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EUROCONTROL

EUROCONTROL Specification

EUROCONTROL Specifications for the ATCO Common Core Content Initial Training

Annex 7: Area Control Surveillance Rating - ACS

Edition: 2.0
Edition date: 02/04/2015
Reference Number: EUROCONTROL-SPEC-157

EUROPEAN ORGANISATION
FOR THE SAFETY OF AIR NAVIGATION

EUROCONTROL

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Annex 7 Area Control Surveillance Rating ACS

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Status	:	Released Issue
Intended for	:	NMD Stakeholders

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EXECUTIVE SUMMARY

Annex 2 of the EUROCONTROL Specification for the ATCO Common Core Content Initial Training V2.0 details the training objectives for the **Rating ATC training: Area Control Surveillance**.

For training organisations providing ATCO training to meet the requirements laid down in the **Commission Regulation (EU) 2015/340 laying down technical requirements and administrative procedures relating to air traffic controllers' licences and certificates**, and the acceptable means of compliance (AMCs) associated with the regulation, this syllabus does not change any of the content in the regulation, but rather provides a document that combines the relevant elements into a familiar user format. For European organisations not required to comply with EU legislation, it provides an **Area Control Surveillance Rating training syllabus** that retains references to ICAO documentation.

Rating training is defined ***as theoretical and practical training designed to impart knowledge and practical skills related to a specific rating and, if applicable, rating endorsement.***

The composition and topics were chosen based on the **Commission Regulation (EU) 2015/340** Annex I — Rating training (Reference: Annex I — Part ATCO Subpart D, Section 2, ATCO.D.010(a)(2)(vi)) and ICAO Annex 1 requirements for an Air Traffic Control licence. The structure of the syllabus reflects a logical grouping of objectives into coherent subjects.

The order of subjects and objectives is neither intended to convey a pedagogical sequence nor to indicate a relative level of importance. No recommendation is made in this area. When teaching the objectives, it is envisaged that different training methodologies will be used.

Prior to developing or updating the **ACS Rating training course,** training providers must be familiar with the information contained in the EUROCONTROL Specification for the ATCO Common Core Content Initial Training V2.0, particularly Section 6 (How to use this document) which contains, amongst other items, the fundamental principles that are applied to the Specification.

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SUBJECT 1: INTRODUCTION TO THE COURSE

The subject objective is:

Learners shall know and understand the training programme that they will follow and learn how to obtain the appropriate information.

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 course administration.	1		ALL
Subtopic INTR 1.3 - Study material and training documentation				
ACS INTR 1.3.1	Use appropriate documentation and their sources for course studies.	3	*Optional content: training documentation, library, CBT library, web, learning management server*	ALL
ACS INTR 1.3.2	Integrate appropriate information into course studies.	4	Training documentation *Optional content: supplementary information, library*	ALL

TOPIC INTR 2 - INTRODUCTION TO THE ATC TRAINING COURSE

Subtopic INTR 2.1 - Course content and organisation				
ACS INTR 2.1.1	State the different training methods applied in the course.	1	Theoretical training, practical training, self-study, types of training events	ALL
ACS INTR 2.1.2	State the subjects of the course and their purpose.	1		ALL
ACS INTR 2.1.3	Describe the organisation of theoretical training.	2	*Optional content: course programme*	ALL
ACS INTR 2.1.4	Describe the organisation of practical training.	2	*Optional content: PTP, simulation, briefing, debriefing, course programme*	ALL

Subtopic INTR 2.2 - Training ethos				
ACS INTR 2.2.1	Recognise the feedback mechanisms available.	1	Training progress, assessment, briefing, debriefing, learner/instructor feedback, instructor/instructor feedback	ALL
Subtopic INTR 2.3 - Assessment process				
ACS INTR 2.3.1	Describe the assessment process.	2		ALL

SUBJECT 2: AVIATION LAW

The subject objective is:

Learners shall know, understand and apply the Rules of the Air and the Regulations regarding reporting, airspace and appreciate the Licensing and Competence principles.

TOPIC LAW 1 - ATCO LICENSING/CERTIFICATE OF COMPETENCE

Subtopic LAW 1.1 - Privileges and conditions

ACS LAW 1.1.1	Appreciate the conditions which shall be met to issue an Area Control Surveillance rating.	3	Regulation (EU) 2015/340 on ATCO Licences ICAO Annex 1 *Optional content: National documents*	ACS
ACS LAW 1.1.2	Explain how to maintain and update professional knowledge and skills to retain competence in the operational environment.	2		ALL
ACS LAW 1.1.3	Explain the conditions for suspension/revocation of ATCO licence.	2	Regulation (EU) 2015/340 on ATCO Licences ICAO Annex 1	ALL

TOPIC LAW 2 - RULES AND REGULATIONS

Subtopic LAW 2.1 - Reports

ACS LAW 2.1.1	List the standard forms for reports.	1	Air traffic incident report *Optional content: routine air reports, breach of regulations, watch/log book, records*	ALL
ACS LAW 2.1.2	Describe the functions of, and processes for, reporting.	2	Reporting culture, air traffic incident report *Optional content: breach of regulations, watch/log book, records, voluntary reporting, ESARR 2*	ALL
ACS LAW 2.1.3	Use forms for reporting.	3	Regulation (EU) No 376/2014, air traffic incident reporting form(s) ICAO Doc 4444 Appendix 4, air traffic incident reporting form(s) *Optional content: routine air reports, breach of regulations, watch/log book, records*	ALL

Subtopic LAW 2.2 - Airspace				
ACS LAW 2.2.1	Appreciate classes and structure of airspace and their relevance to Area Control Surveillance rating operations.	3		ACS
ACS LAW 2.2.2	Provide planning, coordination and control actions appropriate to the airspace classification and structure.	4	*Optional content: Regulation (EU) No 923/2012, ICAO Annex 2, ICAO Annex 11, international requirements, civil requirements, military requirements, areas of responsibility, sectorization, national requirements*	ALL
ACS LAW 2.2.3	Appreciate responsibility for terrain clearance.	3		ALL

TOPIC LAW 3 - ATC SAFETY MANAGEMENT

Subtopic LAW 3.1 - Feedback process				
ACS LAW 3.1.1	State the importance of controller contribution to the feedback process.	1	*Optional content: voluntary reporting*	ALL
ACS LAW 3.1.2	Describe how reported occurrences are analysed.	2	*Optional content: ESARR 2, local procedures*	ALL
ACS LAW 3.1.3	Name the means used to disseminate recommendations.	1	*Optional content: safety letters, safety boards web pages*	ALL
ACS LAW 3.1.4	Appreciate the 'Just Culture' concept.	3	Benefits, prerequisites, constraints *Optional content: EAM 2 GUI 6, GAIN Report*	ALL
Subtopic LAW 3.2 - Safety Investigation				
ACS LAW 3.2.1	Describe role and mission of Safety Investigation in the improvement of safety.	2		ALL
ACS LAW 3.2.2	Define working methods of Safety Investigation.	1		ALL

SUBJECT 3: AIR TRAFFIC MANAGEMENT

The subject objective is:

Learners shall manage air traffic to ensure safe, orderly and expeditious services.

TOPIC ATM 1 - PROVISION OF SERVICES

Subtopic ATM 1.1 - Air traffic control (ATC) service				
ACS ATM 1.1.1	Appreciate own area of responsibility.	3		APP ACP APS ACS
ACS ATM 1.1.2	Provide area control service.	4	Regulation (EU) No 923/2012, ICAO Annex 11, ICAO Doc 7030, ICAO Doc 4444, operation manuals ICAO Annex 11, ICAO Doc 7030, ICAO Doc 4444, operation manuals	ACP ACS
Subtopic ATM 1.2 - Flight information service (FIS)				
ACS ATM 1.2.1	Provide FIS.	4	ICAO Doc 4444 *Optional content: national documents*	ALL
ACS ATM 1.2.2	Use ATS surveillance system for the provision of FIS.	3	ICAO Doc 4444, information to identified aircraft concerning: traffic, navigation *Optional content: weather*	APS ACS
ACS ATM 1.2.3	Issue appropriate information concerning the location of conflicting traffic.	3	ICAO Doc 4444, traffic information, essential traffic information	APS ACS *APP* *ACP*
Subtopic ATM 1.3 - Alerting service (ALRS)				
ACS ATM 1.3.1	Provide ALRS.	4	ICAO Doc 4444 *Optional content: national documents*	ALL
ACS ATM 1.3.2	Respond to distress and urgency messages and signals.	3	Regulation (EU) No 923/2012, ICAO Annex 10, ICAO Doc 4444 ICAO Annex 10, ICAO Doc 4444 *Optional content: EUROCONTROL Guidelines for Controller Training in the Handling of Unusual/Emergency Situations*	ALL

Subtopic ATM 1.3 - Alerting service (ALRS)				
ACS ATM 1.3.3	Use ATS surveillance system for the provision of ALRS.	3		APS ACS
Subtopic ATM 1.4 - ATS system capacity and air traffic flow management				
ACS ATM 1.4.1	Appreciate principles of ATS system capacity and air traffic flow management.	3	*Optional content: EUROCONTROL ATFCM Users Manual, FABs, FUA, free flight, etc.*	APP ACP APS ACS
ACS ATM 1.4.2	Apply flow management procedures in the provision of ATC.	3	*Optional content: EUROCONTROL ATFCM Users Manual*	APP ACP APS ACS
ACS ATM 1.4.3	Organise traffic flows and patterns to take account of airspace boundaries.	4	*Optional content: civil and military, controlled, uncontrolled, advisory, restricted, danger, prohibited, special rules, sector boundaries, national boundaries, FIR boundaries, delegated airspace, transfer of control, transfer of communications, en-route, off-route*	APP ACP APS ACS
ACS ATM 1.4.4	Organise traffic flows and patterns to take account of areas of responsibility.	4	*Optional content: EUROCONTROL ATFCM Users Manual*	APP ACP APS ACS
ACS ATM 1.4.5	Inform supervisor of situation.	3	*Optional content: abnormal situations, decrease in sector capacity, limitations on systems and equipment, changes in workload/capacity, unusual meteorological conditions, relevant information like: reported ground-based incidents, forest fire, smoke, oil pollution*	APP ACP APS ACS
ACS ATM 1.4.6	Organise traffic flows and patterns to take account of ATS surveillance system capability.	4		APS ACS

Subtopic ATM 1.5 - Airspace management (ASM)				
ACS ATM 1.5.1	Appreciate the principles and means of ASM.	3	Regulation (EC) No 551/2004, Regulation (EC) 2150/2005, Regulation (EC) No 730/2006 EUROCONTROL ASM HBK - Airspace Management Handbook for the application of FUA *Optional content: FABs, EUROCONTROL Specification for the application of FUA, TSAs, CDRs, CBAs*	APP ACP APS ACS
ACS ATM 1.5.2	Organise traffic to take account of ASM.	4	Real-time activation, deactivation or reallocation of airspace *Optional content: CDR, TSA, TRA, CBA*	*APS* ACS
TOPIC ATM 2 - COMMUNICATION				
Subtopic ATM 2.1 - Effective communication				
ACS ATM 2.1.1	Use approved phraseology.	3	ICAO Doc 4444 *Optional content: ICAO Doc 9432 RTF manual, standard words and phrases as contained in ICAO Annex 10 Vol. 2*	ALL
ACS ATM 2.1.2	Ensure effective communication.	4	Communication techniques, readback/verification of readback	ALL
TOPIC ATM 3 - ATC CLEARANCES AND ATC INSTRUCTIONS				
Subtopic ATM 3.1 - ATC clearances				
ACS ATM 3.1.1	Issue appropriate ATC clearances.	3	ICAO Doc 4444 *Optional content: national documents*	ALL
ACS ATM 3.1.2	Integrate appropriate ATC clearances in control service.	4		ALL
ACS ATM 3.1.3	Ensure the agreed course of action is carried out.	4		ALL

Subtopic ATM 3.2 - ATC instructions				
ACS ATM 3.2.1	Issue appropriate ATC instructions.	3	ICAO Doc 4444 *Optional content: national documents*	ALL
ACS ATM 3.2.2	Integrate appropriate ATC instructions in control service.	4		ALL
ACS ATM 3.2.3	Ensure the agreed course of action is carried out.	4		ALL

TOPIC ATM 4 - COORDINATION

Subtopic ATM 4.1 - Necessity for coordination				
ACS ATM 4.1.1	Identify the need for coordination.	3		ALL
Subtopic ATM 4.2 - Tools and methods for coordination				
ACS ATM 4.2.1	Use the available tools for coordination.	3	*Optional content: electronic transfer of flight data, telephone, interphone, intercom, direct speech, radiotelephone (RTF), local agreements, automated system coordination*	ALL
Subtopic ATM 4.3 - Coordination procedures				
ACS ATM 4.3.1	Initiate appropriate coordination.	3	Delegation/transfer of responsibility for air-ground communications and separation, transfer of control, etc. ICAO Doc 4444 *Optional content: release point*	ALL
ACS ATM 4.3.2	Analyse effect of coordination requested by an adjacent position/unit.	4	*Optional content: delegation/transfer of responsibility for air-ground communications and separation, release point, transfer of control, etc.*	ALL
ACS ATM 4.3.3	Select, after negotiation, an appropriate course of action.	5		ALL

Subtopic ATM 4.3 - Coordination procedures				
ACS ATM 4.3.4	Ensure the agreed course of action is carried out.	4		ALL
ACS ATM 4.3.5	Coordinate in the provision of FIS.	4	ICAO Doc 4444	ALL
ACS ATM 4.3.6	Coordinate in the provision of ALRS.	4	ICAO Doc 4444	ALL

TOPIC ATM 5 - ALTIMETRY AND LEVEL ALLOCATION

Subtopic ATM 5.1 - Altimetry				
ACS ATM 5.1.1	Allocate levels according to altimetry data.	4	ICAO Doc 8168, ICAO Doc 4444	ALL
ACS ATM 5.1.2	Ensure separation according to altimetry data.	4	*Optional content: transition level, transition altitude, transition layer, height, flight level, altitude, vertical distance to airspace boundaries*	ALL
Subtopic ATM 5.2 - Terrain clearance				
ACS ATM 5.2.1	Provide planning, coordination and control actions appropriate to the rules for minimum safe levels and terrain clearance.	4	*Optional content: minimum vectoring altitude, terrain clearance dimensions, minimum safe altitudes, transition level, minimum flight level, minimum sector altitude*	APS ACS

TOPIC ATM 6 - SEPARATIONS

Subtopic ATM 6.1 - Vertical separation				
ACS ATM 6.1.1	Provide standard vertical separation.	4	ICAO Doc 4444, ICAO Doc 7030, level allocation, during climb/descent, rate of climb/descent, RVSM, non-RVSM aircraft, holding pattern	ACP ACS
ACS ATM 6.1.2	Provide increased vertical separation.	4	ICAO Doc 4444, ICAO Doc 7030 *Optional content: level allocation, during climb/descent, rate of climb/descent*	APP ACP APS ACS

Subtopic ATM 6.1 - Vertical separation				
ACS ATM 6.1.3	Appreciate the application of vertical emergency separation.	3	ICAO Doc 4444, ICAO Doc 7030	APP ACP APS ACS
ACS ATM 6.1.4	Provide vertical separation in a surveillance environment.	4	Pressure altitude-derived information, pilot level reports *Optional content: into/out of ATS surveillance system coverage*	APS ACS
Subtopic ATM 6.2 - Longitudinal separation in a surveillance environment				
ACS ATM 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	ACS
Subtopic ATM 6.3 - Wake turbulence distance-based separation				
ACS ATM 6.3.1	Provide distance-based wake turbulence separation.	4	ICAO Doc 4444 *Optional content: national documents*	*APS* ACS
Subtopic ATM 6.4 - Separation based on ATS surveillance systems				
ACS ATM 6.4.1	Describe how separation based on ATS surveillance systems is applied.	2	ICAO Doc 4444	*APS* ACS
ACS ATM 6.4.2	Provide horizontal separation.	4	ICAO Doc 4444, ICAO Doc 7030, local operation manuals, holding	APS ACS
ACS ATM 6.4.3	Provide horizontal separation by vectoring in a variety of situations.	4	*Optional content: transit, meteorological phenomena, vectoring for approach, departure vs transit vs arrival*	*APS* ACS
ACS ATM 6.4.4	Ensure horizontal or vertical separation from airspace boundaries.	4	Adjacent sectors, PRD, TSAs.	*APS* ACS

TOPIC ATM 7 - AIRBORNE COLLISION AVOIDANCE SYSTEMS AND GROUND-BASED SAFETY NETS

Subtopic ATM 7.1 - Airborne collision avoidance systems

ACS ATM 7.1.1	Differentiate between ACAS advisory thresholds and separation standards applicable in the area control environment.	2	ICAO Doc 9863 *Optional content: EUROCONTROL TCAS web page*	ACP ACS
ACS ATM 7.1.2	Describe the controller responsibility during and following an ACAS RA reported by pilot.	2	ICAO Doc 4444	ALL
ACS ATM 7.1.3	Respond to pilot notification of actions based on airborne systems warnings.	3	ACAS, TAWS *Optional content: EUROCONTROL ACAS web page*	ALL

Subtopic ATM 7.2 - Ground-based safety nets

ACS ATM 7.2.1	Describe the controller responsibility during and following safety net warnings.	2	ICAO Doc 4444 *Optional content: STCA, MSAW, APW, APM*	APS ACS
ACS ATM 7.2.2	Respond to ground-based safety net warnings.	3	*Optional content: STCA, MSAW, APW, APM*	APS ACS

TOPIC ATM 8 - DATA DISPLAY

Subtopic ATM 8.1 - Data management				
ACS ATM 8.1.1	Update the data display to accurately reflect the traffic situation.	3	*Optional content: information displayed, strip marking procedures, electronic information data displays, actions based on traffic display information, calculation of EETs*	ALL
ACS ATM 8.1.2	Analyse pertinent data on data displays.	4		ALL
ACS ATM 8.1.3	Organise pertinent data on data displays.	4		ALL
ACS ATM 8.1.4	Obtain flight plan information.	3	CPL, FPL, supplementary information *Optional content: RPL, AFIL, etc.*	ALL
ACS ATM 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 ATM 9.1.1	Obtain information concerning the operational environment.	3	*Optional content: briefing, notices, local orders, verification of information*	ALL
ACS ATM 9.1.2	Ensure the integrity of the operational environment.	4	*Optional content: integrity of displays, verification of the information provided by displays, etc.*	APP ACP APS ACS
Subtopic ATM 9.2 - Verification of the currency of operational procedures				
ACS ATM 9.2.1	Check all relevant documentation before managing traffic.	3	*Optional content: briefing, LOAs, NOTAM, AICs*	ALL
ACS ATM 9.2.2	Manage traffic in accordance with procedural changes.	4		APP ACP APS ACS

Subtopic ATM 9.3 - Handover-takeover				
ACS ATM 9.3.1	Transfer information to the relieving controller.	3		ALL
ACS ATM 9.3.2	Obtain information from the controller handing over.	3		ALL

TOPIC ATM 10 - PROVISION OF CONTROL SERVICE

Subtopic ATM 10.1 - Responsibility and processing of information				
ACS ATM 10.1.1	Describe the division of responsibility between air traffic control units.	2	ICAO Doc 4444	*ALL*
ACS ATM 10.1.2	Describe the responsibility in regard to military traffic.	2	ICAO Doc 4444 *Optional content: ICAO Doc 9554*	*ALL*
ACS ATM 10.1.3	Describe the responsibility in regard to unmanned free balloons.	2	ICAO Doc 4444	APP ACP APS ACS
ACS ATM 10.1.4	Obtain operational information.	3	ICAO Doc 4444, local operation manuals	APP ACP APS ACS
ACS ATM 10.1.5	Interpret operational information.	5		APP ACP APS ACS
ACS ATM 10.1.6	Organise forwarding of operational information.	4	*Optional content: including the use of backup procedures*	APP ACP APS ACS
ACS ATM 10.1.7	Integrate operational information into control decisions.	4		APP ACP APS ACS
ACS ATM 10.1.8	Appreciate the influence of operational requirements.	3	*Optional content: military flying, calibration flights, aerial photography*	*ALL*

Subtopic ATM 10.2 - ATS surveillance service				
ACS ATM 10.2.1	Explain the responsibility for the provision of ATS surveillance service appropriate to ACS rating.	2	ICAO Doc 4444, ICAO Annex 11, local operation manuals	ACS
ACS ATM 10.2.2	Explain the functions that may be performed with the use of ATS surveillance systems derived information presented on a situation display.	2	ICAO Doc 4444	APS ACS
ACS ATM 10.2.3	Provide planning, coordination and control actions appropriate to the VFR and IFR in VMC and IMC.	4	Regulation (EU) No 923/2012, ICAO Annex 11, ICAO Doc 4444 ICAO Annex 2, ICAO Annex 11, ICAO Doc 4444	ACS *ACP*
ACS ATM 10.2.4	Apply the procedures for termination of ATS surveillance service.	3	ICAO Doc 4444 *Optional content: transfer of control, termination or interruption of ATS surveillance service*	APS ACS
Subtopic ATM 10.3 - Traffic management process				
ACS ATM 10.3.1	Ensure that situational awareness is maintained.	4	Information gathering, scanning, traffic projection	APS ACS
ACS ATM 10.3.2	Detect conflicts in time for appropriate resolution.	4		ALL
ACS ATM 10.3.3	Identify potential solutions to achieve a safe and effective traffic flow.	3		APP ACP APS ACS
ACS ATM 10.3.4	Evaluate possible outcomes of different planning and control actions.	5		APP ACP APS ACS
ACS ATM 10.3.5	Select an appropriate plan in time to achieve safe and effective traffic flow.	5		APP ACP APS ACS
ACS ATM 10.3.6	Ensure an adequate priority of actions.	4		*ALL*

Subtopic ATM 10.3 - Traffic management process				
ACS ATM 10.3.7	Execute selected plan in a timely manner.	3		APP ACP APS ACS
ACS ATM 10.3.8	Ensure a safe and efficient outcome is achieved.	4	Traffic monitoring, adaptability and follow up	ALL
Subtopic ATM 10.4 - Handling traffic				
ACS ATM 10.4.1	Manage arrivals, departures and overflights.	4		APP ACP APS ACS
ACS ATM 10.4.2	Balance the workload against personal capacity.	5	*Optional content: re-routing, re-planning, prioritising solutions, denying requests, delegating responsibility for separation*	APP ACP APS ACS
ACS ATM 10.4.3	Define flight path monitoring and vectoring.	1	ICAO Doc 4444	APS ACS
ACS ATM 10.4.4	Explain the requirements for vectoring and termination of vectoring.	2	ICAO Doc 4444	APS ACS
ACS ATM 10.4.5	Provide vectoring.	4	ICAO Doc 4444 *Optional content: separation, expediting arrivals, departures and/or climb to cruising levels, aircraft leaving the hold, navigation assistance, uncontrolled airspace, etc.*	APS ACS
ACS ATM 10.4.6	Apply the procedures for termination of vectoring.	3	ICAO Doc 4444	APS ACS
Subtopic ATM 10.5 - Control service with advanced system support				
ACS ATM 10.5.1	Appreciate the impact of advanced systems on the provision of area control service.	3	*Optional content: sequencing systems, automated holding lists, vertical traffic displays, conflict detection and decision making tools, automated information and coordination tools*	ACS

TOPIC ATM 11 - HOLDING

Subtopic ATM 11.1 - General holding procedures

ACS ATM 11.1.1	Apply holding procedures.	3	ICAO Doc 4444, holding instructions, allocation of holding levels, onward clearance times	APP ACP APS ACS
ACS ATM 11.1.2	Appreciate the factors affecting holding patterns.	3	Effect of speed, effect of level used, effect of navigation aid in use, turbulence, aircraft type	APP ACP APS ACS

Subtopic ATM 11.2 - Holding aircraft

ACS ATM 11.2.1	Calculate expected onward clearance times.	3		ACP ACS

Subtopic ATM 11.3 - Holding in a surveillance environment

ACS ATM 11.3.1	Organise traffic to separate other aircraft from holding aircraft.	4		APS ACS
ACS ATM 11.3.2	Integrate system support, when available.	4	*Optional content: arrival management system, automated holding lists, vertical traffic displays*	APS ACS

TOPIC ATM 12 - IDENTIFICATION

Subtopic ATM 12.1 - Establishment of identification

ACS ATM 12.1.1	Appreciate the precautions when establishing identification.	3		APS ACS
ACS ATM 12.1.2	Identify aircraft.	3	*Optional content: PSR, SSR or ADS identification method*	APS ACS
ACS ATM 12.1.3	Apply procedures in the case of misidentification.	3		APS ACS

Subtopic ATM 12.2 - Maintenance of identification				
ACS ATM 12.2.1	Appreciate the necessity to maintain identification.	3		APS ACS
Subtopic ATM 12.3 - Loss of identity				
ACS ATM 12.3.1	Appreciate when an aircraft identification is lost or in doubt.	3	*Optional content: out of ATS surveillance system coverage, failure of ATS surveillance system, weather clutter, other clutter, garbling, holding, etc.*	APS ACS
ACS ATM 12.3.2	Apply methods to re-establish identification.	3		APS ACS
ACS ATM 12.3.3	Respond to loss/doubt concerning identification.	3	*Optional content: procedural separation*	APS ACS
Subtopic ATM 12.4 - Position Information				
ACS ATM 12.4.1	Appreciate the circumstances when position information should be passed to the aircraft.	3		APS ACS
ACS ATM 12.4.2	State the format in which position information can be passed to aircraft.	1	ICAO Doc 4444	APS ACS
Subtopic ATM 12.5 - Transfer of identity				
ACS ATM 12.5.1	Apply the methods of transfer of identification.	3		APS ACS
ACS ATM 12.5.2	Appreciate the precautions when transferring identification.	3		APS ACS

SUBJECT 4: METEOROLOGY

The subject objective is:

Learners shall acquire, decode and make proper use of meteorological information relevant to the provision of ATS.

TOPIC MET 1 - METEOROLOGICAL PHENOMENA

Subtopic MET 1.1 - Meteorological phenomena

ACS MET 1.1.1	Appreciate the impact of adverse weather.	3	Thunderstorms, icing, jet streams, clear air turbulence (CAT), turbulence, microburst, severe mountain waves, line squalls, volcanic ash *Optional content: solar radiation*	ACP ACS
ACS MET 1.1.2	Integrate data about meteorological phenomena into provision of ATS.	4	Clearances, instructions and transmitted information *Optional content: relevant meteorological phenomena*	*ALL*
ACS MET 1.1.3	Use techniques to avoid adverse weather when necessary/possible.	3	Re-routing, level change, etc.	APP ACP APS ACS

TOPIC MET 2 - SOURCES OF METEOROLOGICAL DATA

Subtopic MET 2.1 - Sources of meteorological information

ACS MET 2.1.1	Obtain meteorological information	3	METAR, TAF, SIGMET, AIRMET *Optional content: AIREP/AIREP Special*	APP ACP APS ACS
ACS MET 2.1.2	Relay meteorological information.	3	ICAO Doc 4444 *Optional content: flight information centre, adjacent ATS unit*	*ALL*

SUBJECT 5: NAVIGATION

The subject objective is:

Learners shall analyse all navigational aspects in order to organise the traffic.

TOPIC NAV 1 - MAPS AND AERONAUTICAL CHARTS

Subtopic NAV 1.1 - Maps and charts

ACS NAV 1.1.1	Use relevant maps and charts.	3		*APP* ACP *APS* ACS

TOPIC NAV 2 - INSTRUMENT NAVIGATION

Subtopic NAV 2.1 - Navigational systems

ACS NAV 2.1.1	Manage traffic in case of change in the operational status of navigational systems.	4	*Optional content: limitations, status of ground-based and satellite-based systems*	APP ACP APS ACS
ACS NAV 2.1.2	Appreciate the effect of precision, limitations and change of the operational status of navigational systems.	3	*Optional content: limitations, status, degraded procedures*	*ALL*

Subtopic NAV 2.2 - Navigational assistance

ACS NAV 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* ACP *APS* ACS
ACS NAV 2.2.2	Assist aircraft in navigation when required.	3	Aircraft observed to be deviating from its known intended route, on request	APS ACS

Subtopic NAV 2.3 - PBN applications				
ACS NAV 2.3.1	State the navigation applications used in terminal and en-route environments.	1	Terminal-RNAV-1 (≈P-RNAV); En-route-RNAV-5 (B-RNAV) *Optional content: A-RNP, EC PBN Implementing Rule, ICAO Doc 9613*	ACP ACS
ACS NAV 2.3.2	Explain the principles and designation of navigation specifications in use.	2	*Optional content: performance, functionality, sensors, aircrew and controller requirements*	*APP* ACP *APS* ACS
ACS NAV 2.3.3	State future PBN developments.	1	A-RNP, APV *Optional content: RNP 3D, RNP 4D*	*ADI* *APP* ACP *APS* ACS

SUBJECT 6: AIRCRAFT

The subject objective is:

Learners shall assess and integrate aircraft performance in the provision of ATS.

TOPIC ACFT 1 - AIRCRAFT INSTRUMENTS

Subtopic ACFT 1.1 - Aircraft instruments

ACS ACFT 1.1.1	Integrate information from aircraft instruments provided by the pilot in the provision of ATS.	4		ALL
ACS ACFT 1.1.2	Explain the operation of aircraft radio equipment.	2	*Optional content: radios (number of), emergency radios*	ALL
ACS ACFT 1.1.3	Explain the operation of on-board surveillance equipment.	2	Transponders: equipment Mode A, Mode C, Mode S, ADS capability	ADI APS ACS

TOPIC ACFT 2 - AIRCRAFT CATEGORIES

Subtopic ACFT 2.1 - Wake turbulence

ACS ACFT 2.1.1	Explain the wake turbulence effect and associated hazards to the succeeding aircraft.	2		ALL
ACS ACFT 2.1.2	Appreciate the techniques used to prevent hazards associated with wake turbulence on succeeding aircraft.	3		ALL

TOPIC ACFT 3 - FACTORS AFFECTING AIRCRAFT PERFORMANCE

Subtopic ACFT 3.1 - Climb factors

ACS ACFT 3.1.1	Integrate the influence of factors affecting aircraft during climb.	4	*Optional content: speed, mass, air density, cabin pressurisation, wind and temperature*	APP ACP APS ACS

Subtopic ACFT 3.2 - Cruise factors				
ACS ACFT 3.2.1	Integrate the influence of factors affecting aircraft during cruise.	4	Level, cruising speed, wind, mass, cabin pressurisation	APP ACP APS ACS
Subtopic ACFT 3.3 - Descent factors				
ACS ACFT 3.3.1	Integrate the influence of factors affecting aircraft during descent.	4	*Optional content: wind, speed, rate of descent, cabin pressurisation*	ACP ACS
Subtopic ACFT 3.4 - Economic factors				
ACS ACFT 3.4.1	Integrate consideration of economic factors affecting aircraft.	4	*Optional content: routing, level, speed, rate of climb and rate of descent, approach profile, top of descent*	ACP ACS
ACS ACFT 3.4.2	Use continuous climb techniques where applicable.	3		*APP* ACP *APS* ACS
ACS ACFT 3.4.3	Use direct routing where applicable.	3		*APP* ACP *APS* ACS
Subtopic ACFT 3.5 - Environmental factors				
ACS ACFT 3.5.1	Appreciate the performance restrictions due to environmental constraints.	3	*Optional content: fuel dumping, minimum flight levels, continuous descent operations*	ACP ACS

TOPIC ACFT 4 - AIRCRAFT DATA

Subtopic ACFT 4.1 - Performance data				
ACS ACFT 4.1.1	Integrate the average performance data of a representative sample of aircraft which will be encountered in the operational/working environment into the provision of a control service.	4	Performance data under a representative variety of circumstances	APP ACP APS ACS

SUBJECT 7: HUMAN FACTORS

The subject objective is:

Learners shall recognise the necessity to constantly extend their knowledge and analyse factors which affect personal and team performance.

TOPIC HUM 1 - PSYCHOLOGICAL FACTORS

Subtopic HUM 1.1 - Cognitive

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
ACS HUM 1.1.3	Monitor the effect of human information processing factors on decision making.	3	*Optional content: workload, stress, interpersonal relations, distraction, confidence*	ALL

TOPIC HUM 2 - MEDICAL AND PHYSIOLOGICAL FACTORS

Subtopic HUM 2.1 - Fatigue

ACS HUM 2.1.1	State factors that cause fatigue.	1	Shift work *Optional content: night shifts and rosters*	ALL
ACS HUM 2.1.2	Describe the onset of fatigue.	2	*Optional content: lack of concentration, listlessness, irritability, frustration, ICAO Circular 241 – AN/145 Human factors in Air Traffic Control*	ALL
ACS HUM 2.1.3	Recognise the onset of fatigue in self.	1	*Optional content: ICAO Circular 241 – AN/145 Human factors in Air Traffic Control*	ALL
ACS HUM 2.1.4	Recognise the onset of fatigue in others.	1		ALL
ACS HUM 2.1.5	Describe appropriate action when recognising fatigue.	2		ALL

Subtopic HUM 2.2 - Fitness				
ACS HUM 2.2.1	Recognise signs of lack of personal fitness.	1		ALL
ACS HUM 2.2.2	Describe actions when aware of a lack of personal fitness.	2		ALL
TOPIC HUM 3 - SOCIAL AND ORGANISATIONAL FACTORS				
Subtopic HUM 3.1 - Team resource management (TRM)				
ACS HUM 3.1.1	State the relevance of TRM.	1	*Optional content: TRM course, EUROCONTROL Guidelines for the development of TRM training*	ALL
ACS HUM 3.1.2	State the content of the TRM concept.	1	*Optional content: team work, human error, team roles, stress, decision making, communication, situational awareness*	ALL
Subtopic HUM 3.2 - Teamwork and team roles				
ACS HUM 3.2.1	Identify reasons for conflict.	3		ALL
ACS HUM 3.2.2	Describe actions to prevent human conflicts.	2	*Optional content: TRM team roles*	ALL
ACS HUM 3.2.3	Describe strategies to cope with human conflicts.	2	*Optional content: in your team, in the simulator*	ALL
Subtopic HUM 3.3 - Responsible behaviour				
ACS HUM 3.3.1	Consider the factors which influence responsible behaviour.	2	*Optional content: situation, team, personal situation and judgement, instance of justification, moral motivation, personality*	ALL
ACS HUM 3.3.2	Apply responsible judgement.	3	Case study and discussion about a dilemma situation	ALL

TOPIC HUM 4 - STRESS

Subtopic HUM 4.1 - Stress				
ACS HUM 4.1.1	Recognise the effects of stress on performance.	1	Stress and its symptoms in self and in others	ALL
Subtopic HUM 4.2 - Stress management				
ACS HUM 4.2.1	Act to reduce stress.	3	The effect of personality in coping with stress, the benefits of active stress management	ALL
ACS HUM 4.2.2	Respond to stressful situation by offering, asking or accepting assistance.	3	*Optional content: the benefits of offering, accepting and asking for help in stressful situations*	ALL
ACS HUM 4.2.3	Recognise the effect of shocking and stressful events.	1	Self and others, abnormal situations, CISM	ALL
ACS HUM 4.2.4	Consider the benefits of Critical Incident Stress Management (CISM).	2		ALL
ACS HUM 4.2.5	Explain procedures used following an incident/accident.	2	*Optional content: CISM, counselling, human element*	ALL

TOPIC HUM 5 - HUMAN ERROR

Subtopic HUM 5.1 - Human error				
ACS HUM 5.1.1	Explain the relationship between error and safety.	2	Number and combination of errors, proactive versus reactive approach to discovery of error *Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control*	ALL
ACS HUM 5.1.2	Differentiate between the types of error.	2	Slips, lapses, mistakes *Optional content: Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control*	ALL

Subtopic HUM 5.1 - Human error				
ACS HUM 5.1.3	Describe error-prone conditions.	2	*Optional content: increase in traffic, changes in procedures, complexities of systems or traffic, weather, unusual occurrences*	ALL
ACS HUM 5.1.4	Collect examples of different error types, their causes and consequences in ATC.	3	*Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control*	ALL
ACS HUM 5.1.5	Explain how to detect errors to compensate for them.	2	STCA, MSAW, individual and collective strategy *Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control*	ALL
ACS HUM 5.1.6	Execute corrective actions.	3	Error compensation *Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control*	ALL
ACS HUM 5.1.7	Explain the importance of error management.	2	*Optional content: prevention of incidents, safety improvement, revision of procedures and/or working practises*	ALL
ACS HUM 5.1.8	Describe the impact on an ATCO following an occurrence/incident.	2	*Optional content: reporting, SMS, investigation, CISM*	ALL
Subtopic HUM 5.2 - Violation of rules				
ACS HUM 5.2.1	Explain the causes and dangers of violation of rules becoming accepted as a practice.	2	*Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control*	ALL

TOPIC HUM 6 - COLLABORATIVE WORK

Subtopic HUM 6.1 - Communication				
ACS HUM 6.1.1	Use communication effectively in ATC.	3		ALL
ACS HUM 6.1.2	Analyse examples of pilot and controller communication for effectiveness.	4		ALL
Subtopic HUM 6.2 - Collaborative work within the same area of responsibility				
ACS HUM 6.2.1	List communication means between controllers in charge of the same area of responsibility (sector or tower).	1	*Optional content: electronic, written, verbal and non-verbal communication*	ALL
ACS HUM 6.2.2	Explain consequences of the use of communication means on effectiveness.	2	*Optional content: strips legibility and encoding, labels designation, feedback*	ALL
ACS HUM 6.2.3	List possible actions to provide a safe position handover.	1	*Optional content: rigour, preparation, overlap time*	ALL
ACS HUM 6.2.4	Explain consequences of a missed position handover process.	2		ALL
Subtopic HUM 6.3 - Collaborative work between different areas of responsibility				
ACS HUM 6.3.1	List factors and means for an effective coordination between sectors and/or tower positions.	1	*Optional content: other sectors constraints, electronic coordination tools*	ALL
Subtopic HUM 6.4 - Controller/pilot cooperation				
ACS HUM 6.4.1	Describe parameters affecting controller/pilot cooperation.	2	*Optional content: workload, mutual knowledge, controller vs pilot mental picture*	ALL

SUBJECT 8: EQUIPMENT AND SYSTEMS

The subject objective is:

Learners shall integrate knowledge and understanding of the basic working principles of equipment and systems and comply with the equipment and system degradation procedures in the provision of ATS.

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 *Optional content: frequency selection, standby equipment*	ALL
ACS EQPS 1.1.2	Identify indications of operational status of radio equipment.	3	*Optional content: indicator lights, serviceability displays, selector/frequency displays*	ALL
ACS EQPS 1.1.3	Consider radio range.	2	*Optional content: transfer to another frequency, apparent radio failure, failure to establish radio contact, frequency protection range*	APP ACP APS ACS

Subtopic EQPS 1.2 - Other voice communications

ACS EQPS 1.2.1	Operate landline communications.	3	*Optional content: telephone, interphone and intercom equipment*	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	*Optional content: movement and control messages, NOTAM, SNOWTAM, BIRDTAM, etc.*	ALL

Subtopic EQPS 2.2 - Automatic data interchange				
ACS EQPS 2.2.1	Use automatic data transfer equipment where available.	3	*Optional content: sequencing systems, automated information and coordination, OLDI*	ADV ADI APS 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	*Optional content: situation displays, flight progress board, flight data display, radio, telephone, maps and charts, strip-printer, clock, information systems, UDF/VDF*	ALL
ACS EQPS 3.1.3	Operate 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 availability of information material.	3		ALL
ACS EQPS 3.2.3	Obtain information from equipment.	3		APP ACP APS ACS
Subtopic EQPS 3.3 - Flight data systems				
ACS EQPS 3.3.1	Use the flight data information at controller working position.	3		ALL

Subtopic EQPS 3.4 - Use of ATS surveillance system				
ACS EQPS 3.4.1	Use the ATS surveillance system functions.	3		APS ACS
ACS EQPS 3.4.2	Analyse the information provided by the ATS surveillance system.	4		APS ACS
ACS EQPS 3.4.3	Assign codes.	4		APS ACS
ACS EQPS 3.4.4	Appreciate the use of advanced surveillance technology.	3	*Optional content: Mode S, ADS-B, MLAT*	APS ACS
Subtopic EQPS 3.5 - Advanced systems				
ACS EQPS 3.5.1	Appreciate the use of controller pilot datalink communications when available.	3		APS ACS
ACS EQPS 3.5.2	Appreciate the use of information provided by advanced systems.	3	*Optional content: trajectory-based information, MTCD, MONA, etc.*	APS ACS

TOPIC EQPS 4 - FUTURE EQUIPMENT

Subtopic EQPS 4.1 - New developments				
ACS EQPS 4.1.1	Recognise future developments.	1	New advanced systems	ALL

TOPIC EQPS 5 - EQUIPMENT AND SYSTEMS LIMITATIONS AND DEGRADATION

Subtopic EQPS 5.1 - Reaction to limitations				
ACS EQPS 5.1.1	Take account of the limitations of equipment and systems.	2		ALL
ACS EQPS 5.1.2	Respond to technical deficiencies of the operational position.	3	Notification procedures, responsibilities	ALL
Subtopic EQPS 5.2 - Communication equipment degradation				
ACS EQPS 5.2.1	Identify that communication equipment has degraded.	3	*Optional content: ground-air and landline communications*	APP ACP APS ACS
ACS EQPS 5.2.2	Apply contingency procedures in the event of communication equipment degradation.	3	Procedures for total or partial degradation of ground-air and landline communications, alternative methods of transferring data	APP ACP APS ACS
Subtopic EQPS 5.3 - Navigational equipment degradation				
ACS EQPS 5.3.1	Identify when a navigational equipment failure will affect operational ability.	3	*Optional content: VOR, navigational aids*	ALL
ACS EQPS 5.3.2	Apply contingency procedures in the event of a navigational equipment degradation.	3	*Optional content: vertical separation, information to aircraft, navigational assistance, seeking assistance from adjacent units*	ADI APP ACP APS ACS
Subtopic EQPS 5.4 - Surveillance equipment degradation				
ACS EQPS 5.4.1	Identify that surveillance equipment has degraded.	3	Partial power failure, loss of certain facilities, total failure	APS ACS
ACS EQPS 5.4.2	Apply contingency procedures in the event of surveillance equipment degradation.	3	*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*	APS ACS

Subtopic EQPS 5.5 - ATC processing system degradation				
ACS EQPS 5.5.1	Identify a processing system degradation.	3	*Optional content: FDPS, SDPS, software processing of situation display*	APS ACS
ACS EQPS 5.5.2	Apply contingency procedures in the event of a processing system degradation.	3		APS ACS

SUBJECT 9: PROFESSIONAL ENVIRONMENT

The subject objective is:

Learners shall identify the need for close cooperation with other parties concerning ATM operations and appreciate aspects of environmental protection.

TOPIC PEN 1 - FAMILIARISATION

Subtopic PEN 1.1 - Study visit to area control centre

ACS PEN 1.1.1	Appreciate the functions and provision of an operational area control service.	3	Study visit to area control centre	ACP ACS

TOPIC PEN 2 - AIRSPACE USERS

Subtopic PEN 2.1 - Contributors to civil ATS operations

ACS PEN 2.1.1	Characterise civil ATS activities in area control centre.	2	Study visit to an area control centre *Optional content: familiarisation visits to TWR, APP, AIS, RCC*	ACP ACS
ACS PEN 2.1.2	Characterise other parties interfacing with ATS operations.	2	*Optional content: familiarisation visits to engineering services, fire and emergency services, airline operations offices*	ALL

Subtopic PEN 2.2 - Contributors to military ATS operations

ACS PEN 2.2.1	Characterise military ATS activities.	2	*Optional content: familiarisation visits to TWR, APP, ACC, AIS, RCC, Air Defence Units*	ALL

TOPIC PEN 3 - CUSTOMER RELATIONS

Subtopic PEN 3.1 - Provision of services and user requirements

ACS PEN 3.1.1	Identify the role of ATC as a service provider.	3		ALL
ACS PEN 3.1.2	Appreciate ATS users requirements.	3		ALL

TOPIC PEN 4 - ENVIRONMENTAL PROTECTION

Subtopic PEN 4.1 - Environmental protection

ACS PEN 4.1.1	Appreciate the mitigation techniques used en-route to minimise the aviation's impact on the environment.	3	*Optional content: free route airspace (FRA), night/weekend routes, ICAO Circular 303 - Operational opportunities to minimize fuel use and reduce emissions*	ACP ACS

SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS

The subject objective is:

Learners shall develop professional attitudes to manage traffic in abnormal and emergency situations.

TOPIC ABES 1 - ABNORMAL AND EMERGENCY SITUATIONS (ABES)

Subtopic ABES 1.1 - Overview of ABES

ACS ABES 1.1.1	List common abnormal and emergency situations.	1	*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*	ALL
ACS ABES 1.1.2	Identify potential or actual abnormal and emergency situations.	3		ALL
ACS ABES 1.1.3	Take into account the procedures for given abnormal and emergency situations.	2	*Optional content: ICAO Doc 4444*	APP ACP APS ACS
ACS ABES 1.1.4	Take into account that procedures do not exist for all abnormal and emergency situations.	2	*Optional content: real life examples*	ALL
ACS ABES 1.1.5	Consider how the evolution of a situation may have an impact on safety.	2	*Optional content: separation, information, coordination*	ALL

TOPIC ABES 2 - SKILLS IMPROVEMENT

Subtopic ABES 2.1 - Communication effectiveness

ACS ABES 2.1.1	Ensure effective communication in all circumstances including the case where standard phraseology is not applicable.	4	Phraseology, vocabulary, readback, silence instruction	ALL
ACS ABES 2.1.2	Apply change of radiotelephony call sign.	3	ICAO Doc 4444	ALL

Subtopic ABES 2.2 - Avoidance of mental overload				
ACS ABES 2.2.1	Describe actions to keep control of the situation.	2	*Optional content: sector splitting, holding, flow management, task delegation*	ALL
ACS ABES 2.2.2	Organise priority of actions.	4		ALL
ACS ABES 2.2.3	Ensure effective circulation of information.	4	*Optional content: between executive and planner/coordinator, with the supervisor, between sectors, between ACC, APP and TWR , with ground staff, etc.*	ALL
ACS ABES 2.2.4	Consider asking for help.	2		ALL
Subtopic ABES 2.3 - Air / ground cooperation				
ACS ABES 2.3.1	Collect appropriate information relevant to the situation.	3		ALL
ACS ABES 2.3.2	Assist the pilot.	3	Pilot workload *Optional content: instructions, information, support, human factors, etc.*	ALL

TOPIC ABES 3 - PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS

Subtopic ABES 3.1 - Application of procedures for ABES				
ACS ABES 3.1.1	Apply the procedures for given abnormal and emergency situations.	3	*Optional content: EATM Guidelines for Controller Training in the Handling of Unusual/Emergency Situations, ambulance flights, ground based safety nets alerts, airframe failure*	ALL

Subtopic ABES 3.2 - Radio failure				
ACS ABES 3.2.1	Describe the procedures followed by a pilot when he/she experiences complete or partial radio failure.	2	ICAO Doc 7030 *Optional content: military procedures*	ALL
ACS ABES 3.2.2	Apply the procedures to be followed when a pilot experiences complete or partial radio failure.	3	*Optional content: prolonged loss of communication*	ALL
Subtopic ABES 3.3 - Unlawful interference and aircraft bomb threat				
ACS ABES 3.3.1	Apply ATC procedures associated with unlawful interference and aircraft bomb threat.	3	ICAO Doc 4444	ALL
Subtopic ABES 3.4 - Strayed or unidentified aircraft				
ACS ABES 3.4.1	Apply the procedures in the case of strayed aircraft.	3	ICAO Doc 4444 *Optional content: inside controlled airspace, outside controlled airspace*	ALL
ACS ABES 3.4.2	Apply the procedures in the case of unidentified aircraft.	3	ICAO Doc 4444	ALL
Subtopic ABES 3.5 - Diversions				
ACS ABES 3.5.1	Provide navigational assistance to diverting emergency aircraft.	4	Track/heading, distance, other navigational assistance *Optional content: nearest most suitable aerodrome*	APP ACP APS ACS
Subtopic ABES 3.6 - Transponder failure				
ACS ABES 3.6.1	Apply procedures in the event of an SSR transponder failure.	3	ICAO Doc 4444, ICAO Doc 7030 *Optional content: total/partial failure, impact on ADS-B/Mode S capability*	APS ACS

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