any aircraft.	3	Military procedures	ALL

SUBJECT 11: AERODROMES

TOPIC AGA 1 — AERODROME DATA, LAYOUT AND COORDINATION				
Subtopic AGA 1.1 — Definitions				
APS AGA 1.1.1	Define aerodrome data.	1	Regulation (EU) No 139/2014 ¹ , ICAO Annex 14, military regulations and directives <i>Optional content: aerodrome elevation, reference point, apron, movement area, manoeuvring area, hot spot</i>	ADC APP APS
Subtopic AGA 1.2 — Coordination				
APS AGA 1.2.1	Identify the information that has to be exchanged between Air Traffic Services (ATS) and the aerodrome authority.	3	Aerodrome conditions, fire/rescue category, condition of ground equipment and NAVAIDs, AIRAC, Regulation (EU) No 139/2014, ICAO Annex 14, military regulations and directives	ADC APP APS
TOPIC AGA 2 — MOVEMENT AREA				
Subtopic AGA 2.1 — Movement area				
APS AGA 2.1.1	Describe the movement area.	2	Regulation (EU) No 139/2014, ICAO Annex 14, arming areas	ADC APP APS
APS AGA 2.1.2	Describe the marking of obstacles and unusable or unserviceable areas.	2	Flags, signs on pavement, lights <i>Optional content: military regulations and directives</i>	ADC APP APS
APS AGA 2.1.3	Identify the information on conditions of the movement area that has to be passed on to aircraft.	3	Essential information on aerodrome conditions <i>Optional content: military regulations and directives</i>	ADC APP APS
Subtopic AGA 2.2 — Manoeuvring area				
APS AGA 2.2.1	Describe a manoeuvring area.	2	Regulation (EU) No 139/2014, ICAO Annex 14 <i>Optional content: military regulations and directives</i>	ADC APP APS
APS AGA 2.2.2	Describe a taxiway.	2	<i>Optional content: military regulations and directives</i>	ADC APP APS
APS AGA 2.2.3	Describe the daylight marking on taxiways.	2	<i>Optional content: military regulations and directives</i>	ADC APP APS
APS AGA 2.2.4	Describe taxiway lighting.	2	<i>Optional content: military regulations and directives</i>	ADC APP APS
Subtopic AGA 2.3 — Runways				

¹ Commission Regulation (EU) No 139/2014 of 12 February 2014 laying down requirements and administrative procedures related to aerodromes pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 44, 14.2.2014, p. 1).

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TOPIC AGA 2 — MOVEMENT AREA				
APS AGA 2.3.1	Describe the runway.	2	Runway, runway surface, runway strip, shoulder, runway-end safety areas, clearways, stopways, military marking requirements <i>Optional content: military regulations and directives</i>	ADC APP APS
APS AGA 2.3.2	Describe the instrument runway.	2	Regulation (EU) No 139/2014, ICAO Annex 14 <i>Optional content: military regulations and directives</i>	ADC APP APS
APS AGA 2.3.3	Describe the non-instrument runway.	2	Regulation (EU) No 139/2014, ICAO Annex 14 <i>Optional content: military regulations and directives</i>	ADC APP APS
APS AGA 2.3.4	Explain the declared distances.	2	TORA, TODA, ASDA, LDA <i>Optional content: military regulations and directives</i>	ADC APP APS
APS AGA 2.3.5	Explain the differences between ACN and PCN.	2	Strength of pavements <i>Optional content: ACR and PCR</i>	ADC APP APS
APS AGA 2.3.6	Describe the daylight markings on runways.	2	<i>Optional content: runway designator, centre line, threshold, aiming point, fixed distance, touchdown zone, side strip, colour, military regulations and directives</i>	ADC APP APS
APS AGA 2.3.7	Describe runway lights.	2	<i>Optional content: colour, centre line, intensity, edge, touchdown zone, threshold, barettes, military regulations and directives</i>	ADC APP APS
APS AGA 2.3.8	Explain the functions of visual landing aids.	2	<i>Optional content: AVASI, VASI, PAPI</i>	ADC APP APS
APS AGA 2.3.9	Describe the approach lighting systems.	2	Centre line, cross bars, stroboscopic lights, colours, intensity and brightness <i>Optional content: military regulations and directives</i>	ADC APP APS
APS AGA 2.3.10	Characterise the effect of water/ice on runways.	2		ADC APP APS
APS AGA 2.3.11	Explain braking performance and methods of reporting it.	2		ADC APP APS
APS AGA 2.3.12	Explain the effect of runway visual range on aerodrome operation.	2		ADC APP APS
Subtopic AGAMIL 2.4 — Aircraft arresting systems				
APS AGAMIL 2.4.1	Describe the available aircraft arresting systems and related markings	2		ADC APP APS

TOPIC AGA 3 — OBSTACLES

Subtopic AGA 3.1 — Obstacle-free airspace around aerodromes

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TOPIC AGA 3 — OBSTACLES				
APS AGA 3.1.1	Explain the necessity for establishing and maintaining airspace around aerodromes obstacle-free .	2		ADC APP APS

TOPIC AGA 4 — MISCELLANEOUS EQUIPMENT				
Subtopic AGA 4.1 — Location				
APS AGA 4.1.1	Explain the location of miscellaneous aerodrome ground equipment.	2	<i>Optional content: LOC, GP, VDF, radio communication or ATS surveillance systems sensors, stopbars, AVASI, VASI, PAPI, specific military equipment (e.g. TACAN, GCA Antennas, arresting systems)</i>	ADC APP APS