



## **MILITARY AIR TRAFFIC CONTROLLER INITIAL TRAINING**

**Initial rating training composition document  
Area Control Surveillance (ACS)**

|                       |                   |
|-----------------------|-------------------|
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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.

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\* 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 ACS RATING TRAINING:

For reference use: AMC1 ATCO.D.010(a)(2)(v) Composition of initial ACS rating training<sup>1</sup>

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 Area Control Surveillance (ACS) Rating training should contain the following subjects, topics, subtopics and training objectives using as baseline the subjects, topics and subtopics contained in Appendix 7 to Annex I of amended Commission Regulation (EU) 2015/340 —Area Control Surveillance 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)(vi) 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 ACS Rating Training content to take into account the specific training requirements of Military ATCOs.

The composition of the Military ATCO Initial ACS 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.

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<sup>1</sup> 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                       |                                                                 |   |                                                                                                                         |     |
| ACS INTR 1.1.1                                                | Explain the aims and main objectives of the course.             | 2 |                                                                                                                         | ALL |
| Subtopic INTR 1.2 — Course administration                     |                                                                 |   |                                                                                                                         |     |
| ACS INTR 1.2.1                                                | State how the course is administered.                           | 1 |                                                                                                                         | ALL |
| Subtopic INTR 1.3 — Study material and training documentation |                                                                 |   |                                                                                                                         |     |
| ACS INTR 1.3.1                                                | Use appropriate documents and their sources for course studies. | 3 | <i>Optional content: training documentation, library, CBT library, web, learning management server</i>                  | ALL |
| ACS INTR 1.3.2                                                | Integrate appropriate information into course studies.          | 4 | <b>Training documentation</b><br><i>Optional content: supplementary information, library</i>                            | ALL |
| TOPIC INTR 2 — INTRODUCTION TO THE ATC TRAINING COURSE        |                                                                 |   |                                                                                                                         |     |
| Subtopic INTR 2.1 — Course content and organisation           |                                                                 |   |                                                                                                                         |     |
| ACS INTR 2.1.1                                                | State the different training methods used during the course.    | 1 | <b>Theoretical training, practical training, self-study, types of training events</b>                                   | ALL |
| ACS INTR 2.1.2                                                | State the subjects covered by the course and their purpose.     | 1 |                                                                                                                         | ALL |
| ACS INTR 2.1.3                                                | Describe the organisation of theoretical training.              | 2 | <i>Optional content: course programme</i>                                                                               | ALL |
| ACS INTR 2.1.4                                                | Describe the organisation of practical training.                | 2 | <i>Optional content: PTP, simulation, briefing, debriefing, course programme</i>                                        | ALL |
| Subtopic INTR 2.2 — Training ethos                            |                                                                 |   |                                                                                                                         |     |
| ACS INTR 2.2.1                                                | Recognise the feedback mechanisms available.                    | 1 | <b>Training progress, assessment, briefing, debriefing, learner–instructor feedback, instructor–instructor feedback</b> | ALL |
| Subtopic INTR 2.3 — Assessment process                        |                                                                 |   |                                                                                                                         |     |
| ACS 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           |                                                                                                                           |   |                                                                                                                                                                                                                                                                                        |     |
| ACS<br>LAW<br>1.1.1                                    | Appreciate the conditions which shall be met to issue an Area Control Surveillance rating.                                | 3 | Regulation (EU) 2015/340 <sup>1</sup><br><i>Optional content: national documents</i>                                                                                                                                                                                                   | ACS |
| ACS<br>LAW<br>1.1.2                                    | Explain how to maintain and update professional knowledge and skills to retain competence in the operational environment. | 2 |                                                                                                                                                                                                                                                                                        | ALL |
| ACS<br>LAW<br>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                             |                                                                                                                           |   |                                                                                                                                                                                                                                                                                        |     |
| ACS<br>LAW<br>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 <sup>2</sup> , Regulation (EU) 2015/1018 <sup>3</sup><br><i>Optional content: breach of regulations, watchbook/logbook, records, voluntary reporting, military specific reports</i> | ALL |
| ACS<br>LAW<br>2.1.2                                    | Use forms for reporting.                                                                                                  | 3 | Regulation (EU) No 376/2014, mandatory and voluntary occurrence reporting forms<br><i>Optional content: routine air-reports, breach of regulations, watchbook/logbook, records, military specific reports</i>                                                                          | ALL |
| Subtopic LAW 2.2 — Airspace                            |                                                                                                                           |   |                                                                                                                                                                                                                                                                                        |     |
| ACS<br>LAW<br>2.2.1                                    | Appreciate airspace classes and structure and their relevance to operations using the Area Control Surveillance rating.   | 3 |                                                                                                                                                                                                                                                                                        | ACS |
| ACS<br>LAW<br>2.2.2                                    | Provide planning, coordination and control actions appropriate to the classification and structure of airspace.           | 4 | Military requirements, areas of responsibility<br><i>Optional content: Regulation (EU) No 923/2012<sup>4</sup>, international requirements,</i>                                                                                                                                        | ALL |

<sup>1</sup> 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).

<sup>2</sup> 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).

<sup>3</sup> 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).

<sup>4</sup> 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> |     |
| ACS<br>LAW<br>2.2.3                 | Appreciate responsibility for terrain clearance. | 3 |                                                                 | ALL |

| TOPIC LAW 3 — <b>ATS</b> SAFETY MANAGEMENT |                                                                                                             |   |                                                                                         |     |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------|-----|
| Subtopic LAW 3.1 — Feedback process        |                                                                                                             |   |                                                                                         |     |
| ACS<br>LAW<br>3.1.1                        | State the importance of controller contribution to the feedback process.                                    | 1 | <i>Optional content: voluntary reporting</i>                                            | ALL |
| ACS<br>LAW<br>3.1.2                        | Describe how reported occurrences are analysed.                                                             | 2 | <i>Optional content: Regulation (EU) No 376/2014, local procedures</i>                  | ALL |
| ACS<br>LAW<br>3.1.3                        | Name the means used to disseminate recommendations.                                                         | 1 | <i>Optional content: safety letters, safety boards web pages</i>                        | ALL |
| ACS<br>LAW<br>3.1.4                        | Appreciate the 'Just Culture' concept.                                                                      | 3 | <b>Benefits, prerequisites, constraints</b><br><i>Optional content: <b>Skybrary</b></i> | ALL |
| Subtopic LAW 3.2 — Safety investigation    |                                                                                                             |   |                                                                                         |     |
| ACS<br>LAW<br>3.2.1                        | Describe <b>the</b> role and <b>objectives</b> of <b>safety</b> 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                                                          |                                                                               |   |                                                                                                                                                                                                          |                          |
| ACS<br>ATM<br>1.1.1                                                                                           | Appreciate own area of responsibility.                                        | 3 |                                                                                                                                                                                                          | APP<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>1.1.2                                                                                           | Provide area control service.                                                 | 4 | Regulation (EU) No 923/2012, Regulation (EU) 2017/373, operating procedures for the simulated/training environment                                                                                       | ACP<br>ACS               |
| Subtopic ATM 1.2 — Flight information service (FIS) and Military Radar Information Service (RIS) <sup>1</sup> |                                                                               |   |                                                                                                                                                                                                          |                          |
| ACS<br>ATM<br>1.2.1                                                                                           | Provide FIS and RIS <sup>2</sup> .                                            | 4 | Regulation (EU) No 923/2012, Regulation (EU) 2017/373<br><i>Optional content: national documents, military regulations and directives</i>                                                                | ALL                      |
| ACS<br>ATM<br>1.2.2                                                                                           | Use an ATS surveillance system in the provision of FIS and RIS <sup>3</sup> . | 3 | Regulation (EU) No 923/2012, Regulation (EU) 2017/373, information to identified aircraft concerning: traffic, navigation<br><i>Optional content: weather</i>                                            | APS<br>ACS               |
| ACS<br>ATM<br>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,<br><i>Optional content: military regulations and directives</i>                               | APS<br>ACS<br>APP<br>ACP |
| ACS<br>ATM<br>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)                                                                    |                                                                               |   |                                                                                                                                                                                                          |                          |
| ACS<br>ATM<br>1.3.1                                                                                           | Provide ALRS.                                                                 | 4 | Regulation (EU) 2017/373, Regulation (EU) No 923/2012<br><i>Optional content: national documents</i>                                                                                                     | ALL                      |
| ACS<br>ATM<br>1.3.2                                                                                           | Respond to distress and urgency messages and signals.                         | 3 | Regulation (EU) No 923/2012, ICAO Annex 10<br><i>Optional content: EUROCONTROL Guidelines for Controller Training in the Handling of Unusual/Emergency Situations, ICAO Doc 4444, national documents</i> | ALL                      |
| ACS<br>ATM<br>1.3.3                                                                                           | Use an ATS surveillance system in the provision of ALRS.                      | 3 |                                                                                                                                                                                                          | APS<br>ACS               |

<sup>1</sup> Where applicable.<sup>2</sup> Where applicable.<sup>3</sup> Where applicable.

# MILITARY AIR TRAFFIC CONTROLLER INITIAL RATING TRAINING - ACS COMPOSITION

| TOPIC ATM 1 — PROVISION OF SERVICES                                    |                                                                                                              |   |                                                                                                                                                                                                                                                                                                          |                          |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Subtopic ATM 1.4 — ATS system capacity and air traffic flow management |                                                                                                              |   |                                                                                                                                                                                                                                                                                                          |                          |
| ACS<br>ATM<br>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, <b>military operational principles</b>, etc.</i>                                                                                                                          | APP<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>1.4.2                                                    | Apply flow management procedures in the provision of ATC.                                                    | 3 | <i>Optional content: EUROCONTROL ATFCM Users Manual</i>                                                                                                                                                                                                                                                  | ACP<br>ACS               |
| ACS<br>ATM<br>1.4.3                                                    | Organise traffic flows and patterns to take account of airspace boundaries.                                  | 4 | <i>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</i>                         | APP<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>1.4.4                                                    | Organise traffic flows and patterns to take account of areas of responsibility.                              | 4 | <i>Optional content: EUROCONTROL ATFCM Users Manual</i>                                                                                                                                                                                                                                                  | APP<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>1.4.5                                                    | Inform <b>the</b> supervisor of local factors affecting ATS system capacity and air traffic flow management. | 3 | <i>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, <b>laser incidents</b>.</i> | APP<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>1.4.6                                                    | Organise traffic flows and patterns to take account of ATS surveillance system capability.                   | 4 |                                                                                                                                                                                                                                                                                                          | APS<br>ACS               |
| Subtopic ATM 1.5 — Airspace management (ASM)                           |                                                                                                              |   |                                                                                                                                                                                                                                                                                                          |                          |
| ACS<br>ATM<br>1.5.1                                                    | Appreciate the impact of ASM on the controller.                                                              | 3 |                                                                                                                                                                                                                                                                                                          | APP<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>1.5.2                                                    | Organise traffic to take account of ASM.                                                                     | 4 |                                                                                                                                                                                                                                                                                                          | APS<br>ACS               |

| TOPIC ATM 2 — COMMUNICATION                |                                                                      |   |                                                                                                                                            |     |
|--------------------------------------------|----------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Subtopic ATM 2.1 — Effective communication |                                                                      |   |                                                                                                                                            |     |
| ACS<br>ATM<br>2.1.1                        | List the communication means between controllers.                    | 1 | <i>Optional content: <b>electronic, written, verbal and non-verbal communication</b></i>                                                   | ALL |
| ACS<br>ATM<br>2.1.2                        | Select the most suitable means of communication given the situation. | 5 |                                                                                                                                            | ALL |
| ACS<br>ATM<br>2.1.3                        | Use approved phraseology.                                            | 3 | <i>Regulation (EU) No 923/2012, ICAO Doc 4444<br/>Optional content: <b>published national/local language phraseology, NATO STANAGs</b></i> | ALL |

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| TOPIC ATM 2 — COMMUNICATION |                                                                           |   |                                                                                                                                                             |     |
|-----------------------------|---------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| ACS<br>ATM<br>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 |
| ACS<br>ATM<br>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                 |                                                                  |   |                                                                                                                                 |     |
| ACS<br>ATM<br>3.1.1                               | Issue appropriate ATC clearances.                                | 3 | Regulation (EU) No 923/2012, Regulation (EU) 2017/373, ICAO Doc 4444<br><br>Optional content: ICAO Doc 4444, national documents | ALL |
| ACS<br>ATM<br>3.1.2                               | Integrate appropriate ATC clearances into the control service.   | 4 |                                                                                                                                 | ALL |
| ACS<br>ATM<br>3.1.3                               | Ensure that the agreed course of action is carried out.          | 4 |                                                                                                                                 | ALL |
| Subtopic ATM 3.2 — ATC instructions               |                                                                  |   |                                                                                                                                 |     |
| ACS<br>ATM<br>3.2.1                               | Issue appropriate ATC instructions.                              | 3 | Regulation (EU) No 923/2012, Regulation (EU) 2017/373 ICAO Doc 4444<br>Optional content: national documents                     | ALL |
| ACS<br>ATM<br>3.2.2                               | Integrate appropriate ATC instructions into the control service. | 4 |                                                                                                                                 | ALL |
| ACS<br>ATM<br>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         |                                                       |   |                                                                                                                                                                                                                           |     |
| ACS<br>ATM<br>4.1.1                                   | Identify the need for coordination.                   | 3 |                                                                                                                                                                                                                           | ALL |
| Subtopic ATM 4.2 — Tools and methods for coordination |                                                       |   |                                                                                                                                                                                                                           |     |
| ACS<br>ATM<br>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            |                                                       |   |                                                                                                                                                                                                                           |     |
| ACS<br>ATM<br>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<br>Optional content: release point                                                | ALL |

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| TOPIC ATM 4 — COORDINATION |                                                                        |   |                                                                                                                                                       |     |
|----------------------------|------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| ACS<br>ATM<br>4.3.2        | Analyse effect of coordination requested by an adjacent position/unit. | 4 | <i>Optional content: delegation/transfer of responsibility for air-ground communications and separation, release point, transfer of control, etc.</i> | ALL |
| ACS<br>ATM<br>4.3.3        | Select, after negotiation, an appropriate course of action.            | 5 |                                                                                                                                                       | ALL |
| ACS<br>ATM<br>4.3.4        | Ensure <b>that</b> the agreed course of action is carried out.         | 4 |                                                                                                                                                       | ALL |
| ACS<br>ATM<br>4.3.5        | Coordinate when providing FIS, <b>RIS<sup>1</sup></b> .                | 4 | <b>Regulation (EU) 2017/373</b><br><i>Optional content: ICAO Doc 4444, <b>handling of military areas or operations</b></i>                            | ALL |
| ACS<br>ATM<br>4.3.6        | Coordinate when providing ALRS.                                        | 4 | <b>Regulation (EU) 2017/373</b><br><i>Optional content: ICAO Doc 4444</i>                                                                             | ALL |

| TOPIC ATM 5 — ALTIMETRY AND LEVEL ALLOCATION |                                                                                                                                     |   |                                                                                                                                                                            |            |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Subtopic ATM 5.1 — Altimetry                 |                                                                                                                                     |   |                                                                                                                                                                            |            |
| ACS<br>ATM<br>5.1.1                          | Allocate levels according to altimetry data.                                                                                        | 4 | <b>Regulation (EU) No 923/2012</b>                                                                                                                                         | ALL        |
| ACS<br>ATM<br>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         |                                                                                                                                     |   |                                                                                                                                                                            |            |
| ACS<br>ATM<br>5.2.1                          | Provide planning, coordination and control actions appropriate to the rules for minimum <b>usable</b> 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<br>ACS |

| TOPIC ATM 6 — SEPARATIONS              |                                       |   |                                                                                                                                                                                                                                                        |                                 |
|----------------------------------------|---------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Subtopic ATM 6.1 — Vertical separation |                                       |   |                                                                                                                                                                                                                                                        |                                 |
| ACS<br>ATM<br>6.1.1                    | Provide standard vertical separation. | 4 | <b>ICAO Doc 4444, Regulation (EU) No 923/2012, level allocation, during climb/descent, rate of climb/descent, RVSM, non-RVSM aircraft, holding pattern military regulations and directives</b><br><i>Optional content: EUROCONTROL EUROAT document</i> | <b>APP</b><br><b>APS</b><br>ACS |

<sup>1</sup> Radar Information Service (RIS) - Where applicable.

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| TOPIC ATM 6 — SEPARATIONS                                                |                                                                        |   |                                                                                                                                                                                                                                                                                      |                          |  |
|--------------------------------------------------------------------------|------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--|
| ACS<br>ATM<br>6.1.2                                                      | Provide increased vertical separation.                                 | 4 | ICAO Doc 4444, Regulation (EU) No 923/2012, military regulations and directives<br><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<br>APS<br>ACS        |  |
| ACS<br>ATM<br>6.1.3                                                      | Appreciate the application of emergency vertical separation.           | 3 | Regulation (EU) No 923/2012, ICAO Doc 4444, ICAO Doc 7030                                                                                                                                                                                                                            | APP<br>ACP<br>APS<br>ACS |  |
| ACS<br>ATM<br>6.1.4                                                      | Provide vertical separation in a surveillance environment.             | 4 | Pressure altitude-derived information, pilot-level reports, military regulations and directives<br><i>Optional content: into/out of ATS surveillance system coverage, EUROCONTROL EUROAT document</i>                                                                                | APS<br>ACS               |  |
| Subtopic ATM 6.2 — Longitudinal separation in a surveillance environment |                                                                        |   |                                                                                                                                                                                                                                                                                      |                          |  |
| ACS<br>ATM<br>6.2.1                                                      | Provide longitudinal separation in a surveillance environment.         | 4 | Successive departures, successive arrivals, overflights, speed control, Mach number techniques, silent transfer, ICAO Doc 4444, military regulations and directives<br><i>Optional content: EUROCONTROL EUROAT document</i>                                                          | ACS                      |  |
| Subtopic ATM 6.3 — Wake turbulence distance-based separation             |                                                                        |   |                                                                                                                                                                                                                                                                                      |                          |  |
| ACS<br>ATM<br>6.3.1                                                      | Provide distance-based wake turbulence separation.                     | 4 | Regulation (EU) 2017/373<br>Regulation (EU) No 923/2012<br><i>Optional content: EASA SIB 2017-10 ‘En-route Wake Turbulence Encounters’, national documents</i>                                                                                                                       | APS<br>ACS               |  |
| Subtopic ATM 6.4 — Separation based on ATS surveillance systems          |                                                                        |   |                                                                                                                                                                                                                                                                                      |                          |  |
| ACS<br>ATM<br>6.4.1                                                      | Describe how separation based on ATS surveillance systems is applied.  | 2 | Regulation (EU) 2017/373                                                                                                                                                                                                                                                             | APS<br>ACS               |  |
| ACS<br>ATM<br>6.4.2                                                      | Provide horizontal separation.                                         | 4 | Regulation (EU) 2017/<br><i>Optional content: local/simulator operation manuals, holding</i>                                                                                                                                                                                         | APS<br>ACS               |  |
| ACS<br>ATM<br>6.4.3                                                      | 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<br>ACS               |  |
| ACS<br>ATM<br>6.4.4                                                      | Ensure horizontal or vertical separation from airspace boundaries.     | 4 | Adjacent sectors, restricted, prohibited and danger areas, TSAs, TRAs.                                                                                                                                                                                                               | APS<br>ACS               |  |

| TOPIC ATM 7 — AIRBORNE AND GROUND-BASED SAFETY NETS |                                                                            |   |                                                                |     |  |
|-----------------------------------------------------|----------------------------------------------------------------------------|---|----------------------------------------------------------------|-----|--|
| Subtopic ATM 7.1 — Airborne safety nets             |                                                                            |   |                                                                |     |  |
| ACS<br>ATM<br>7.1.1                                 | Recognise the independence of ACAS thresholds and ATC separation standards | 1 | ICAO Doc 9863<br><i>Optional content: Skybrary Safety Nets</i> | ALL |  |

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| TOPIC ATM 7 — AIRBORNE AND GROUND-BASED SAFETY NETS |                                                                                           |   |                                                                                                         |                          |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------|--------------------------|
| ACS<br>ATM<br>7.1.2                                 | Describe the controller responsibility during and following an ACAS RA reported by pilot. | 2 | Regulation (EU) 923/2012<br><i>Optional content: ICAO Doc 4444, ICAO Doc 9863, Skybrary Safety Nets</i> | ALL                      |
| ACS<br>ATM<br>7.1.3                                 | Respond to pilot notification of actions based on airborne systems warnings.              | 3 | ACAS;<br><i>Optional content: TAWS, Skybrary Safety Nets</i>                                            | APP<br>APS<br>ACP<br>ACS |
| Subtopic ATM 7.2 — Ground-based safety nets         |                                                                                           |   |                                                                                                         |                          |
| ACS<br>ATM<br>7.2.1                                 | Describe the controller responsibility during and following safety net warnings.          | 2 | Regulation (EU) 2017/373<br><i>Optional content: ICAO Doc 4444, STCA, MSAW, APW, APM</i>                | APS<br>ACS               |
| ACS<br>ATM<br>7.2.2                                 | Respond to ground-based safety net warnings.                                              | 3 | <i>Optional content: STCA, MSAW, APW, APM</i>                                                           | APS<br>ACS               |

| TOPIC ATM 8 — DATA DISPLAY         |                                                                      |   |                                                                                                                                                                                   |     |
|------------------------------------|----------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Subtopic ATM 8.1 — Data management |                                                                      |   |                                                                                                                                                                                   |     |
| ACS<br>ATM<br>8.1.1                | Update the data display to accurately reflect the traffic situation. | 3 | <i>Optional content: information displayed, strip-marking procedures, electronic information data displays, actions based on traffic display information, calculation of EETs</i> | ALL |
| ACS<br>ATM<br>8.1.2                | Analyse pertinent data on data displays.                             | 4 |                                                                                                                                                                                   | ALL |
| ACS<br>ATM<br>8.1.3                | Organise pertinent data on data displays.                            | 4 |                                                                                                                                                                                   | ALL |
| ACS<br>ATM<br>8.1.4                | Obtain flight plan information.                                      | 3 | CPL, supplementary information<br><i>Optional content FPL, RPL, AFIL, etc.</i>                                                                                                    | ALL |
| ACS<br>ATM<br>8.1.5                | Use flight plan information.                                         | 3 |                                                                                                                                                                                   | ALL |

| TOPIC ATM 9 — OPERATIONAL ENVIRONMENT (SIMULATED)                         |                                                            |   |                                                                                                                                                                                        |                          |
|---------------------------------------------------------------------------|------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Subtopic ATM 9.1 — Integrity of the operational environment               |                                                            |   |                                                                                                                                                                                        |                          |
| ACS<br>ATM<br>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                      |
| ACS<br>ATM<br>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<br>ACP<br>APS<br>ACS |
| Subtopic ATM 9.2 — Verification of the currency of operational procedures |                                                            |   |                                                                                                                                                                                        |                          |
| ACS<br>ATM<br>9.2.1                                                       | Check all relevant documentation before managing traffic.  | 3 | <i>Optional content: briefing, letters of agreement (LoAs), NOTAMs, AICs</i>                                                                                                           | ALL                      |

# MILITARY AIR TRAFFIC CONTROLLER INITIAL RATING TRAINING - ACS COMPOSITION

| TOPIC ATM 9 — OPERATIONAL ENVIRONMENT (SIMULATED)                                                            |                                                                           |   |                                                                                                    |                          |
|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------|--------------------------|
| ACS<br>ATM<br>9.2.2                                                                                          | Manage traffic in accordance with a change to operational procedures.     | 4 |                                                                                                    | APP<br>ACP<br>APS<br>ACS |
| <b>Subtopic ATM 9.3 — Handover–takeover</b>                                                                  |                                                                           |   |                                                                                                    |                          |
| ACS<br>ATM<br>9.3.1                                                                                          | Transfer information to the relieving controller.                         | 3 |                                                                                                    | ALL                      |
| ACS<br>ATM<br>9.3.2                                                                                          | Obtain information from the controller handing over.                      | 3 |                                                                                                    | ALL                      |
| ACS<br>ATM<br>9.3.3                                                                                          | List possible actions to provide a safe position handover-takeover.       | 1 | Optional content: rigour, preparation, overlap time                                                | ALL                      |
| ACS<br>ATM<br>9.3.4                                                                                          | Explain consequences of a missed position handover-takeover.              | 2 |                                                                                                    | ALL                      |
| TOPIC ATM 10 — PROVISION OF CONTROL SERVICE                                                                  |                                                                           |   |                                                                                                    |                          |
| <b>Subtopic ATM 10.1 — Responsibility for the provision of control service and processing of information</b> |                                                                           |   |                                                                                                    |                          |
| ACS<br>ATM<br>10.1.1                                                                                         | Describe the division of responsibility among air traffic control units.  | 2 | Regulation (EU) 2017/373<br>Optional content: ICAO Doc 4444                                        | ALL                      |
| ACS<br>ATM<br>10.1.2                                                                                         | Describe the responsibility of civil ATCOs in regard to military traffic. | 2 | ICAO Doc 4444<br>Optional content: ICAO Doc 9554                                                   | ALL                      |
| ACS<br>ATMMIL<br>10.1.2.1                                                                                    | Describe the responsibility of military ATCOs in regard to civil traffic. | 2 | ICAO Doc 4444<br>Optional content: ICAO Doc 9554, national regulations or directives               | ALL                      |
| ACS<br>ATM<br>10.1.3                                                                                         | Describe the responsibility in regard to unmanned free balloons.          | 2 | Regulation (EU) No 923/2012                                                                        | ALL                      |
| ACS<br>ATM<br>10.1.4                                                                                         | Interpret operational information.                                        | 5 |                                                                                                    | APP<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>10.1.5                                                                                         | Organise forwarding of operational information.                           | 4 | Optional content: including the use of backup procedures                                           | APP<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>10.1.6                                                                                         | Integrate operational information into control decisions.                 | 4 |                                                                                                    | APP<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>10.1.7                                                                                         | Appreciate the influence of operational requirements.                     | 3 | Specific military flying requirements<br>Optional content: calibration flights, aerial photography | ALL                      |
| <b>Subtopic ATM 10.2 — ATS surveillance service</b>                                                          |                                                                           |   |                                                                                                    |                          |

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| TOPIC ATM 10 — PROVISION OF CONTROL SERVICE    |                                                                                                                                           |   |                                                                                                                                                                     |                          |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| ACS<br>ATM<br>10.2.1                           | Explain the responsibility for the provision of ATS surveillance service appropriate to ACS rating.                                       | 2 | Regulation (EU) 2017/373 Regulation (EU) No 923/2012<br><i>Optional content: local/simulator operation manuals, handling of military areas or operations</i>        | ACS                      |
| ACS<br>ATM<br>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<br>ACS               |
| ACS<br>ATM<br>10.2.3                           | Provide planning, coordination and control actions appropriate to VFR and IFR traffic in VMC and IMC.                                     | 4 | Regulation (EU) No 923/2012, ICAO Annex 11, ICAO Doc 4444, military regulations and directives<br><i>Optional content: handling of military areas or operations</i> | ACS                      |
| ACS<br>ATM<br>10.2.4                           | Apply the procedures for termination of ATS surveillance service.                                                                         | 3 | Regulation (EU) 2017/373<br><i>Optional content: ICAO Doc 4444, transfer of control, termination or interruption of ATS surveillance service</i>                    | APS<br>ACS               |
| Subtopic ATM 10.3 — Traffic management process |                                                                                                                                           |   |                                                                                                                                                                     |                          |
| ACS<br>ATM<br>10.3.1                           | Ensure that situational awareness is maintained.                                                                                          | 4 | Information gathering, scanning, traffic projection                                                                                                                 | APS<br>ACS               |
| ACS<br>ATM<br>10.3.2                           | Detect conflicts in time for appropriate resolution.                                                                                      | 4 |                                                                                                                                                                     | ALL                      |
| ACS<br>ATM<br>10.3.3                           | Identify potential solutions to achieve a safe and effective traffic flow.                                                                | 3 |                                                                                                                                                                     | APP<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>10.3.4                           | Evaluate possible outcomes of different planning and control actions.                                                                     | 5 |                                                                                                                                                                     | ALL                      |
| ACS<br>ATM<br>10.3.5                           | Select an appropriate plan in time to achieve safe and effective traffic flow.                                                            | 5 |                                                                                                                                                                     | APP<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>10.3.6                           | Ensure an adequate priority of actions.                                                                                                   | 4 |                                                                                                                                                                     | ALL                      |
| ACS<br>ATM<br>10.3.7                           | Execute the selected plan in a timely manner.                                                                                             | 3 |                                                                                                                                                                     | ALL                      |
| ACS<br>ATM<br>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           |                                                                                                                                           |   |                                                                                                                                                                     |                          |
| ACS<br>ATM<br>10.4.1                           | Manage arrivals, departures and overflights.                                                                                              | 4 | <i>Optional content: simulator operation procedures, military procedures</i>                                                                                        | APP<br>ACP<br>APS<br>ACS |

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| TOPIC ATM 10 — PROVISION OF CONTROL SERVICE                      |                                                                                     |   |                                                                                                                                                                                                                                              |                          |
|------------------------------------------------------------------|-------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| ACS<br>ATM<br>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<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>10.4.3                                             | Define flight path monitoring and vectoring.                                        | 1 | Regulation (EU) 2017/373                                                                                                                                                                                                                     | APS<br>ACS               |
| ACS<br>ATM<br>10.4.4                                             | Explain the requirements for vectoring and termination of vectoring.                | 2 | Regulation (EU) 2017/373                                                                                                                                                                                                                     | APS<br>ACS               |
| ACS<br>ATM<br>10.4.5                                             | Provide vectoring.                                                                  | 4 | Regulation (EU) No 923/2012, Regulation (EU) 2017/373<br><i>Optional content: separation, expediting arrivals, departures and/or climb to cruising levels, aircraft leaving the hold, navigation assistance, uncontrolled airspace, etc.</i> | APS<br>ACS               |
| ACS<br>ATM<br>10.4.6                                             | Apply the procedures for termination of vectoring.                                  | 3 | Regulation (EU) No 923/2012, Regulation (EU) 2017/373                                                                                                                                                                                        | APS<br>ACS               |
| ACS<br>ATMMIL<br>10.4.6.1                                        | Apply military procedures                                                           | 3 | <i>Optional content: formation flights, radar trail procedures, join-up, split-up, MARSA, fuel jettison, SFO, lost wingman, supersonic flights, aerobatic flights, parachute drop, air-to-air refuelling, cross-border operations</i>        | ACS                      |
| ACS<br>ATMMIL<br>10.4.6.2                                        | Apply RPAS procedures                                                               | 3 | Contingency procedure (e.g. loss of link, loss of communication), pre-planned automated profiles                                                                                                                                             | ALL                      |
| Subtopic ATM 10.5 — Control service with advanced system support |                                                                                     |   |                                                                                                                                                                                                                                              |                          |
| ACS<br>ATM<br>10.5.1                                             | Appreciate the impact of advanced systems on the provision of area control service. | 3 | <i>Optional content: sequencing systems, automated holding lists, vertical traffic displays, conflict detection and decision-making tools, automated information and coordination tools</i>                                                  | ACS                      |
| TOPIC ATM 11 — HOLDING                                           |                                                                                     |   |                                                                                                                                                                                                                                              |                          |
| Subtopic ATM 11.1 — General holding procedures                   |                                                                                     |   |                                                                                                                                                                                                                                              |                          |
| ACS<br>ATM<br>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<br>ACP<br>APS<br>ACS |
| ACS<br>ATM<br>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<br>ACP<br>APS<br>ACS |
| Subtopic ATM 11.2 — Holding aircraft                             |                                                                                     |   |                                                                                                                                                                                                                                              |                          |
| ACS<br>ATM<br>11.2.1                                             | Issue expected onward clearance times.                                              | 3 |                                                                                                                                                                                                                                              | ACP<br>ACS               |
| Subtopic ATM 11.3 — Holding in a surveillance environment        |                                                                                     |   |                                                                                                                                                                                                                                              |                          |

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| TOPIC ATM 11 — HOLDING |                                                                    |   |                                                                                                        |            |
|------------------------|--------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------|------------|
| ACS<br>ATM<br>11.3.1   | Organise traffic to separate other aircraft from holding aircraft. | 4 |                                                                                                        | APS<br>ACS |
| ACS<br>ATM<br>11.3.2   | Integrate system support, when available.                          | 4 | <i>Optional content: arrival management system, automated holding lists, vertical traffic displays</i> | APS<br>ACS |

| TOPIC ATM 12 — IDENTIFICATION                       |                                                                                         |   |                                                                                                                                                                                                             |            |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Subtopic ATM 12.1 — Establishment of identification |                                                                                         |   |                                                                                                                                                                                                             |            |
| ACS<br>ATM<br>12.1.1                                | Appreciate the precautions when establishing identification.                            | 3 |                                                                                                                                                                                                             | APS<br>ACS |
| ACS<br>ATM<br>12.1.2                                | Identify aircraft.                                                                      | 3 | <i>Optional content: PSR, SSR or ADS identification method</i>                                                                                                                                              | APS<br>ACS |
| ACS<br>ATM<br>12.1.3                                | Apply the procedures in the case of misidentification.                                  | 3 | ICAO Doc 4444, Regulation (EU) 2017/373<br><i>Optional content: local/simulator operation manuals</i>                                                                                                       | APS<br>ACS |
| Subtopic ATM 12.2 — Maintenance of identification   |                                                                                         |   |                                                                                                                                                                                                             |            |
| ACS<br>ATM<br>12.2.1                                | Appreciate the necessity to maintain identification.                                    | 3 |                                                                                                                                                                                                             | APS<br>ACS |
| Subtopic ATM 12.3 — Loss of identity                |                                                                                         |   |                                                                                                                                                                                                             |            |
| ACS<br>ATM<br>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<br>ACS |
| ACS<br>ATM<br>12.3.2                                | Apply methods to re-establish identification.                                           | 3 |                                                                                                                                                                                                             | APS<br>ACS |
| ACS<br>ATM<br>12.3.3                                | Respond to loss/doubt concerning identification.                                        | 3 | <i>Optional content: procedural separation</i>                                                                                                                                                              | APS<br>ACS |
| Subtopic ATM 12.4 — Position information            |                                                                                         |   |                                                                                                                                                                                                             |            |
| ACS<br>ATM<br>12.4.1                                | Appreciate the circumstances when position information should be passed on to aircraft. | 3 |                                                                                                                                                                                                             | APS<br>ACS |
| ACS<br>ATM<br>12.4.2                                | State the format in which position information can be passed on to aircraft.            | 1 | Regulation (EU) 2017/373                                                                                                                                                                                    | APS<br>ACS |
| Subtopic ATM 12.5 — Transfer of identity            |                                                                                         |   |                                                                                                                                                                                                             |            |
| ACS<br>ATM<br>12.5.1                                | Apply methods of transfer of identification.                                            | 3 |                                                                                                                                                                                                             | APS<br>ACS |
| ACS<br>ATM<br>12.5.2                                | Appreciate the precautions when transferring identification.                            | 3 |                                                                                                                                                                                                             | APS<br>ACS |

## SUBJECT 4: METEOROLOGY

| TOPIC MET 1 — METEOROLOGICAL PHENOMENA                   |                                                                          |   |                                                                                                                                                                                      |                          |
|----------------------------------------------------------|--------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Subtopic MET 1.1 — Meteorological phenomena              |                                                                          |   |                                                                                                                                                                                      |                          |
| ACS<br>MET<br>1.1.1                                      | Appreciate the impact of adverse weather on aircraft.                    | 3 | Thunderstorms, icing, jet streams, clear-air turbulence (CAT), turbulence, microburst, severe mountain waves, squall lines, volcanic ash<br><i>Optional content: solar radiation</i> | ACP<br>ACS               |
| ACS<br>MET<br>1.1.2                                      | Integrate data about meteorological phenomena into the provision of ATS. | 4 | Clearances, instructions and transmitted information<br><i>Optional content: relevant meteorological phenomena</i>                                                                   | ALL                      |
| ACS<br>MET<br>1.1.3                                      | Use techniques to avoid adverse weather when necessary/possible.         | 3 | Rerouting, level change, etc.                                                                                                                                                        | APP<br>ACP<br>APS<br>ACS |
| TOPIC MET 2 — SOURCES OF METEOROLOGICAL DATA             |                                                                          |   |                                                                                                                                                                                      |                          |
| Subtopic MET 2.1 — Sources of meteorological information |                                                                          |   |                                                                                                                                                                                      |                          |
| ACS<br>MET<br>2.1.1                                      | Obtain meteorological information.                                       | 3 | METAR, TAF, SIGMET, AIRMET<br><i>Optional content: AIREP/special AIREP/Pilot reports</i>                                                                                             | APP<br>ACP<br>APS<br>ACS |
| ACS<br>MET<br>2.1.2                                      | Decode information from meteorological data displays.                    | 3 |                                                                                                                                                                                      | ALL                      |
| ACS<br>MET<br>2.1.3                                      | Relay meteorological information.                                        | 3 | ICAO Doc 4444, Regulation (EU) No 923/2012<br><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         |                                                                                                 |   |                                                                                                                                                            |                          |
| ACS<br>NAV<br>1.1.1                        | Use relevant maps and charts.                                                                   | 3 |                                                                                                                                                            | ALL                      |
| ACS<br>NAV<br>1.1.2                        | Decode symbols and information displayed on aeronautical maps and charts.                       | 3 | Enroute and Area charts<br>Optional content: STAR charts                                                                                                   | ACP<br>ACS               |
| TOPIC NAV 2 — INSTRUMENT NAVIGATION        |                                                                                                 |   |                                                                                                                                                            |                          |
| Subtopic NAV 2.1 — Navigational systems    |                                                                                                 |   |                                                                                                                                                            |                          |
| ACS<br>NAV<br>2.1.1                        | Manage traffic in case of change in the operational status of navigational systems.             | 4 | Optional content: limitations, availability and status of ground-based and satellite-based systems                                                         | APP<br>ACP<br>APS<br>ACS |
| ACS<br>NAV<br>2.1.2                        | Appreciate the effect of a change in the operational status of navigational systems.            | 3 | Optional content: precision, limitations, status, degraded procedures                                                                                      | ALL                      |
| Subtopic NAV 2.2 — Navigational assistance |                                                                                                 |   |                                                                                                                                                            |                          |
| ACS<br>NAV<br>2.2.1                        | Evaluate the necessary information to be provided to pilots in need of navigational assistance. | 5 | Optional content: nearest most suitable aerodrome, track, heading, distance, aerodrome information, any other navigational assistance relevant at the time | APP<br>ACP<br>APS<br>ACS |
| ACS<br>NAV<br>2.2.2                        | Assist pilots with navigation when required.                                                    | 3 | Aircraft observed to be deviating from their known intended route, on pilots' request                                                                      | APS<br>ACS               |
| Subtopic NAV 2.3 — PBN applications        |                                                                                                 |   |                                                                                                                                                            |                          |
| ACS<br>NAV<br>2.3.1                        | State the navigation applications used in terminal and en-route environments.                   | 1 | Terminal-RNAV-1, En-route-RNAV-5<br>Optional content: A-RNP, EC PBN Implementing Rule (Commission Implementing Regulation (EU) 2018/1048), ICAO Doc 9613   | ACP<br>ACS               |
| ACS<br>NAV<br>2.3.2                        | Explain the principles and designation of navigation specifications in use.                     | 2 | Performance, functionalities, sensors<br>Optional content: aircrew and controller requirements, accuracy requirements, integrity and continuity            | APP<br>ACP<br>APS<br>ACS |
| ACS<br>NAV<br>2.3.3                        | Describe differences in turn performances.                                                      | 2 | Optional content: fly by, fly over, FRT, ICAO Doc 4444                                                                                                     | ACP<br>ACS               |
| ACS<br>NAV<br>2.3.4                        | State future PBN developments.                                                                  | 1 | A-RNP, RNP (AR) DEP<br>Optional content: RNP 3D, VNAV, 4D, TBO                                                                                             | ALL                      |

## SUBJECT 6: AIRCRAFT

| TOPIC ACFT 1 — AIRCRAFT INSTRUMENTS                   |                                                                                                           |   |                                                                                                                       |                          |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------|--------------------------|
| Subtopic ACFT 1.1 — Aircraft instruments              |                                                                                                           |   |                                                                                                                       |                          |
| ACS<br>ACFT<br>1.1.1                                  | Integrate information from aircraft instruments provided by the pilot into the provision of ATS.          | 4 |                                                                                                                       | ALL                      |
| ACS<br>ACFT<br>1.1.2                                  | Explain the operation of aircraft radio equipment.                                                        | 2 | <i>Optional content: radios (number of), emergency radios</i>                                                         | ALL                      |
| ACS<br>ACFT<br>1.1.3                                  | Explain the operation of on-board surveillance equipment.                                                 | 2 | Transponders: equipment Mode A, Mode C, Mode S, ADS capability                                                        | ADC<br>APS<br>ACS        |
| TOPIC ACFT 2 — AIRCRAFT CATEGORIES                    |                                                                                                           |   |                                                                                                                       |                          |
| Subtopic ACFT 2.1 — Wake turbulence                   |                                                                                                           |   |                                                                                                                       |                          |
| ACS<br>ACFT<br>2.1.1                                  | Explain the wake turbulence effect and associated hazards to succeeding aircraft.                         | 2 |                                                                                                                       | ALL                      |
| ACS<br>ACFT<br>2.1.2                                  | Appreciate the techniques used to prevent hazards associated with wake turbulence to succeeding aircraft. | 3 |                                                                                                                       | ALL                      |
| TOPIC ACFT 3 — FACTORS AFFECTING AIRCRAFT PERFORMANCE |                                                                                                           |   |                                                                                                                       |                          |
| Subtopic ACFT 3.1 — Climb factors                     |                                                                                                           |   |                                                                                                                       |                          |
| ACS<br>ACFT<br>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<br>ACP<br>APS<br>ACS |
| Subtopic ACFT 3.2 — Cruise factors                    |                                                                                                           |   |                                                                                                                       |                          |
| ACS<br>ACFT<br>3.2.1                                  | Integrate the influence of factors affecting aircraft during cruise.                                      | 4 | Level, cruising speed, wind, mass, cabin pressurisation, aircraft configuration                                       | ACP<br>ACS               |
| Subtopic ACFT 3.3 — Descent factors                   |                                                                                                           |   |                                                                                                                       |                          |
| ACS<br>ACFT<br>3.3.1                                  | Integrate the influence of factors affecting aircraft during descent.                                     | 4 | <i>Optional content: wind, speed, rate of descent, cabin pressurisation, aircraft configuration</i>                   | APP<br>ACP<br>APS<br>ACS |
| Subtopic ACFT 3.4 — Economic factors                  |                                                                                                           |   |                                                                                                                       |                          |
| ACS<br>ACFT<br>3.4.1                                  | Integrate consideration of economic factors affecting aircraft.                                           | 4 | <i>Optional content: routing, level, speed, rate of climb and rate of descent, approach profile, top of descent</i>   | ACP<br>ACS               |
| ACS<br>ACFT<br>3.4.2                                  | Provide continuous climb/descent whenever possible.                                                       | 4 |                                                                                                                       | APS<br>ACS               |
| ACS<br>ACFT<br>3.4.3                                  | Use direct routing where applicable.                                                                      | 3 |                                                                                                                       | APP<br>ACP<br>APS<br>ACS |

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| TOPIC ACFT 3 — FACTORS AFFECTING AIRCRAFT PERFORMANCE |                                                                                                              |   |                                                                                                                                   |            |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------|------------|
| ACS<br>ACFT<br>3.4.4                                  | 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 touch down information</i> | ACS<br>APS |
| <b>Subtopic ACFT 3.5 — Environmental factors</b>      |                                                                                                              |   |                                                                                                                                   |            |
| ACS<br>ACFT<br>3.5.1                                  | Appreciate the performance restrictions due to environmental considerations.                                 | 3 | <i>Optional content: fuel-dumping, minimum flight levels, continuous descent operations</i>                                       | ACP<br>ACS |
| <b>Subtopic ACFT MIL 3.6 — Operational factors</b>    |                                                                                                              |   |                                                                                                                                   |            |
| ACS<br>ACFTMIL<br>3.6.1                               | 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                |                                                                                                                                                                                        |   |                                                                         |     |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------------------------------------------------------------|-----|
| <b>Subtopic ACFT 4.1 — Performance data</b> |                                                                                                                                                                                        |   |                                                                         |     |
| ACS<br>ACFT<br>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 | <i>Performance data under a representative variety of circumstances</i> | ALL |

## SUBJECT 7: HUMAN FACTORS

| TOPIC HUM 1 — INFORMATION PROCESSING PSYCHOLOGICAL FACTORS |                                                                                         |   |                                                                                                                      |     |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------|-----|
| Subtopic HUM 1.1 — Cognition and factors influencing it    |                                                                                         |   |                                                                                                                      |     |
| ACS HUM 1.1.1                                              | Describe the human information-processing model.                                        | 2 | Attention, perception, memory, situational awareness, decision-making, response                                      | ALL |
| ACS 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                   |                                                                                         |   |                                                                                                                      |     |
| ACS 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                            |                                                                              |   |                                                                                                                                                                                  |     |
| ACS HUM 2.1.1                                         | Describe the onset of fatigue.                                               | 2 | Regulation (EU) 2017/373<br>Optional content: lack of concentration, listlessness, irritability, frustration, Skybrary Human Behaviour: EUROCONTROL Fatigue and sleep management | ALL |
| ACS 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 |
| ACS 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                             |                                                                              |   |                                                                                                                                                                                  |     |
| ACS HUM 2.2.1                                         | Recognise the effects of stress on performance.                              | 1 | Stress and its symptoms in self and in others<br>Optional content: Regulation (EU) 2017/373                                                                                      | ALL |
| ACS HUM 2.2.2                                         | Describe appropriate action when recognising stress.                         | 2 |                                                                                                                                                                                  | ALL |
| ACS HUM 2.2.3                                         | Act to reduce stress.                                                        | 3 |                                                                                                                                                                                  | ALL |
| ACS HUM 2.2.4                                         | Respond to stressful situations by offering, asking or accepting assistance. | 3 |                                                                                                                                                                                  | ALL |
| ACS HUM 2.2.5                                         | Recognise the effect of stressful events.                                    | 1 | Self and others, abnormal situations                                                                                                                                             | ALL |
| Subtopic HUM MIL 2.3 — Mental states                  |                                                                              |   |                                                                                                                                                                                  |     |

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| TOPIC HUM 2 — FACTORS AFFECTING HEALTH AND WELL-BEING |                       |   |  |     |
|-------------------------------------------------------|-----------------------|---|--|-----|
| ACS HUM 2.3.1                                         | Consider mental state | 2 |  | ALL |

| TOPIC HUM 3 — THREAT AND ERROR MANAGEMENT                |                                                         |   |                                                                                                                                                                        |     |
|----------------------------------------------------------|---------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Subtopic HUM 3.1 — Threat and error management framework |                                                         |   |                                                                                                                                                                        |     |
| ACS 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 |
| ACS HUM 3.1.2                                            | Explain the threat and error management framework.      | 2 | Threats, errors, undesired states, countermeasures<br>Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control            | ALL |
| ACS HUM 3.1.3                                            | Differentiate threats in ATC.                           | 2 | Internal, external, airborne, environmental<br>Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control                   | ALL |
| ACS HUM 3.1.4                                            | Differentiate errors in ATC.                            | 2 | Equipment, procedural, communication<br>Optional content: increase in traffic, changes in procedures, complexities of systems or traffic, weather, unusual occurrences | ALL |
| ACS HUM 3.1.5                                            | Differentiate undesired states.                         | 2 | On the ground, airborne<br>Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control                                       | ALL |
| ACS HUM 3.1.6                                            | Analyse examples of threat and error management in ATC. | 4 | Case studies<br>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   |                                                         |   |                                                                                                                                                                        |     |
| ACS HUM 3.2.1                                            | Manage threats.                                         | 4 | Detect and respond<br>Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control                                            | ALL |
| ACS HUM 3.2.2                                            | Manage errors.                                          | 4 | Detect and respond<br>Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control                                            | ALL |
| ACS HUM 3.2.3                                            | Manage undesired states.                                | 4 | Detect and respond<br>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 |                                 |   |                                           |     |
| ACS HUM 4.1.1                           | State the benefits of teamwork. | 1 | Increased safety, efficiency and capacity | ALL |

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| TOPIC HUM 4 — TEAMWORK |                                                                        |   |                                                                                                         |     |
|------------------------|------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------|-----|
| ACS 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

|               |                                                   |   |                                                  |     |
|---------------|---------------------------------------------------|---|--------------------------------------------------|-----|
| ACS HUM 4.2.1 | Identify reasons for conflict.                    | 3 |                                                  | ALL |
| ACS HUM 4.2.2 | Describe strategies to cope with human conflicts. | 2 | Optional content: in your team, in the simulator | ALL |
| ACS 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

|               |                                                                          |   |                                                                                                              |     |
|---------------|--------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------|-----|
| ACS HUM 5.1.1 | Explain the concept of systems.                                          | 2 | People, procedures, equipment, ATM in system terms, simple; complicated and complex systems, system thinking | ALL |
| ACS HUM 5.1.2 | Describe how changes in one part of a system may impact the other parts. | 2 |                                                                                                              | ALL |
| ACS HUM 5.1.3 | Describe the role of the human in the system.                            | 2 |                                                                                                              | ALL |

## TOPIC HUM 6 — COMMUNICATION

### Subtopic HUM 6.1 — Communication

|               |                                                                          |   |                                                                                                                                                                                                                                               |     |
|---------------|--------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| ACS HUM 6.1.1 | Explain effective communication in ATC operations.                       | 2 | ICAO Doc 9868                                                                                                                                                                                                                                 | ALL |
| ACS 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 |
| ACS 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<br>Optional content: Communication between and in the team(s), in the simulator, with the pilots, instructors, coordination partners | ALL |

### Subtopic HUM 6.2 — Effective feedback

|               |                                                                                     |   |  |     |
|---------------|-------------------------------------------------------------------------------------|---|--|-----|
| ACS HUM 6.2.1 | Define feedback.                                                                    | 1 |  | ALL |
| ACS HUM 6.2.2 | Explain the purpose of receiving and giving feedback and its effect on performance. | 2 |  | ALL |

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| TOPIC HUM 6 — COMMUNICATION |                                                                                   |   |  |     |
|-----------------------------|-----------------------------------------------------------------------------------|---|--|-----|
| ACS<br>HUM<br>6.2.3         | Consider the impact of communication styles on feedback, and resolving conflicts. | 2 |  | ALL |
| ACS<br>HUM<br>6.2.4         | Integrate feedback into performance.                                              | 4 |  | ALL |

## SUBJECT 8: EQUIPMENT AND SYSTEMS

| TOPIC EQPS 1 — VOICE COMMUNICATIONS            |                                                                |   |                                                                                                                                                |                          |
|------------------------------------------------|----------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Subtopic EQPS 1.1 — Radio communications       |                                                                |   |                                                                                                                                                |                          |
| ACS EQPS 1.1.1                                 | Operate two-way communication equipment.                       | 3 | Transmit/receive switches, procedures<br><i>Optional content: frequency selection, standby equipment</i>                                       | ALL                      |
| ACS 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                      |
| ACS 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<br>ACP<br>APS<br>ACS |
| Subtopic EQPS 1.2 — Other voice communications |                                                                |   |                                                                                                                                                |                          |
| ACS 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) |                                                        |   |                                                                                           |                   |
| ACS 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                          |                                                        |   |                                                                                           |                   |
| ACS EQPS 2.2.1                                                          | Use automatic data transfer equipment where available. | 3 | <i>Optional content: sequencing systems, automated information and coordination, OLDI</i> | ADC<br>APS<br>ACS |

| TOPIC EQPS 3 — CONTROLLER WORKING POSITION                     |                                                                       |   |                                                                                                                                                                                |            |
|----------------------------------------------------------------|-----------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Subtopic EQPS 3.1 — Operation and monitoring of equipment      |                                                                       |   |                                                                                                                                                                                |            |
| ACS EQPS 3.1.1                                                 | Monitor the technical integrity of the controller working position.   | 3 | Notification procedures, responsibilities                                                                                                                                      | ALL        |
| ACS 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        |
| ACS EQPS 3.1.3                                                 | Operate the available equipment in abnormal and emergency situations. | 3 |                                                                                                                                                                                | ALL        |
| Subtopic EQPS 3.2 — Situation displays and information systems |                                                                       |   |                                                                                                                                                                                |            |
| ACS EQPS 3.2.1                                                 | Use situation displays.                                               | 3 |                                                                                                                                                                                | ALL        |
| ACS EQPS 3.2.2                                                 | Check the availability of information.                                | 3 |                                                                                                                                                                                | ALL        |
| ACS EQPS 3.2.3                                                 | Obtain information from equipment.                                    | 3 |                                                                                                                                                                                | APP<br>ACP |

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

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| TOPIC EQPS 5 — EQUIPMENT AND SYSTEMS' LIMITATIONS AND DEGRADATION |                                                                                    |   |                                                                                                                                                                                                                                             |            |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Subtopic EQPS 5.3 — Navigational equipment degradation            |                                                                                    |   |                                                                                                                                                                                                                                             |            |
| ACS<br>EQPS<br>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        |
| ACS<br>EQPS<br>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            |                                                                                    |   |                                                                                                                                                                                                                                             |            |
| ACS<br>EQPS<br>5.4.1                                              | Identify that surveillance equipment has degraded.                                 | 3 | <i>Partial power failure, loss of certain facilities, total failure</i>                                                                                                                                                                     | APS<br>ACS |
| ACS<br>EQPS<br>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<br>ACS |
| Subtopic EQPS 5.5 — ATC processing system degradation             |                                                                                    |   |                                                                                                                                                                                                                                             |            |
| ACS<br>EQPS<br>5.5.1                                              | Identify a processing system degradation.                                          | 3 | <i>Optional content: FDPS, SDPS, software processing of situation display</i>                                                                                                                                                               | APS<br>ACS |
| ACS<br>EQPS<br>5.5.2                                              | Apply contingency procedures in the event of a processing system degradation.      | 3 |                                                                                                                                                                                                                                             | APS<br>ACS |

## SUBJECT 9: PROFESSIONAL ENVIRONMENT

| TOPIC PEN 1 — FAMILIARISATION                                  |                                                                                                          |   |                                                                                                                                                                                                                                |            |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Subtopic PEN 1.1 — Study visit to an area control centre       |                                                                                                          |   |                                                                                                                                                                                                                                |            |
| ACS<br>PEN<br>1.1.1                                            | Appreciate the functions and provision of an operational area control service.                           | 3 | Study visit to an area control centre                                                                                                                                                                                          | ACP<br>ACS |
| TOPIC PEN 2 — AIRSPACE USERS                                   |                                                                                                          |   |                                                                                                                                                                                                                                |            |
| Subtopic PEN 2.1 — Contributors to civil ATS operations        |                                                                                                          |   |                                                                                                                                                                                                                                |            |
| ACS<br>PEN<br>2.1.1                                            | Characterise civil ATS activities in area control centre.                                                | 2 | Study visit to an area control centre<br><i>Optional content: familiarisation visits to TWR, APP, AIM/AIS, RCC</i>                                                                                                             | ACP<br>ACS |
| ACS<br>PEN<br>2.1.2                                            | Characterise other parties interfacing with 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     |                                                                                                          |   |                                                                                                                                                                                                                                |            |
| ACS<br>PEN<br>2.2.1                                            | Characterise military ATS activities.                                                                    | 2 | <i>Optional content: familiarisation visits to TWR, APP, ACC, AIS, RCC, Air Defence Units</i>                                                                                                                                  | ALL        |
| TOPIC PEN 3 — CUSTOMER RELATIONS                               |                                                                                                          |   |                                                                                                                                                                                                                                |            |
| Subtopic PEN 3.1 — Provision of services and user requirements |                                                                                                          |   |                                                                                                                                                                                                                                |            |
| ACS<br>PEN<br>3.1.1                                            | Appreciate the role of an air navigation service provider.                                               | 3 | Regulation (EU) 2018/1139                                                                                                                                                                                                      | ALL        |
| ACS<br>PEN<br>3.1.2                                            | Appreciate ATS users' requirements.                                                                      | 3 |                                                                                                                                                                                                                                | ALL        |
| TOPIC PEN 4 — ENVIRONMENTAL PROTECTION                         |                                                                                                          |   |                                                                                                                                                                                                                                |            |
| Subtopic PEN 4.1 — Environmental protection                    |                                                                                                          |   |                                                                                                                                                                                                                                |            |
| ACS<br>PEN<br>4.1.1                                            | Appreciate the mitigation techniques used en-route to minimise the aviation's impact on the environment. | 3 | <i>Optional content: free route airspace (FRA), night/weekend routes, continuous descent operations (CDO), continuous climb operations (CCO), ICAO Doc 10013 — Operational opportunities to reduce fuel burn and emissions</i> | ACS        |

## SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS

| TOPIC ABES 1 — ABNORMAL AND EMERGENCY SITUATIONS (ABES) |                                                                                           |   |                                                                                                                                                                                                                                                                                                                                                                            |                          |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Subtopic ABES 1.1 — Overview of ABES                    |                                                                                           |   |                                                                                                                                                                                                                                                                                                                                                                            |                          |
| ACS<br>ABES<br>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)<br><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, fuel jettison</i> | ALL                      |
| ACS<br>ABES<br>1.1.2                                    | Identify potential or actual abnormal and emergency situations.                           | 3 |                                                                                                                                                                                                                                                                                                                                                                            | ALL                      |
| ACS<br>ABES<br>1.1.3                                    | Take into account the procedures for given abnormal and emergency situations.             | 2 | ICAO Doc 4444 military procedures                                                                                                                                                                                                                                                                                                                                          | APP<br>ACP<br>APS<br>ACS |
| ACS<br>ABES<br>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                      |
| ACS<br>ABES<br>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  |                                                                                                                      |   |                                                                                                                                                                                |     |
| ACS<br>ABES<br>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 |
| ACS<br>ABES<br>2.1.2                             | Apply change of radiotelephony call sign.                                                                            | 3 | Regulation (EU) No 923/2012 ICAO Doc 4444                                                                                                                                      | ALL |
| Subtopic ABES 2.2 — Avoidance of mental overload |                                                                                                                      |   |                                                                                                                                                                                |     |
| ACS<br>ABES<br>2.2.1                             | Describe actions to keep the situation under control.                                                                | 2 | <i>Optional content: sector-splitting, holding, flow management, task delegation</i>                                                                                           | ALL |
| ACS<br>ABES<br>2.2.2                             | Organise priority of actions.                                                                                        | 4 |                                                                                                                                                                                | ALL |
| ACS<br>ABES<br>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, TWR and Air Defence Units, with ground staff, etc.</i> | ALL |
| ACS<br>ABES<br>2.2.4                             | Consider asking for help.                                                                                            | 2 |                                                                                                                                                                                | ALL |

# MILITARY AIR TRAFFIC CONTROLLER INITIAL RATING TRAINING - ACS COMPOSITION

| TOPIC ABES 2 — SKILLS IMPROVEMENT                                      |                                                                                                                  |   |                                                                                                                                                                                                                                                                                                     |                          |
|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Subtopic ABES 2.3 — Air-ground cooperation                             |                                                                                                                  |   |                                                                                                                                                                                                                                                                                                     |                          |
| ACS<br>ABES<br>2.3.1                                                   | Collect appropriate information relevant to the situation.                                                       | 3 |                                                                                                                                                                                                                                                                                                     | ALL                      |
| ACS<br>ABES<br>2.3.2                                                   | Assist the pilot.                                                                                                | 3 | Pilot workload<br><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                 |                                                                                                                  |   |                                                                                                                                                                                                                                                                                                     |                          |
| ACS<br>ABES<br>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)<br><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                                      |                                                                                                                  |   |                                                                                                                                                                                                                                                                                                     |                          |
| ACS<br>ABES<br>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<br><i>Optional content: simulator operation procedures</i>                                                                                                                                                                           | ALL                      |
| ACS<br>ABES<br>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<br><i>Optional content: prolonged loss of communication</i>                                                                                                                                                                                        | ALL                      |
| Subtopic ABES 3.3 — Unlawful interference and aircraft bomb threat     |                                                                                                                  |   |                                                                                                                                                                                                                                                                                                     |                          |
| ACS<br>ABES<br>3.3.1                                                   | Apply ATC procedures associated with unlawful interference and aircraft bomb threat.                             | 3 | Regulation (EU) No 923/2012<br><i>Optional content: simulator operation procedures, military procedures</i>                                                                                                                                                                                         | ALL                      |
| Subtopic ABES 3.4 — Strayed or unidentified aircraft                   |                                                                                                                  |   |                                                                                                                                                                                                                                                                                                     |                          |
| ACS<br>ABES<br>3.4.1                                                   | Apply the procedures for strayed aircraft.                                                                       | 3 | Regulation (EU) No 923/2012, military procedures<br><i>Optional content: inside controlled airspace, outside controlled airspace</i>                                                                                                                                                                | ALL                      |
| ACS<br>ABES<br>3.4.2                                                   | Apply the procedures for unidentified aircraft.                                                                  | 3 | Regulation (EU) No 923/2012, military procedures                                                                                                                                                                                                                                                    | ALL                      |
| Subtopic ABES 3.5 — Diversion                                          |                                                                                                                  |   |                                                                                                                                                                                                                                                                                                     |                          |
| ACS<br>ABES<br>3.5.1                                                   | Provide navigational assistance to aircraft diverting in emergency.                                              | 4 | Track/heading, distance, other navigational assistance<br><i>Optional content: nearest most suitable aerodrome</i>                                                                                                                                                                                  | APP<br>ACP<br>APS<br>ACS |
| Subtopic ABES 3.6 — Transponder failure                                |                                                                                                                  |   |                                                                                                                                                                                                                                                                                                     |                          |
| ACS<br>ABES<br>3.6.1                                                   | Apply procedures in the event of an SSR transponder failure.                                                     | 3 | Regulation (EU) No 923/2012<br><i>Optional content: total/partial failure, impact on ADS-B/Mode S capability</i>                                                                                                                                                                                    | APS<br>ACS               |
| Subtopic ABES 3.7 — Interception of civil aircraft                     |                                                                                                                  |   |                                                                                                                                                                                                                                                                                                     |                          |

# MILITARY AIR TRAFFIC CONTROLLER INITIAL RATING TRAINING - ACS COMPOSITION

| TOPIC ABES 3 — PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS (ABES) |                                                                        |   |                                                 |     |
|------------------------------------------------------------------------|------------------------------------------------------------------------|---|-------------------------------------------------|-----|
| ACS<br>ABES<br>3.7.1                                                   | Explain the procedures in the event of interception of civil aircraft. | 2 | Regulation (EU) No 923/2012 military procedures | ALL |
| <b>Subtopic ABESMIL 3.8 – QRA procedures</b>                           |                                                                        |   |                                                 |     |
| ACS<br>ABESMIL<br>3.8.1                                                | Apply the procedures in the event of interception of any aircraft.     | 3 | Military procedures                             | ALL |