



European Union Aviation Safety Agency

Notice of Proposed Amendment 2021-08(C)

in accordance with

Articles 6(3), 7 and 8 (Standard procedure: public consultation) of MB Decision
No 18-2015

Enhanced mobility options and streamlined qualifications
for air traffic controllers

RMT.0668

AMC1 ATCO.D.010(a)(2)(i) Composition of initial training

AERODROME CONTROL ~~INSTRUMENT RATING FOR TOWER ADI (TWR ADC)~~ TRAINING ~~SUBJECT OBJECTIVES AND TRAINING OBJECTIVES~~

This document has been provided to help reviewers make a comparison between the Easy Access Rules for Air Traffic Controllers' Licensing and Certification (Regulation (EU) 2015/340) and associated AMCs published in December 2019 (Reference: AMC1 to ATCO.D.010(a)(2)(ii) Composition of initial training) and the amendments proposed by the ATCO CCC TF. Proposed changes are the result of the review process agreed between EASA and EUROCONTROL and performed in 2020.

TRACK CHANGES FILE

The text of the amendment is arranged to show deleted, new or relocated text as shown below:

Deleted information is in red colour with the ~~strikethrough effect~~

New information is in blue colour text.

Relocated information is in black colour with the ~~strikethrough effect~~

The rationale/explanation of the change is, when appropriate, in the blue text box beneath the modified objective.

When an existing objective has been relocated (and consequently renumbered), the new number is shown in black to the left of the objective and the original (former version) number in red below the new one.

3.2.1 current objective number (if not modified it is the same as in the earlier version)

3.3.3 former objective number that may have an additional subject indication

if moved from one subject to another or B(asic) and R(ating) if moved from one syllabus to another. In Human Factors subject HUMUC indication means that related objective has been deleted and proposed for relocation to later stages of ATCO training (Unit-Continuation).

1.5.3 new objective number for relocated objectives at its original location that

may have an additional indication of a new subject or B(asic) and R(ating) if moved from one syllabus to another.

AERODROME CONTROL ~~INSTRUMENT RATING FOR TOWER ADI (TWR ADC)~~ TRAINING — ~~SUBJECT OBJECTIVES AND TRAINING OBJECTIVES~~

(a) The general principles that apply to this AMC are contained in AMC1 ATCO.D.010(a).

(b) The ATCO rating training Aerodrome Control ~~Instrument~~ Rating ~~for Tower ADI (TWR ADC)~~ should contain the following ~~subject objectives and~~ training objectives that are associated with the subjects, topics and subtopics contained in Appendix ~~4~~ ~~3 to of~~ Annex I to Commission Regulation (EU) 2015/340 — Aerodrome Control ~~Instrument~~ Rating ~~for Tower ADI (TWR ADC)~~.

(c) Subjects, topics and subtopics from Appendix ~~4~~ ~~3 to of~~ Annex I to Commission Regulation (EU) 2015/340 are repeated in this AMC for the convenience of the reader and do not form part of it.

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.~~

INTR 1		COURSE MANAGEMENT		
INTR 1.1		Course introduction		
ADC I(TWR)	Explain the aims and main objectives of the course.	2		ALL
INTR		2		
1.1.1				
<p>ACCCT TF decided to discontinue (delete) the subject objectives, now being AMC's to ATCO Licensing Regulation, since they have no added value to the remaining training content (subjects/topics/subtopisc in the IR and associated training objectives in the AMC's).</p> <p>The proposal to remove the whole subject INTRODUCTION TO THE COURSE as regulatory requirement not accepted. Although not required by ICAO it is very useful and represents a good practice that should continue.</p>				
INTR 1.2		Course administration		
ADC I(TWR)	State how the course is administered.	1		ALL
INTR		1		
1.2.1				
INTR 1.3		Study material and training documentation		
ADC I(TWR)	Use appropriate documents and their sources for course studies.	3	<i>Optional content: training documentation, library, CBT library, web, learning management server</i>	ALL
INTR		3		
1.3.1				
ADC I(TWR)	Integrate appropriate information into course studies.	4	Training documentation	ALL
INTR		4	<i>Optional content: supplementary information, library</i>	
1.3.2				
INTR 2		INTRODUCTION TO THE ATC TRAINING COURSE		
INTR 2.1		Course content and organisation		
ADC I(TWR)	State the different training methods used during the course.	1	Theoretical training, practical training, self-study, types of training events	ALL
INTR		1		
2.1.1				
ADC I(TWR)	State the subjects covered by the course and their purpose.	1		ALL
INTR		1		
2.1.2				

ADC I(TWR) INTR 2.1.3	Describe the organisation of theoretical training.	2 2	Optional content: course programme	ALL
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ADC I(TWR) INTR 2.1.4	Describe the organisation of practical training.	2 2	Optional content: PTP, simulation, briefing, debriefing, course programme	ALL
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INTR 2.2 Training ethos

ADC I(TWR) INTR 2.2.1	Recognise the feedback mechanisms available.	1 1	Training progress, assessment, briefing, debriefing, learner/instructor feedback, instructor/instructor feedback	ALL
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INTR 2.3 Assessment process

ADC I(TWR) INTR 2.3.1	Describe the assessment process.	2 2		ALL
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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:~~

LAW 1 ATCO LICENSING/CERTIFICATE OF COMPETENCE

LAW 1.1 Privileges and conditions

ADC I(TWR) LAW 1.1.1	Appreciate the conditions which shall be met to issue an Aerodrome Control Instrument rating with Tower Control endorsement.	3 3	Regulation (EU) 2015/340 on ATCO Licences <i>Optional content: national documents</i>	ADC
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Alignment with the new rating terminology - ADC

ADC I(TWR) LAW 1.1.2	Explain how to maintain and update professional knowledge and skills to retain competence in the operational environment.	2 2		ALL
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ADC I(TWR) LAW 1.1.3	Explain the conditions for suspension/revocation of ATCO licence.	2 2	Regulation (EU) 2015/340 on ATCO Licences	ALL
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LAW 2 RULES AND REGULATIONS

LAW 2.1 Reports

ADC I(TWR) LAW 2.1.1 2.1.2 2.1.1	Describe the functions of, and processes for, reporting.	2 2	Reporting culture, mandatory and voluntary occurrence reporting forms air traffic incident report, Regulation (EU) No 376/2014, Regulation (EU) No 2015/1018 <i>Optional content: breach of regulations, watchbook/logbook, records, voluntary reporting</i>	ALL
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The proposal to delete this objective as being more appropriate for Unit training not accepted. Content is modified to stress the importance of occurrence reports (mandatory and voluntary)

ADC I(TWR) LAW 2.1.1 2.1.1	List the standard forms for reports:	1 1	Air traffic incident report <i>Optional content: routine air reports, breach of regulations, watch/log book, records</i>	ALL
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The proposal to delete this objective as already covered in the following L2 and L3 objectives accepted.

ADC I(TWR) LAW 2.1.2	Use forms for reporting.	3 3	Regulation (EU) No 376/2014, mandatory and voluntary occurrence reporting forms air-traffic incident reporting form(s)	ALL
2.1.3				
2.1.2				

*Optional content: routine air reports,
breach of regulations, watchbook/logbook,
records*

Content improved but proposal to move this LAW 2.1.2 objective to ABES subject not accepted - The location of the practical objective in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with other subjects/topics...) The idea behind this L3 objective is to apply some practical examples in the Rating training that should prepare students for application in their future working environment! The form used could be any but based on Reg. (EU) No 376/2014 Annex 1 common and specific data fields.

LAW 2.2 Airspace

ADC I(TWR) LAW 2.2.1	Appreciate airspace classes and structure and their relevance to operations using the Aerodrome Control instrument rating with Tower Control endorsement.	3 3		ADC
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Alignment with the new rating terminology - ADC

ADC I(TWR) LAW 2.2.2	Provide planning, coordination and control actions appropriate to the classification and structure of airspace.	4 4	<i>Optional content: Regulation (EU) No 923/2012, international requirements, civil requirements, military requirements, areas of responsibility, sectorization, national requirements</i>	ALL
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ADC I(TWR) LAW 2.2.3	Appreciate responsibility for terrain clearance.	3 3		ALL
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LAW 3 ATS ATC SAFETY MANAGEMENT

LAW 3.1 Feedback process

ADC I(TWR) LAW 3.1.1	State the importance of controller contribution to the feedback process.	1 1	<i>Optional content: voluntary reporting</i>	ALL
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The proposal to expand the relevance of safety management to ATS (not only ATC) accepted - topic title modified accordingly.

ADC I(TWR) LAW 3.1.2	Describe how reported occurrences are analysed.	2 2	<i>Optional content: Regulation (EU) No 376/2014, local procedures</i>	ALL
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ADC I(TWR) LAW 3.1.3	Name the means used to disseminate recommendations.	1 1	Optional content: safety letters, safety boards web pages	ALL
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ADC I(TWR) LAW 3.1.4	Appreciate the "Just Culture" concept.	3 3	Benefits, prerequisites, constraints Optional content: https://www.Skybrary.aero	ALL
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LAW 3.2 Safety investigation

ADC I(TWR) LAW 3.2.1	Describe role and objectives mission of safety investigation in the improvement of safety.	2 2		ALL
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Improved wording but proposal to add ICAO Annex 13 to content not accepted - no need for any (regulatory) reference.

ADC I(TWR) LAW 3.2.2	Define working methods of Safety Investigation.	1 1		ALL
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Objective deleted - partially covered in the objective 3.2.1 and working methods not important for ATCOs.

Subject 3 : AIR TRAFFIC MANAGEMENT

The subject objective is:

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

ATM 1		PROVISION OF SERVICES		
ATM 1.1		Aerodrome control service		
ADC I(TWR) ATM 1.1.1	Appreciate areas of responsibility.	3 3	Control zone, traffic circuit, manoeuvring area, movement area, vicinity <i>Optional content: ATZ</i>	ADC
ADC I(TWR) ATM 1.1.2	Provide aerodrome control service.	4 4	Regulation (EU) No 923/2012, ICAO Annex 11, ICAO Doc 7030, ICAO Doc 4444 , Regulation (EU) 2017/373, operating procedures for the simulated/training environment operation manuals	ADC
More appropriate wording for simulation environment and regulatory update for referenced documents.				
ATM 1.2		Flight information service (FIS)		
ADC I(TWR) ATM 1.2.1	Describe the information that shall be passed to aircraft by an aerodrome controller.	2 2	ICAO Doc 4444 Regulation (EU) 2017/373 <i>Optional content: ICAO Doc 4444</i>	ADC
Regulatory update - Regulation (EU) 2017/373 with ICAO content transposed in the AMCs and GM to Part.ATS (ATS.TR.300(c)(1) and ATS.TR.210 - 250), though not all from D4444 chapter 7.4, and, therefore ICAO Doc 4444 moved to optional content.				
ADC I(TWR) ATM 1.2.2	Provide FIS.	4 4	ICAO Doc 4444 Regulation (EU) No 923/2012, Regulation (EU) 2017/373 <i>Optional content: national documents</i>	ALL
Regulatory update - Regulation (EU) 373/2017 - Transposed within ATS.TR.300(c)(1). and ATS.TR.305 and associated AMC1 ATS.TR.305				
ADC I(TWR) ATM 1.2.3	Issue appropriate information.	3 3	ICAO Doc 4444 Regulation (EU) 2017/373 essential local traffic, traffic information	ADC
Regulatory updated - Regulation (EU) 2017/373 (AMC1 ATS.TR.250(b).and GM to ATS.TR.250(b).)				
ADC I(TWR) ATM 1.2.4	Appreciate the use of ATIS in the provision of flight information service.	3 3	Regulation (EU) No 923/2012	ADC APS APP ACP ACS

ATM 1.3 Alerting service (ALRS)

ADC I(TWR)	Provide ALRS.	4	ICAO Doc 4444 Regulation (EU)	ALL
ATM		4	2017/373, Regulation (EU) No 923/2012	
1.3.1			<i>Optional content: national documents</i>	

Regulatory updated - Regulation (EU) 2017/373 - Transposed within GM1 ATS.TR.400(b);GM1 ATS.TR.405(a)(1);GM2 ATS.TR.300(c)(2).

ADC I(TWR)	Respond to distress and urgency messages and signals.	3	Regulation (EU) No 923/2012, ICAO Annex 10, ICAO Doc 4444	ALL
ATM		3		
1.3.2			<i>Optional content: EUROCONTROL Guidelines for Controller Training in the Handling of Unusual/Emergency Situations, ICAO Doc 4444, national documents</i>	

Regulatory updated - Regulation (EU) 2017/373. The proposal to add ICAO Annex 12 not accepted - Annex 12 is about and for SAR service - there is almost nothing there about how ATC units providing alerting service should respond to distress and urgency messages and signals.

ATM 1.4 ATS system capacity and air traffic flow management

ADC I(TWR)	Appreciate the impact of ATS system capacity and air traffic flow management on the controller.	3	<i>Optional content: EUROCONTROL ATFCM Users Manual, Slot management, Slot allocation procedure, local implementation of ATFCM principles, etc.</i>	ADC
ATM		3		
1.4.1				

The proposal to introduce mandatory content - not accepted

ADC I(TWR)	Organise traffic to take account of flow management.	4	<i>Optional content: departure sequence</i>	ADC
ATM		4		
1.4.2				

The proposal to modify content by adding arrivals as well - not accepted. TWR (ADC) is not organising arrivals.

ADC I(TWR)	Inform the appropriate local ATFM unit authority 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: reported ground-based incidents, forest fire, smoke, oil pollution</i>	ADC
ATM		3		
1.4.3				

In other ratings it is: "Inform supervisor of local factors"...TF modified this objective (as per Reg 255/210) to avoid confusion in TWR environment where, usually, there is no supervisor.

ATM 2 COMMUNICATION

ATM 2.1 Effective communication

ADC I(TWR) ATM 2.1.1	List communication means between controllers. in charge of the same area of responsibility (sector or tower):	1 1	<i>Optional content: electronic, written, verbal and non-verbal communication</i>	ALL
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HUM 6.2.1

2.1.1

The proposal of merging and moving some communication objectives to ATM subject accepted. Objective modified to widen the scope.

ADC I(TWR) ATM 2.1.2	Select the most suitable means of communication given the situation.	5 5		ALL
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2.1.2

Important practical objective introduced in ATM communications.

ADC I(TWR) ATM 2.1.3	Use approved phraseology.	3 3	Regulation (EU) No 923/2012 <i>Optional content: published national/local language phraseology</i>	ALL
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2.1.1

The proposal to add national references to optional content modified to "published national/local language phraseology" - to avoid the challenge for auditors in dealing with the national and EU/ICAO differences particularly in the practical part (safety risk due to different content)

ADC I(TWR) ATM 2.1.4	Ensure effective communication.	4 4	<i>Use of plain language when required, communication within the sector/working position, between the sectors/WPs /ATC Units</i> Communication techniques, readback/verification of readback	ALL
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2.1.2

Improved content

ADC I(TWR) ATM 2.1.5	Analyse examples of pilot and controller communication for effectiveness.	4 4	<i>Optional content: real life recordings, situation in the simulator</i>	ALL
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HUM 6.1.2

Merging of communication objectives in the ATM and optional content added to clarify the requirement.

ATM 3 ATC CLEARANCES AND ATC INSTRUCTIONS

ATM 3.1 ATC clearances

ADC I(TWR) ATM 3.1.1	Issue appropriate ATC clearances.	3	Regulation (EU) No 923/2012	ALL
		3	Optional content: ICAO Doc 4444, national documents	

ADC I(TWR) ATM 3.1.2	Integrate appropriate ATC clearances in control service.	4		ALL
		4		

ADC I(TWR) ATM 3.1.3	Ensure the agreed course of action is carried out.	4		ALL
		4		

ATM 3.2 ATC instructions

ADC I(TWR) ATM 3.2.1	Issue appropriate ATC instructions.	3	Regulation (EU) No 923/2012, ICAO Doc 4444 , Regulation (EU) 2017/373	ALL
		3	Optional content: national documents	

Regulatory updated - Regulation (EU) 2017/373

ADC I(TWR) ATM 3.2.2	Integrate appropriate ATC instructions in control service.	4		ALL
		4		

ADC I(TWR) ATM 3.2.3	Ensure the agreed course of action is carried out.	4		ALL
		4		

ATM 4 COORDINATION

ATM 4.1 Necessity for coordination

ADC I(TWR) ATM 4.1.1	Identify the need for coordination.	3		ALL
		3		

ATM 4.2 Tools and methods for coordination

ADC I(TWR) 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
		3		

ATM 4.3 Coordination procedures

ADC I(TWR) ATM 4.3.1	Initiate appropriate coordination.	3 3	Delegation/transfer of responsibility for air-ground communications and separation, transfer of control, etc. ICAO Doc 4444 Regulation (EU) 2017/373 <i>Optional content: release point</i>	ALL
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Regulatory updated - Regulation (EU) 2017/373 - Transposed within ATS.TR.230.a and associated AMCs/GMs

ADC I(TWR) ATM 4.3.2	Analyse effect of coordination requested by an adjacent position/unit.	4 4	<i>Optional content: delegation/transfer of responsibility for air-ground communications and separation, release point, transfer of control, etc.</i>	ALL
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ADC I(TWR) ATM 4.3.3	Select, after negotiation, an appropriate course of action.	5 5		ALL
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ADC I(TWR) ATM 4.3.4	Ensure the agreed course of action is carried out.	4 4		ALL
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ADC I(TWR) ATM 4.3.5	Coordinate when providing FIS.	4 4	ICAO Doc 4444 Regulation (EU) 2017/373 <i>Optional content: ICAO Doc 4444</i>	ALL
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Regulatory update - Regulation (EU) 2017/373 with ICAO content transposed in the AMCs and GM to Part.ATS. TR.230.a, though not all, and, therefore ICAO Doc 4444 moved to optional content.

ADC I(TWR) ATM 4.3.6	Coordinate when providing ALRS.	4 4	ICAO Doc 4444 Regulation (EU) 2017/373 <i>Optional content: ICAO Doc 4444</i>	ALL
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Regulatory update - Regulation(EU) 2015/373 - transposition as GM2 ATS.TR.300(c).
The proposal to add ICAO Annex 12 to content - not accepted - there is almost nothing there about how ATC units providing alerting service should coordinate with others.

ATM 5 ALTIMETRY AND LEVEL ALLOCATION

ATM 5.1 Altimetry

ADC I(TWR) ATM 5.1.1	Allocate levels according to altimetry data.	4 4	Regulation (EU) No 923/2012	ALL
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ADC I(TWR) ATM 5.1.2	Ensure separation according to altimetry data.	4 4	Optional content: transition level, transition altitude, transition layer, height, flight level, altitude, vertical distance to airspace boundaries	ALL
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ATM 5.2 Terrain clearance

ADC I(TWR) ATM 5.2.1	Provide planning, coordination and control actions appropriate to the rules for minimum safe height and terrain clearance.	4 4	Optional content: terrain clearance dimensions, minimum safe altitudes, transition level, minimum flight level, minimum sector altitude	ADC
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ATM 6 SEPARATIONS

ATM 6.1 Separation between departing aircraft

ADC I(TWR) ATM 6.1.1	Provide separation between departing aircraft.	4 4	ICAO Doc 4444 Regulation (EU) 2017/373 Optional content: ICAO Doc 4444	ADC
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Regulatory update - Regulation (EU) 2017/373 with the content transposed in the AMC's and GM to Part-ATS. TR.210,(AMC10 ATS.TR.210(c)(2)(i)) though not all, and, therefore ICAO Doc 4444 moved to optional content.

ATM 6.2 Separation of departing aircraft from arriving aircraft

ADC I(TWR) ATM 6.2.1	Provide separation of departing aircraft from arriving aircraft.	4 4	ICAO Doc 4444 Regulation (EU) 2017/373	ADC
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Regulatory updated - Regulation (EU) 2017/373; Transposed as AMC11 ATS.TR.210(c)(2)(i)

ATM 6.3 Separation of landing aircraft and preceding landing or departing aircraft

ADC I(TWR) ATM 6.3.1	Provide separation of landing aircraft and preceding landing or departing aircraft.	4 4	ICAO Doc 4444 Regulation (EU) 2017/373	ADC
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Regulatory updated - Regulation (EU) 2017/373 - Transposed within AMC08 ATS.TR.210(c)(2)(i).

ATM 6.4 Time-based wake turbulence longitudinal separation

ADC I(TWR) ATM 6.4.1	Provide time-based wake turbulence longitudinal separation.	4 4	ICAO Doc 4444 Regulation (EU) 2017/373, Regulation (EU) No 923/2012	ADC
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Regulatory updated - Regulation (EU) 2017/373 - Transposed within Annex IV 'Part-ATS' as ATS.TR.220. + associated AMC's and GM's
The proposal to also add explicit article from SERA - not accepted as against the principle of not referring the articles of any regulated material. Reference to SERA is already in the content.

ATM 6.5 Reduced separation minima

ADC I(TWR) ATM 6.5.1	Provide reduced separation minima.	4 4	ICAO Doc 4444 Regulation (EU) 2017/373	ADC
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Regulatory updated - Regulation (EU) 2017/373
Transposed within Annex IV 'Part-ATS' as AMC9 ATS.TR.210(c)(2)(i)

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

ATM 7.1 Airborne safety nets collision avoidance systems

ADC I(TWR) ATM 7.1.1	Recognise the independence of Differentiate between ACAS advisory thresholds and aerodrome ATC separation standards.	1 1<2	ICAO Doc 9863 Optional content: Skybrary Safety Nets	ALL
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Improved corpus and level reduced from 2 to 1, optional content and objective merged for all ratings.

ADC I(TWR) ATM 7.1.2	Describe the controller responsibility during and following an ACAS RA reported by pilot.	2 2	ICAO Doc 4444 Optional content: ICAO Doc 9863, Skybrary Safety Nets	ALL
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Updated optional content with the relevant ICAO reference document and SKYbrary

ADC I(TWR) ATM 7.1.3	Respond to pilot notification of actions based on airborne systems warnings.	3 3	FAWS Optional content: ACAS, EUROCONTROL ACAS web page SKYbrary Safety Nets	ADC
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Updated content and redundant reference

ATM 7.2 Ground-based safety nets

ADC I(TWR) ATM 7.2.1	Respond to available ground-based safety nets warnings.	3 3	Optional content: anti-incursion	ADC
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Removed unnecessary optional content - Rating training is for simulated environment and if STD has no safety net warning available at all it will not be required-practised

ATM 8 DATA DISPLAY

ATM 8.1 Data management

ADC I(TWR) ATM 8.1.1	Update the data display to accurately reflect the traffic situation.	3 3	Optional content: information displayed, strip marking procedures, electronic information data displays, actions based on traffic display information, calculation of EETs	ALL
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ADC I(TWR) ATM 8.1.2	Analyse pertinent data on data displays.	4 4		ALL
ADC I(TWR) ATM 8.1.3	Organise pertinent data on data displays.	4 4		ALL
ADC I(TWR) ATM 8.1.4	Obtain flight plan information.	3 3	CPL, FPL , supplementary information <i>Optional content: FPL, RPL, AFIL, etc.</i>	ALL

The proposal to delete this objective as being relevant only for pilots not accepted but mandatory content modified to reduce the scope only to CPL and supplementary information.

ADC I(TWR) ATM 8.1.5	Use flight plan information.	3 3		ALL
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ATM 9 OPERATIONAL ENVIRONMENT (SIMULATED)

ATM 9.1 Integrity of the operational environment

ADC I(TWR) ATM 9.1.1	Obtain information concerning the operational environment.	3 3	<i>Optional content: local/simulator operation manuals, briefing, notices, local orders, current flight plan data/information displays, pilot reports, coordination, verification of information</i>	ALL
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Improved optional content.

ADC I(TWR) ATM 9.1.2	Ensure the integrity of the operational environment.	4 4	<i>Optional content: frequency, VOLMET, ATIS, SIGMET, systems set-up, integrity of displays</i>	ADC
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ATM 9.2 Verification of the currency of operational procedures

ADC I(TWR) ATM 9.2.1	Check all relevant documentation before managing traffic.	3 3	<i>Optional content: briefing, letters of agreement (LOAs), NOTAMs, AICs</i>	ALL
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ATM 9.3 Handover-takeover

ADC I(TWR) ATM 9.3.1	Transfer information to the relieving controller.	3 3		ALL
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ADC I(TWR) ATM 9.3.2	Obtain information from the controller handing over.	3 3		ALL
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ADC I(TWR) ATM 9.3.3	List possible actions to provide a safe position handover-takeover.	1 1	Optional content: rigour, preparation, overlap time	ALL
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HUM 6.2.3

ATM 9.3.3

Relocation of handover-takeover objective from HUM to the appropriate ATM subtopic.

ADC I(TWR) ATM 9.3.4	Explain consequences of a missed position handover-takeover process.	2 2		ALL
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HUM 6.2.4

ATM 9.3.4

Relocation of handover-takeover objective from HUM to the appropriate ATM subtopic

ATM 10 PROVISION OF AN AERODROME CONTROL SERVICE

ATM 10.1 Responsibility for the provision

ADC I(TWR) ATM 10.1.1	Explain the responsibility for the provision of an aerodrome control service.	2 2	Regulation (EU) 2017/373 ICAO Doc 4444	ADC
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Regulatory updated - Regulation (EU) 2017/373 - ATS.TR.205(c).

ADC I(TWR) ATM 10.1.2	Describe the division of responsibility among air traffic control units.	2 2	ICAO Doc 4444 , Regulation (EU) 2017/373 <i>Optional content: ICAO Doc 4444</i>	ALL
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Regulatory updated - Regulation (EU) 2017/373 - Transposed in AMC1 ATS.TR.205.;ATS.TR.230(a);GM1 ATS.TR.230(a)(3); GM1 to AMC3 ATS.TR.230(b)(2), though not all, and, therefore ICAO Doc 4444 moved to optional content.

ADC I(TWR) ATM 10.1.3	Describe the responsibility in regard to military traffic.	2 2	ICAO Doc 4444 <i>Optional content: ICAO Doc 9554</i>	ALL
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ADC I(TWR) ATM 10.1.4	Describe the responsibility in regard to unmanned free balloons.	2 2	Regulation (EU) No 923/2012	ALL
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ADC I(TWR) ATM 10.1.5	Appreciate the influence of operational requirements.	3 3	Optional content: military flying, calibration flights, aerial photography	ALL
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ATM 10.2 Functions of aerodrome control tower

ADC I(TWR) ATM 10.2.1 10.2.1	Manage the general functions of aerodrome control.	4 4	ICAO Doc 4444	ADH
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The proposal to delete this objectives - accepted as being too generic and well covered in many remaining practical (L3 and >) ATM objectives. The subtopic renamed and moved further within the restructuring/merge of ADV and ADI in the new ADC syllabus/rating.

ATM 10.2 Traffic management process

ADC I(TWR) ATM 10.2.1 10.3.1 10.2.1	Ensure that situational awareness is maintained.	4 4	Information gathering, observation, traffic projection	ADC
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Renumbering of the subtopics and associated objectives due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR) ATM 10.2.2 10.3.2 10.2.2	Detect conflicts in time for appropriate resolution.	4 4		ALL
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Renumbering of the subtopics and associated objectives due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR) ATM 10.2.3 10.3.3 10.2.3	Identify potential solutions to achieve a safe and effective flow of aerodrome traffic.	3 3		ADC
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ADC I(TWR) ATM 10.2.4 10.3.4 10.2.4	Evaluate possible outcomes of different planning and control actions.	5 5		ALL
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Corpus modified for consistency with other ratings + renumbering due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR) ATM	Select an appropriate plan in time to achieve safe and effective flow of aerodrome traffic.	5 5		ADC
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- 10.2.5
- 10.3.5
- 10.2.5

ADC I(TWR) ATM	Ensure an adequate priority of actions.	4 4		ALL
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- 10.2.6
- 10.3.6
- 10.2.6

ADC I(TWR) ATM	Execute selected plan in a timely manner.	3 3		ALL
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- 10.2.7
- 10.3.7
- 10.2.7

ADC I(TWR) ATM	Ensure a safe and efficient outcome is achieved.	4 4	Traffic monitoring, adaptability and follow up	ALL
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- 10.2.8
- 10.3.8
- 10.2.8

ATM 10.3 Aeronautical ground lights

ADC I(TWR) ATM	Select appropriate aeronautical ground lights.	5 5	Regulation (EU) 2017/373 ICAO Doc 4444	ADC
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- 10.3.1
- 10.4.1
- 10.3.1

Regulatory update - Regulation (EU) 2017/373 - Transposed as ATS.TR.150 & AMC1 ATS.TR.150; GM1 to AMC1 ATS.TR.150
+ renumbering due to merge of ADV and ADI in the new ADC rating.

ATM 10.4 Information to aircraft by aerodrome control tower

ADC I(TWR) ATM	Provide information related to the operation of aircraft.	4 4	ICAO Doc 4444 , Regulation (EU) 2017/373, Regulation (EU) No 255/2010	ADC
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- 10.4.1
- 10.5.1
- 10.4.1

Regulatory update - Regulation (EU) 2017/373 - AMC11 ATS.TR.210(a)(3). + renumbering due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR) ATM 10.4.2	Provide information on aerodrome conditions.	4 4	ICAO Doc 4444, Regulation (EU) No 923/2012, Regulation (EU) 2017/373	ADC
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10.5.2

10.4.2

Regulatory update- Regulation (EU) 2017/373 - AMC12 ATS.TR.210(a)(3). + renumbering due to merge of ADV and ADI in the new ADC rating.

ATM 10.5 Runway in use

ADC I(TWR) ATM 10.5.1	Select the runway in use.	5 5	ICAO Doc 4444, Regulation (EU) 2017/373, Regulation (EU) No 923/2012	ADC
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10.8.1

10.5.1

Regulatory update - Regulation (EU) 2017/373 -Transposed as ATS.TR.260. - + renumbering due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR) ATM 10.5.2	Coordinate runway in use.	4 4	<i>Optional content: approach control, area control, runway selection, change of runway</i>	ADC
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10.8.2

10.5.2

ADC I(TWR) ATM 10.5.3	Manage traffic in the event of runway-in-use change.	4 4	<i>Optional content: Skybrary</i>	ADC
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10.8.3

10.5.3

ATM 10.6 Control of aerodrome traffic

ADC I(TWR) ATM 10.6.1	Predict positions of aircraft in the aerodrome traffic and taxi circuits.	4 4	ICAO Doc 4444, Regulation (EU) 2017/373	ADC
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Regulatory updated - Regulation (EU) 2017/373 - GM5 ATS.TR.210(a)(3).

ADC I(TWR) ATM 10.6.2	Manage traffic on the manoeuvring area.	4 4	Regulation (EU) 2017/373, Regulation (EU) No 923/2012 ICAO Doc 4444, aircraft, vehicles <i>Optional content: runway inspection</i>	ADC
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Regulatory update - Regulation(EU) 2015/373 - transposition as AMC13 ATS.TR.210(a)(3) and modified mandatory content (removed explicit notion for "aircraft, vehicles" - all included in the referenced regulations anyway)

ADC I(TWR) ATM 10.6.3	Manage traffic in accordance with a change to operational procedures.	4 4	<i>Optional content: taxiway closure</i>	ADC
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ADC I(TWR) ATM 10.6.4	Balance the workload against personal capacity.	5 5	<i>Optional content: re-planning, prioritising solutions, denying requests, delaying traffic</i>	ADC
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ATM 10.7 Control of airborne traffic in the traffic circuit

ADC I(TWR) ATM 10.7.1	Manage traffic in the traffic circuit.	4 4	ICAO Doc 4444, Regulation (EU) 2017/373, Regulation (EU) No 923/2012, meteorological phenomena, geographical knowledge, environmental factors	ADC
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Modified subtopic title; Regulatory update - Regulation(EU) 2015/373 - transposition as AMCs and GM to ATS.TR.210(c) , ATS.TR.220 and ATS.TR.255. and modified mandatory content (removed explicit list that is included in the referenced regulations anyway)

ADC I(TWR) ATM 10.7.2 10.7.2	Manage arriving and departing traffic.	4 4	ICAO Doc 4444, Regulation (EU) 2017/373, Regulation (EU) No 923/2012, allocation of the order of priority, meteorological phenomena, wake turbulence, environmental factors	ADC
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Objective deleted and relevant content moved to specific arr and dep objectives due to restructuring and merge of ADV and ADI in the new ADC rating.

ADC I(TWR) ATM 10.7.2 10.7.3 10.7.2	Integrate the change in the serviceability of radio aids in the management of aerodrome traffic.	4 4	<i>Optional content: limitations, availability and status of ground-based and satellite-based systems UDF, VDF, ILS, NDB, VOR, DME</i>	ADC
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The proposal to modify/clarify this objective accepted by improving the wording of corpus and subtopic and introducing new optional content from deleted NAV objective with the similar corpus + renumbering due to merge of ADV and ADI.

ADC I(TWR) ATM 10.7.3	Integrate surface conditions into the control of aerodrome traffic.	4 4	Optional content: damp, wet, water patches, flooding, snow, slush, ice, braking performance action	ADC
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10.7.4

10.7.3

The proposal to update optional content and align with new ICAO Global Reporting Format (GRF) terminology with regard to braking performance - accepted. + renumbering due to merge of ADV and ADI into ADC.

ADC I(TWR) ATM 10.7.4	Integrate information about meteorological phenomena into the control of aerodrome traffic.	4 4	Optional content: clouds, precipitation, visibility, wind, meteorological hazards	ADC
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10.7.5

10.7.4

ADC I(TWR) ATM 10.7.5	Integrate the information provided by situation displays.	4 4	Use, advantages, disadvantages	ADC
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10.7.6

10.7.5

The proposal to remove the content accepted - no need for any explicit content here + renumbering due to merge of ADV and ADI.

ADC I(TWR) ATM 10.7.6	Issue initiate missed approach or go around instruction.	3 3	Regulation (EU) No 923/2012, Regulation (EU) 2017/373 Optional content: obstructed runway	ADC
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10.7.7

10.7.6

Improved wording for corpus + Regulatory updated and consistency with other ratings - Regulation (EU) No 923/2012 (for RTF) and Regulation (EU) 2017/373 - transposed as AMC16 ATS.TR.210(a)(3).

ATM 10.8 Departing traffic

ADC I(TWR) ATM 10.8.1	Manage control of departing aircraft.	4 4	ICAO Doc 4444, Regulation (EU) No 923/2012, Regulation (EU) 2017/373, use of situation displays, allocation of the order of priority, meteorological phenomena, environmental factors, wake turbulence, appropriate departure clearances, SIDs	ADC
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11.2.1

10.8.1

Improved wording for corpus, content and regulatory update - Regulation (EU) 2017/373 with the content transposed in the AMCs (AMC 10; AMC11) to Part.ATS.TR.210(c)(2)(i).,and GM (GM1 ATS.TR.230(a)(3)(ii).), though not all, and, therefore ICAO Doc 4444 kept in the mandatory content as well. + renumbering due to merge of ADV and ADI.

ADC I(TWR) ATM 10.8.2	Integrate departure sequence into the control of aerodrome traffic.	4 4	ICAO Doc 4444, Regulation (EU) No 923/2012, Regulation (EU) 2017/373	ADC
11.2.2				
10.8.2				

Regulatory update - Regulation (EU) 2017/373 with the content transposed in the AMC1 ATS.TR.305(a);(b). though not all, and, therefore ICAO Doc 4444 kept in the mandatory content as well. + Renumbering due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR) ATM 10.8.3	Provide appropriate information to departing traffic.	4 4	ICAO Doc 4444 , Regulation (EU) 2017/373 , Regulation (EU) No 255/2010, use of situation displays, wake turbulence <i>Optional content: ICAO Doc 4444</i>	ADC
11.2.3				
10.8.3				

Regulatory update - Regulation (EU) 2017/373 with the content transposed in the AMCs to ATS.TR.210(a)(3)., ATS.TR.220., AMC2 ATS.TR.240(a)., ATS.TR.250(b), AMC1 ATS.TR.305(a)(7), GM1 to AMC1 ATS.TR.305 (a)(5). AMC6 ATS.OR.110. Objective moved/merged in the common topic PROVISION OF ADC due to merge of ADV and ADI in the new ADC rating.

ATM 10.9 Arriving traffic

ADC I(TWR) ATM 10.9.1	Manage control of arriving aircraft.	4 4	ICAO Doc 4444 , Regulation (EU) 2017/373 , Regulation (EU) No 923/2012, use of situation displays , allocation of the order of priority , meteorological phenomena , environmental factors , wake turbulence <i>Optional content: ICAO Doc 4444</i>	ADC
11.3.1				
10.9.1				

Improved wording for corpus, content and regulatory update - Regulation (EU) 2017/373 with the content transposed in the AMC5 ATS.TR.210(a)(3), though not all, and, therefore ICAO Doc 4444 moved to optional content. + renumbering due to merge of ADV and ADI.

ADC I(TWR) ATM 10.9.2	Integrate the approach sequence into the control of aerodrome traffic.	4 4	Regulation (EU) 2017/373 , ICAO Doc 4444 , Regulation (EU) No 923/2012	ADC
11.3.2				
10.9.2				

Regulatory update - Regulation (EU) 2017/373 with the content transposed in the AMC5 ATS.TR.210(a)(3) + renumbering due to merge of ADV and ADI.

ADC I(TWR) ATM 10.9.3	Integrate aircraft on visual approach into the aerodrome traffic.	4 4	ICAO Doc 4444, Regulation (EU) 2017/373, Regulation (EU) No 923/2012	ADC
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11.3.3

10.9.3

Regulatory update - Regulation (EU) 2017/373 with the content transposed in the AMC9 ATS.TR.210(a)(3). + renumbering due to merge of ADV and ADI.

ADC I(TWR) ATM 10.9.4	Integrate aircraft on missed approach into the aerodrome traffic.	4 4	use of air traffic monitors	ADC
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11.3.4

10.9.4

The proposal to remove the mandatory content accepted - unnecessary requirement for ADC simulator environment + renumbering due to merge of ADV and ADI.

ADC I(TWR) ATM 10.9.5	Integrate aircraft performing circling approach into the aerodrome traffic.	4 4	ICAO Doc 8168 Volume II	ADC
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11.3.5

10.9.5

Renumbering due to merge of ADV and ADI.

ADC I(TWR) ATM 10.9.6	Provide appropriate information to arriving aircraft.	4 4	ICAO Doc 4444, Regulation (EU) 2017/373, Regulation (EU) No 923/2012	ADC
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11.3.6

10.9.6

Regulatory update - Regulation (EU) 2017/373 with the content transposed in the AMC10 ATS.TR.210(a)(3). + renumbering due to merge of ADV and ADI.

ATM 10.10 Functions of aerodrome control tower Special VFR operations

ADC I(TWR) ATM 10.10.1	Manage the suspension of VFR operations.	4 4	Regulation (EU) 2017/373 ICAO Doc 4444	ADC
10.2.2				
10.10.1				

Restructuring (and renaming in this case) of the subtopics and relevant objectives due to merge of ADV and ADI in the new ADC rating + Regulatory updated - Regulation (EU) 2017/373 - ATS.TR.145(a).(b) GM1 ATS. TR.145

ADC I(TWR) ATM 10.10.2	Manage SVFR traffic.	4 4	Regulation (EU) No 923/2012, Regulation (EU) 2017/373 ICAO Doc 4444	ADC
11.1.1				
10.10.2				

Regulatory updated - Regulation (EU) 2017/373; renumbering and renaming of the subtopic and associated objective due to merge of ADV and ADI in the new ADC rating

ATM 10.11 Low visibility operations

ADC I(TWR) ATM 10.11.1	Describe the Procedures for Low Visibility Operations.	2 2	ICAO Doc 4444 , Regulation (EU) 2017/373	ADC
11.1.2				
10.11.1				

Regulatory updated - Regulation (EU) 2017/373 - ATS.TR.265(a). + renumbering and renaming of the subtopic and associated objective due to merge of ADV and ADI in the new ADC rating

ATM 10.12 Aerodrome control service with advanced system support

ADC I(TWR) ATM 10.12.1	Appreciate the impact of advanced systems on the provision of aerodrome control service.	3 3	<i>Optional content: surface manager (SMAN), departure manager (DMAN), automated conflicts/incursions tools, alarms and resolution advisory tools, automated assistance for surface movement planning and routing, enhanced vision technology in low visibility for controllers</i>	ADC
11.4.1				
10.12.1				

Renumbering of the subtopic and associated objective due to merge of ADV and ADI in the new ADC rating

ATM 11.1 PROVISION OF AERODROME CONTROL-INSTRUMENT

ATM 11.1 Low visibility operations and special VFR

ADC I(TWR)	Manage SVFR traffic:	4	Regulation (EU) No 923/2012;	ADC
ATM		4	Regulation (EU) 2017/373	
11.1.1				
11.1.1				
10.10.2				

This topic was deleted and associated subtopics/objectives moved/merged in the preceding topic PROVISION OF ADC due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR)	Describe the Procedures for Low Visibility Operations:	2	ICAO Doc 4444; Regulation (EU)	ADC
ATM		2	2017/373	
11.1.1				
11.1.2				
10.11.1				

This topic was deleted and associated subtopics/objectives moved/merged in the preceding topic PROVISION OF ADC due to merge of ADV and ADI in the new ADC rating.

ATM 11.2 Departing traffic

ADC I(TWR)	Manage control of departing aircraft:	4	ICAO Doc 4444, Regulation (EU) No	ADC
ATM		4	923/2012, Regulation (EU) 2017/373;	
11.2.1			use of situation displays, wake	
11.2.1			turbulence, appropriate departure	
10.8.1			clearances, SIDs	

This topic was deleted and associated subtopics/objectives moved/merged in the preceding topic PROVISION OF ADC due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR)	Integrate departure sequence into the	4	ICAO Doc 4444, Regulation (EU) No	ADC
ATM	control of aerodrome traffic:	4	923/2012, Regulation (EU) 2017/373	
11.2.2				
11.2.2				
10.8.2				

Objective moved to common Provision of ADC topic due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR)	Provide appropriate information to departing traffic.	4	ICAO Doc 4444, Regulation (EU) 2017/373, Regulation (EU) No 255/2010, use of situation displays, wake turbulence	ADC
ATM		4		
11.2.3				
11.2.3				
10.8.3				

This topic was deleted and associated subtopics/objectives moved/merged in the preceding topic PROVISION OF ADC due to merge of ADV and ADI in the new ADC rating.

ATM 11.3 Arriving traffic

ADC I(TWR)	Manage control of arriving aircraft.	4	ICAO Doc 4444, Regulation (EU) 2017/373, Regulation (EU) No 923/2012, wake turbulence	ADC
ATM		4		
11.3.1				
11.3.1			Optional content: ICAO Doc 4444	
10.9.1				

This topic was deleted and associated subtopics/objectives moved/merged in the preceding topic PROVISION OF ADC due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR)	Integrate the approach sequence into the control of aerodrome traffic.	4	Regulation (EU) 2017/373, ICAO Doc 4444, Regulation (EU) No 923/2012	ADC
ATM		4		
11.3.2				
11.3.2				
10.9.2				

This topic was deleted and associated subtopics/objectives moved/merged in the preceding topic PROVISION OF ADC due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR)	Integrate aircraft on visual approach into the aerodrome traffic.	4	ICAO Doc 4444, Regulation (EU) 2017/373, Regulation (EU) No 923/2012	ADC
ATM		4		
11.3.3				
11.3.3				
10.9.3				

This topic was deleted and associated subtopics/objectives moved/merged in the preceding topic PROVISION OF ADC due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR)	Integrate aircraft on missed approach into the aerodrome traffic.	4	use of air traffic monitors	ADC
ATM		4		
11.3.4				
11.3.4				
10.9.4				

This topic was deleted and associated subtopics/objectives moved/merged in the preceding topic PROVISION OF ADC due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR) ATM 11.3.5	Integrate aircraft performing circling approach into the aerodrome traffic.	4 4	ICAO Doc 8168 Volume II	ADC
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11.3.5

10.9.5

This topic was deleted and associated subtopics/objectives moved/merged in the preceding topic PROVISION OF ADC due to merge of ADV and ADI in the new ADC rating.

ADC I(TWR) ATM 11.3.6	Provide appropriate information to arriving aircraft.	4 4	ICAO Doc 4444, Regulation (EU) 2017/373, Regulation (EU) No 923/2012	ADC
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11.3.6

10.9.6

This topic was deleted and associated subtopics/objectives moved/merged in the preceding topic PROVISION OF ADC due to merge of ADV and ADI in the new ADC rating.

ATM 11.4 Aerodrome control service with advanced system support

ADC I(TWR) ATM 11.4.1	Appreciate the impact of advanced systems on the provision of aerodrome control service.	3 3	<i>Optional content: surface manager (SMAN), departure manager (DMAN), automated conflicts/incursions tools, alarms and resolution advisory tools, automated assistance for surface movement planning and routing, enhanced vision technology in low visibility for controllers</i>	ADC
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11.4.1

10.12.1

This topic was deleted and associated subtopics/objectives moved/merged in the preceding topic PROVISION OF ADC due to merge of ADV and ADI in the new ADC rating.

Subject 4 : METEOROLOGY

The subject objective is:

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

MET 1		METEOROLOGICAL PHENOMENA		
MET 1.1		Meteorological phenomena		
ADC I(TWR) MET 1.1.1	Appreciate the impact of different cloud types.	3 3	Cumulus, Cumulonimbus <i>Optional content: stratus, nimbostratus, etc.</i>	ADC
<div style="border: 1px solid black; padding: 5px;"> <p>The proposal to clarify this subtopic as it looks like wrap up of METB partially accepted by modifying content. Nevertheless, a similar basic topics (objectives) are all L2 and here we have appreciation (L3) of the MET phenomena summarised in this intro topic.</p> </div>				
ADC I(TWR) MET 1.1.2	Recognise different cloud types.	1 1		ADC
<div style="border: 1px solid black; padding: 5px;"> <p>Objective moved to ADC from Basic training - as being appropriate only for Aerodrome environment!</p> </div>				
ADC I(TWR) MET 1.1.3	Appreciate the impact of precipitation.	3 3	Precipitation and microphysics <i>Optional content: rain, snow, sleet, hail</i>	ADC
<div style="border: 1px solid black; padding: 5px;"> <p>1.1.2</p> <p>1.1.3</p> </div>				
ADC I(TWR) MET 1.1.4	Appreciate the impact of atmospheric obscuration.	3 3	<i>Optional content: advection fog, radiation fog, mixing, evaporation, mist, drizzle</i>	ADC
<div style="border: 1px solid black; padding: 5px;"> <p>1.1.3</p> <p>1.1.4</p> </div>				
ADC I(TWR) MET 1.1.5	Appreciate the effect and impact of wind.	3 3	Gusting, veering, backing <i>Optional content: land breezes, sea breezes, Föhn</i>	ADC
<div style="border: 1px solid black; padding: 5px;"> <p>1.1.4</p> <p>1.1.5</p> </div>				

ADC I(TWR) MET 1.1.6	Appreciate the effect and danger of hazardous meteorological phenomena.	3 3	Wind shear, turbulence, thunderstorms, icing, microbursts	ADC
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- 1.1.5
- 1.1.6

ADC I(TWR) MET 1.1.7	Appreciate the effect of a frontal system on aerodrome operations.	3 3		ADC
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- 1.1.6
- 1.1.7

ADC I(TWR) MET 1.1.8	Integrate data about meteorological phenomena into provision of ATS.	4 4	Clearances, instructions and transmitted information <i>Optional content: relevant meteorological phenomena</i>	ALL
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- 1.1.7
- 1.1.8

The proposal to move this objective to ATM not accepted - The location of the practical objectives in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with other subjects/topics...). Therefore most of them are covered in the simulator and linked with the major subject - ATM, anyway.

MET 2 SOURCES OF METEOROLOGICAL DATA

MET 2.1 Meteorological instruments

ADC I(TWR) MET 2.1.1	Extract information from meteorological instruments.	3 3	<i>Optional content: anemometer, RVR indicator, cloud base indicator, ceilometer, barometer</i>	ADC
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MET 2.2 Other sources of meteorological data

ADC I(TWR) MET 2.2.1	Decode information from meteorological data displays.	3 3		ADC
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ADC I(TWR) MET 2.2.2	Use appropriate communication tools and networks to obtain meteorological data.	3 3		ADC
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ADC I(TWR) MET 2.2.3	Relay meteorological information.	3 3	ICAO Doc 4444, Regulation (EU) No 923/2012 <i>Optional content: flight information centre, adjacent ATS unit, ADS-C reports</i>	ALL
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Subject 5 : NAVIGATION

The subject objective is:

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

NAV 1		MAPS AND AERONAUTICAL CHARTS		
NAV 1.1		Maps and charts		
ADC I(TWR) NAV 1.1.1	Decode symbols and information displayed on aeronautical maps and charts.	3 3	Instrument approach charts, SID charts, aerodrome charts <i>Optional content: visual approach charts, military maps and chart</i>	ADC
ADC I(TWR) NAV 1.1.2	Use relevant maps and charts.	3 3		ALL
NAV 2		INSTRUMENT NAVIGATION		
NAV 2.1		Navigational systems		
ADC I(TWR) NAV 2.1.1	Describe how the operational status of navigational systems may change.	2 2	<i>Optional content: VDF, NDB, VOR, DME, ILS, ABAS, SBAS, GBAS, RNP</i>	ADC
ADC I(TWR) NAV 2.1.2	Appreciate the effect of a change in the operational status of navigational systems.	3 3	<i>Optional content: precision, limitations, status, degraded procedures</i>	ALL
2.1.3				
ADC I(TWR) NAV 2.1.3	Decode operational status displays of navigational systems.	3 3	<i>Optional content: VDF, NDB, VOR, DME, ILS and GBAS</i>	ADC
2.1.2				
ADC I(TWR) NAV 2.1.4	Manage traffic in case of change in the operational status of navigational systems.	4 4	<i>Optional content: limitations, availability and status of ground-based and satellite-based systems</i>	ADC

The proposal to delete/merge this objective with the similar ADC ATM objective 10.7.3 accepted

NAV 2.2 Stabilised approach

ADC I(TWR) NAV 2.2.1	Describe the concept of stabilised approach.	2 2	Optional content: <i>Skybrary</i>	ADC APP APS
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The proposal to move this objective to ACFT not accepted - The location of the objectives in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with other subjects/topics...). Therefore most of them are related to or covered in the SIM and linked with the major subject - ATM, anyway.

ADC I(TWR) NAV 2.2.2	Appreciate the effect of late change of runway-in-use for landing aircraft.	3 3	Cockpit workload Optional content: <i>Impact on vertical profile (CDO), FMS management, crew procedure briefing, missed approach, loss of situational awareness, etc</i>	ADC
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NAV 2.3 Instrument departures and arrivals

ADC I(TWR) NAV 2.3.1	Describe relevant SIDs.	2 2		ADC
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ADC I(TWR) NAV 2.3.2	Describe the <i>types and</i> phases of <i>an</i> instrument approach procedures.	2 2	Regulation (EU) 2017/373, ICAO Annex 6	ADC APP APS
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The scope of ADC objective was broadened to description of different types of IAPs to align with the similar APP/APS objective + Regulation (EU) 2017/373 and ICAO Annex 6 added to the content.

ADC I(TWR) NAV 2.3.3	Describe the relevant minima applicable for a precision/ non-precision and visual approach.	2 2	Optional content: <i>Type A/B operations, CAT I/II/III criteria, LNAV, LNAV/VNAV, LPV, RNP AR APCH minima</i>	ADC APP APS
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NAV 2.4 Satellite-based systems

ADC I(TWR) NAV 2.4.1	State the different applications of satellite-based systems relevant for aerodrome operations.	1 1	Optional content: <i>LNAV, LNAV/VNAV, LPV, RNP minima, precision approach</i>	ADC
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NAV 2.5 PBN applications

ADC I(TWR) NAV 2.5.1	State future PBN developments.	1 1	A-RNP, RNP (AR) DEP Optional content: <i>RNP 3D, VNAV, 4D, TBO</i>	ADC ALL
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Subject 6 : AIRCRAFT

The subject objective is:

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

ACFT 1		AIRCRAFT INSTRUMENTS		
ACFT 1.1		Aircraft instruments		
ADC I(TWR) ACFT	Integrate information from aircraft instruments provided by the pilot in the provision of ATS.	4 4		ALL
1.1.1				
<p>The proposal to make some content mandatory not accepted - making some examples explicit and mandatory could be too demanding both for the students and TOs but also limit the implementation to listed mandatory content only.</p>				
ADC I(TWR) ACFT	Explain the operation of aircraft radio equipment.	2 2	Optional content: radios (number of), emergency radios	ALL
1.1.2				
ADC I(TWR) ACFT	Explain the operation of on-board surveillance equipment.	2 2	Transponders: equipment Mode A, Mode C, Mode S, ADS capability	ADC APS ACS
1.1.3				
ACFT 2		AIRCRAFT CATEGORIES		
ACFT 2.1		Wake turbulence		
ADC I(TWR) ACFT	Explain the wake turbulence effect and associated hazards to the succeeding aircraft.	2 2		ALL
2.1.1				
ADC I(TWR) ACFT	Appreciate the techniques used to prevent hazards associated with wake turbulence on succeeding aircraft.	3 3		ALL
2.1.2				
ACFT 2.2		Application of ICAO approach categories		
ADC I(TWR) ACFT	Describe the use of ICAO approach categories.	2 2	ICAO Doc 8168	ADC APP APS
2.2.1				
ADC I(TWR) ACFT	Appreciate the effect of ICAO approach categories on the traffic organisation.	3 3		ADC APP APS
2.2.2				

ACFT 3 FACTORS AFFECTING AIRCRAFT PERFORMANCE

ACFT 3.1 Take-off factors

ADC I(TWR) ACFT 3.1.1	Integrate the influence of factors affecting aircraft on take-off.	4 4	Optional content: runway conditions, runway slope, aerodrome elevation, wind, temperature, aircraft configuration, airframe contamination and aircraft mass	ADC
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ACFT 3.2 Climb factors

ADC I(TWR) ACFT 3.2.1	Appreciate the influence of factors affecting aircraft during climb.	3 3	Optional content: speed, mass, air density, wind and temperature	ADC
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ACFT 3.3 Final approach and landing factors

ADC I(TWR) ACFT 3.3.1	Integrate the influence of factors affecting aircraft during final approach and landing.	4 4	Optional content: wind, aircraft configuration, mass, meteorological conditions, runway conditions, runway slope, aerodrome elevation	ADC
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Consistency between the ratings.

ACFT 3.4 Economic factors

ADC I(TWR) ACFT 3.4.1	Integrate consideration of economic factors affecting aircraft.	4 4	Optional content: starting-up, taxiing, routing, departure sequence	ADC
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ACFT 3.5 Environmental factors

ADC I(TWR) ACFT 3.5.1	Appreciate the performance restrictions due to environmental constraints.	3 3	Optional content: noise abatement procedures, minimum flight altitudes, bird hazard	ADC
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ACFT 4 AIRCRAFT DATA

ACFT 4.1 Recognition of aircraft types

ADC I(TWR) ACFT 4.1.1	Characterise a representative sample of aircraft which will be encountered in the operational/working environment.	2 2	Recognition, ICAO type designators, wake turbulence categories Optional content: ICAO approach categories	ADC
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There was a proposal proposal to modify/clarify this objective: In many updates of IT content we tried to reduce the scope of this objective from fixed number (e.g 50) of aircraft types to something that will be required/realistic in the future OPS environment.
Another proposal to upgrade this L2 objective not accepted as level 4 (integration) objective already exists in ADC (and all other ratings).

ACFT 4.2 Performance data

ADC I(TWR) ACFT 4.2.1	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 4	Performance data under a representative variety of circumstances	ADC
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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.

HUM 1 INFORMATION PROCESSING ~~PSYCHOLOGICAL FACTORS~~

HUM 1.1 Cognitive ~~ve~~ and factors influencing it

ADC I(TWR) HUM 1.1.1	Describe the human information processing model.	2 2	Attention, perception, memory, situational awareness, decision-making, response	ALL
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ADC I(TWR) HUM 1.1.2	Describe the factors which influence human information processing.	2 2	Confidence, stress, learning, knowledge, experience, fatigue, alcohol/drugs, distraction, interpersonal relations	ALL
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HUM 1.2 Situational awareness

ADC I(TWR) HUM 1.2.1	Appreciate the effect of human information-processing factors on situational awareness.	3 3	<i>Optional content: workload, knowledge, interpersonal relations, distraction, confidence, experience, fatigue, stress</i>	ALL
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New subtopic "Situational awareness" and associated objective to stress the importance of situational awareness and in the right order (Cognitive->SA->DM)

HUM 1.3 Decision-making

ADC I(TWR) HUM 1.3.1 1.1.3 1.3.1	Appreciate Monitor the effect of human information processing factors on decision-making.	3 3	<i>Optional content: workload, stress, interpersonal relations, distraction, confidence</i>	ALL
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New subtopic "**Decision-making**" and more appropriate action verb for associated objective to stress the importance of decision-making and in the right order (Cognitive->SA->DM)

HUM 2 ~~MEDICAL AND PHYSIOLOGICAL FACTORS~~ AFFECTING HEALTH AND WELL-BEING

HUM 2.1 Fatigue

ADC I(TWR) HUM 2.1.1 2.1.1	State factors that cause fatigue:	1 4	Shift work <i>Optional content: night shifts and rosters, Regulation (EU) 2017/373, ICAO/IFATCA/CANSO's Fatigue Management Guide for Air Traffic Service Providers</i>	ALL
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The proposal to delete this objective accepted - Well covered at level 2 in Basic HUMB 2.2.4 Explain the causal factors of stress and fatigue.

ADC I(TWR) HUM 2.1.1 2.1.2	Describe the onset of fatigue.	2 2	Regulation (EU) 2017/373 <i>Optional content: lack of concentration, listlessness, irritability, frustration, Skybrary Human Behaviour: EUROCONTROL Fatigue and sleep management ICAO Circular 241 – AN/145 Human factors in Air Traffic Control</i>	ALL
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Improved content and renumbering: Eurocontrol booklet better for IT while CANSO/ICAO guide is more for the unit training

ADC I(TWR) HUM 2.1.2 2.1.3	Recognise the onset of fatigue in self and in others.	1 1	<i>Optional content: ICAO/FATCA/CANSO's Fatigue Management Guide for Air Traffic Service Providers Skybrary Human Behaviour:EUROCONTROL Fatigue and sleep management</i>	ALL
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Merged objectives related to recognition of the onset of fatigue in self and in others.

ADC I(TWR) HUM 2.1.3 2.1.5	Describe appropriate action when recognising fatigue.	2 2	<i>Optional content: Skybrary Human Behaviour, EUROCONTROL Fatigue and sleep management</i>	ALL
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Improved content and renumbering: skybrari and Eurocontrol booklet added to optional content.

ADC I(TWR) HUM 2.1.4 2.1.4 2.1.2	Recognise the onset of fatigue in others:	1 +		ALL
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The proposal to delete/merge this objective with 2.1.2 above accepted.

HUM 2.2 Fitness

ADC I(TWR) HUM 2.2.1 HUM 2.2.1 HUMB 2.1.3	Recognise signs of lack of personal fitness.	1 +		ALL
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The proposal to move this objective to Basic training accepted. Now moved and well covered in the Basic subtopic "Fitness for duty" lack of personal fitness.

ADC I(TWR) HUM 2.2.2	Describe actions when aware of a lack of personal fitness.	2 2		ALL
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2.2.2

HUMB 2.1.4

The proposal to delete this objective accepted - now well covered in the new Basic topic 2 HEALTH AND WELL-BEING

HUM 2.2 Stress

ADC I(TWR) HUM 2.2.1	Recognise the effects of stress on performance.	1 1	Stress and its symptoms in self and in others	ALL
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4.1.1

2.2.1

Optional content: Regulation (EU) 2017/373

The proposal to move this stress related subtopic and associated objective to new (this) location accepted.

ADC I(TWR) HUM 2.2.2	Describe appropriate action when recognising stress.	2 2		ALL
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2.2.2

The proposal to introduce new stress objective for consistency with the similar "fatigue" objective accepted.

ADC I(TWR) HUM 2.2.3	Act to reduce stress.	3 3	The effect of personality in coping with stress, the benefits of active stress management	ALL
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4.2.1

2.2.3

The proposal to delete the content that limits the implementation of the objective accepted but another to introduce the Regulation (EU) 2017/373 in the content was not as provisions of this Regulation are more about ATS providers responsibilities with respect to stress. The whole topic and associated objectives are more related to the learners and how they should cope with it.

ADC I(TWR) HUM 2.2.4	Respond to stressful situation by offering, asking or accepting assistance.	3 3	<i>Optional content: the benefits of offering; accepting and asking for help in stressful situations</i>	ALL
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4.2.2

2.2.4

The proposal to delete the content that was the same as objective's corpus accepted

ADC I(TWR) HUM 2.2.5	Recognise the effect of shocking and stressful events .	1 1	Self and others, abnormal situations, Critical Incident Stress Management (CISM)	ALL
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- 4.2.3
- 2.2.5

Improved wording both for the objective and the content: CISM removed from mandatory content - more applicable in the Unit and/or Continuation training.

HUM 3 THREAT AND ERROR MANAGEMENT

HUM 3.1 Threat and error management framework

ADC I(TWR) HUM 3.1.1	Explain the importance of threat and error management .	2 2	<i>Optional content: prevention of incidents, safety improvement, revision of procedures and/or working practices</i>	ALL
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- 5.1.7
- 3.1.1

The proposal to introduce New TEM topic/subtopic and associated objective accepted. TEM was missing in the Initial training and is required by ICAO Annex 1.

ADC I(TWR) HUM 3.1.2	Explain the threat and error management framework .	2 2	Threats, errors, undesired states, countermeasures	ALL
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Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control

As above...

ADC I(TWR) HUM 3.1.3	Differentiate threats in ATC .	2 2	Internal, external, airborne, environmental	ALL
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Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control

As above...

ADC I(TWR) HUM 3.1.4	Differentiate errors in ATC .	2 2	Equipment, procedural, communication	ALL
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Optional content: increase in traffic, changes in procedures, complexities of systems or traffic, weather, unusual occurrences

As above...

ADC I(TWR) HUM 3.1.5	Differentiate undesired states.	2 2	On the ground, airborne	ALL
Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control				

As above...

ADC I(TWR) HUM 3.1.6	Analyse examples of threat and error management in ATC.	4 4	Case studies	ALL
Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control				

As above...

HUM 3.2 Applied threat and error management

ADC I(TWR) HUM 3.2.1	Manage threats.	4 4	Detect and respond	ALL
Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control				

The proposal to move this objective to more appropriate new subtopic on conflict management accepted.

ADC I(TWR) HUM 3.2.2	Manage errors.	4 4	Detect and respond	ALL
Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control				

As above...

ADC I(TWR) HUM 3.2.3	Manage undesired states.	4 4	Detect and respond	ALL
Optional content: ICAO Circular 314 — AN/178 Threat and Error Management (TEM) in Air Traffic Control				

As above...

HUM 3,9 SOCIAL AND ORGANISATIONAL FACTORS

HUM 3.1 Team resource management (TRM)

ADC I(TWR) HUM 3.1.1	State the relevance of TRM:	1 +	<i>Optional content: TRM course, EUROCONTROL Guidelines for the development of TRM training</i>	ALL
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HUM 3.1.1

HUMUC

The proposal to move the introduction to TRM to later stages of ATCO training (Unit-Continuation) accepted. It will be easier for students to understand it in the operational environment and this topic is explicitly mentioned in AMC1 ATCO.D.045(c)(4) Composition of unit training and AMC1 ATCO.D.080(b)(3) Refresher training.

ADC I(TWR) HUM 3.1.2	State the content of the TRM concept:	1 +	<i>Optional content: team work, human error, team roles, stress, decision making, communication, situational awareness</i>	ALL
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3.1.2

HUMUC

The proposal to move the introduction to TRM to later stages of ATCO training (Unit-Continuation) accepted. It will be easier for students to understand it in the operational environment and this topic is explicitly mentioned in AMC1 ATCO.D.045(c)(4) Composition of unit training and AMC1 ATCO.D.080(b)(3) Refresher training.

HUM 3.29 Teamwork and team roles

ADC I(TWR) HUM 4.3.1	Identify reasons for conflict:	3 3		ALL
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3.2.1

4.2.1

The proposal to move this objective to more appropriate new subtopic on conflict management accepted.

HUM 3.3 Responsible behaviour

ADC I(TWR) HUM 3.3.1	Consider the factors which influence responsible behaviour:	2 2	<i>Optional content: situation, team, personal situation and judgement, instance of justification, moral motivation, personality</i>	ALL
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3.3.1

HUMB 3.2.2

Moved from Rating to Basic – more appropriate for Basic training and Topic on Human performance

ADC I(TWR) HUM 3.3.2	Apply responsible judgement:	3 3	<i>Case study and discussion about a dilemma situation</i>	ALL
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The proposal to delete this unclear objective accepted.

HUM 4 TEAMWORK-STRESS**HUM 4.1 Benefits of a teamwork Stress**

ADC I(TWR) HUM 4.1.1	State the benefits of teamwork.	1 1	Increased safety, efficiency and capacity	ALL
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The proposal to introduce new objective and start with some positive aspect/benefits of team work accepted.

ADC I(TWR) HUM 4.1.2	List the ATCO's human performance elements affected by teamwork.	1 1	Situational awareness, communication, decision making, threat and error management, workload management	ALL
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The proposal to introduce new objective and start with some positive aspect/benefits of a team work accepted.

HUM 4.2 Conflict Stress management

ADC I(TWR) HUM 4.2.1	Identify reasons for conflict.	3 3		ALL
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3.2.1

Proposal to move this objective to more appropriate new subtopic on conflict management accepted.

ADC I(TWR) HUM 4.2.2	Describe strategies to cope with human conflicts.	2 2	Optional content: in your team, in the simulator	ALL
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3.2.3

The proposal to move this conflict related objective to new subtopic "4.2 Conflict management" accepted.

ADC I(TWR) HUM 4.2.3	Describe actions to prevent human conflicts.	2 2	Optional content: TRM team roles	ALL
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3.2.2

The proposal to remove optional content accepted - no need for TRM related content here.

ADC I(TWR) HUM 4.2.4	Consider the benefits of Critical Incident Stress Management (CISM):	2 2		ALL
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HUM 4.2.4

HUMUC

The proposal to move the CISM objective to later stages of ATCO training (Unit-Continuation) accepted. It will be easier for students to understand this safety related concept in the operational environment.

ADC I(TWR) HUM 4.2.5	Explain procedures used following an incident/accident.	2 2	Optional content: GSM, counselling; human element	ALL
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4.2.5
HUMUC

The proposal to move this incident/accident objective to later stages of ATCO training (Unit-Continuation) accepted. It will be easier for students to understand this safety related procedure in the operational environment.

HUM 5 SYSTEMS

HUM 5.1 Concept of systems in ATM/ANS

ADC I(TWR) HUM 5.1.1	Explain the concept of systems.	2 2	People, procedures, equipment, ATM in system terms, simple; complicated and complex systems, system thinking	ALL
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HUMB 1.3.3
HUMR 5.1.1

Moved from Basic to Rating training for students to better understand the content. Suggestion to include the explanation of three complexity levels accepted.

ADC I(TWR) HUM 5.1.2	Describe how changes in one part of a system may impact the other parts. Explain the consequences of a systems failure in ATS.	2 2		ALL
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HUMB 1.3.5
HUMR 5.1.2

Moved from Basic to Rating training for students to better understand the content. Corpus changed for clarity.

ADC I(TWR) HUM 5.1.3	Explain the need for matching human and equipment. Describe the role of the human in the system.	2 2		ALL
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HUMB 1.3.6
HUMR 5.1.3

Moved from Basic to Rating training for students to better understand the content. Corpus changed for clarity.

HUM 5.9 HUMAN ERROR

HUM 5.1 Human error

ADC I(TWR) HUM 5.1.1	Explain the relationship between error and safety.	2 2	Number and combination of errors; proactive versus reactive approach to discovery of error	ALL
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HUMB 4.2.4

Optional content: ICAO Circular 314 = AN/178 Threat and Error Management (TEM) in Air Traffic Control

The proposal to refresh/delete Topic 5 ERROR and associated Subtopics/objectives accepted - now well covered in either Basic or new "Threat and error management" topic in the Ratings.

ADC I(TWR) HUM 5.1.2	Differentiate between the types of error:	2 2	Slips, lapses, mistakes <i>Optional content: Circular 314 = AN/178 Threat and Error Management (TEM) in Air Traffic Control</i>	ALL
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The proposal to delete this objective accepted - Not need for this classification in the Initial training but later in Safety management training.

ADC I(TWR) HUM 5.1.3	Describe error-prone conditions:	2 2	<i>Optional content: increase in traffic, changes in procedures, complexities of systems or traffic, weather, unusual occurrences</i>	ALL
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The proposal to refresh/delete Topic 5 ERROR and associated Subtopics/objectives accepted - now well covered in the new TEM topic.

ADC I(TWR) HUM 5.1.4	Collect examples of different error types, their causes and consequences in ATC:	3 3	<i>Optional content: ICAO Circular 314 = AN/178 Threat and Error Management (TEM) in Air Traffic Control</i>	ALL
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As above.

ADC I(TWR) HUM 5.1.5	Explain how to detect errors to compensate for them:	2 2	STCA, MSAW, individual and collective strategy <i>Optional content: ICAO Circular 314 = AN/178 Threat and Error Management (TEM) in Air Traffic Control</i>	ALL
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As above.

ADC I(TWR) HUM 5.1.6	Execute corrective actions:	3 3	Error compensation <i>Optional content: ICAO Circular 314 = AN/178 Threat and Error Management (TEM) in Air Traffic Control</i>	ALL
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As above.

ADC I(TWR) HUM 5.1.7	Explain the importance of error management:	2 2	<i>Optional content: prevention of incidents, safety improvement, revision of procedures and/or working practises</i>	ALL
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- 5.1.7
- 3.1.1

Modified by adding the notion of "threat" and moved to new TEM Topic as 3.1.1

ADC I(TWR) HUM 5.1.8	Describe the impact on an ATCO following an occurrence/incident.	2 2	<i>Optional content: reporting, SMS, investigation, CISM</i>	ALL
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5.1.8

HUMUC

The proposal to delete this objective for consideration/inclusion in the later stages of ATCO training (Unit-Continuation-Development) accepted.

HUM 5.2 Violation of rules

ADC I(TWR) HUM 5.2.1	Explain the causes and dangers of violation of rules becoming accepted as a practice.	2 2	<i>Optional content: ICAO Circular 314 = AN/178 Threat and Error Management (TEM) in Air Traffic Control</i>	ALL
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5.2.1

HUMUC

The proposal to move this violation of rules objective to later stages of ATCO training (Unit-Continuation) accepted. It will be easier for students to understand it in the operational environment.

HUM 6 COMMUNICATION COLLABORATIVE WORK

HUM 6.1 Effective communication

ADC I(TWR) HUM 6.1.1	Explain effective communication in ATC operations.	2 2	ICAO Doc 9868	ALL
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6.1.1

The proposal to introduce new communication related objective to explain the importance of effective communication in ATC environment (from human performance point of view) accepted.

ADC I(TWR) HUM 6.1.1	Use communication effectively in ATC.	3 3		ALL
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ATM 2.1.4

The proposal to delete this objective as similar(at level 4) already exists in ATM accepted.

ADC I(TWR) HUM 6.1.2	Explain key strategies used to enable open communication.	2 2	<i>Optional content: Active listening, active speaking, assertiveness, honesty, relevance, facts, neutrality</i>	ALL
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The proposal to introduce new communication related objective to stress the importance of open communication accepted.

ADC I(TWR) HUM 6.1.2	Analyse examples of pilot and controller communication for effectiveness.	4 4		ALL
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HUM 6.1.2

ATM 2.1.5

Accepted proposal of merging and moving some practical related communication objectives to ATM subject.

ADC I(TWR) HUM 6.1.3	Describe parameters affecting controller's communication competency. 7 pilot cooperation	2 2	Workload, mutual knowledge, controller versus pilot mental picture, distractions, sound, human conflicts	ALL
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6.4.1

Optional content: Communication between and in the team(s), in the simulator, with the pilots, instructors, coordination partners workload, mutual knowledge, controller vs pilot mental picture

Improved wording, content and objective moved to Effective communication to broaden the scope from pilot controller cooperation only to overall ATCO's communication competence.

HUM 6.2 Effective feedback

ADC I(TWR) HUM 6.2.1	Define feedback.	1 1		ALL
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HUM 6.2.1

The proposal to introduce new communication related subtopic and associated objectives to stress the importance of Effective feedback accepted.

ADC I(TWR) HUM 6.2.2	Explain the purpose of receiving and giving feedback and its effect on performance.	2 2		ALL
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HUM 6.2.2

As above.

ADC I(TWR) HUM 6.2.3	Consider the impact of communication styles on feedback, and resolving conflicts.	2 2		ALL
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HUM 6.2.3

As above.

ADC I(TWR) HUM 6.2.4	Integrate feedback into performance.	4 4		ALL
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HUM 6.2.4

As above.

HUM 6.2 Collaborative work within the same area of responsibility

ADC I(TWR) HUM 6.2.1	List communication means between controllers in charge of the same area of responsibility (sector or tower).	1 1	Optional content: electronic, written, verbal and non-verbal communication	ALL
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HUM 6.2.1

ATM 2.1.1

The proposal to move this communication objective to EQPS subject modified and some communication objectives moved/merged to ATM communication related topic.

ADC I(TWR) HUM 6.2.2	Explain consequences of the use of communication means on effectiveness.	2 2	Optional content: strips legibility and encoding, labels designation, feedback	ALL
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6.2.2

The proposal of merging some communication (collaborative work) objectives in the appropriate ATM topic accepted. This objective is already well covered there.

ADC I(TWR) HUM 6.2.3	List possible actions to provide a safe position handover.	1 1	Optional content: rigour, preparation, overlap time	ALL
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HUM 6.2.3

ATM 9.3.3

The proposal of moving and merging some communication (handover/takeover) objectives in the appropriate ATM topic accepted.

ADC I(TWR) HUM 6.2.4	Explain consequences of a missed position handover process.	2 2		ALL
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HUM 6.2.4

ATM 9.3.4

The proposal of moving and merging some communication (handover/takeover) objectives in the appropriate ATM topic accepted.

HUM 6.3 Collaborative work between different areas of responsibility

ADC I(TWR) HUM 6.3.1	List factors and means for an effective coordination between sectors and/or tower positions.	1 4	Optional content: other sectors constraints, electronic coordination tools	ALL
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The proposal of delete this communication (collaborative work) objective accepted. This objective is already well covered in ATMB 5.3 "Means of coordination" subtopic and at a higher levels (2 and 3)

HUM 6.4 Controller/pilot cooperation

ADC I(TWR)	Describe parameters affecting controller /pilot cooperation	2	ALL
HUM		2	
6.4.1			
6.4.1			<i>Optional content: workload, mutual knowledge, controller vs pilot mental picture</i>
6.1.3			

The objective (with the modified wording and content) moved to Effective communication to broaden the scope from pilot controller cooperation only to overall ATCO's communication competence.

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:

EQPS 1		VOICE COMMUNICATIONS		
EQPS 1.1		Radio communications		
ADC I(TWR) EQPS 1.1.1	Operate two-way communication equipment.	3 3	Transmit/receive switches, procedures <i>Optional content: frequency selection, standby equipment</i>	ALL
ADC I(TWR) EQPS 1.1.2	Identify indications of operational status of radio equipment.	3 3	<i>Optional content: indicator lights, serviceability displays, selector/frequency displays</i>	ALL
EQPS 1.2		Other voice communications		
ADC I(TWR) EQPS 1.2.1	Operate landline communications.	3 3	<i>Optional content: telephone, interphone and intercom equipment</i>	ALL
EQPS 2		AUTOMATION IN ATS		
EQPS 2.1		Aeronautical fixed telecommunication network (AFTN)		
ADC I(TWR) EQPS 2.1.1	Decode AFTN messages.	3 3	<i>Optional content: movement and control messages, NOTAM, SNOWTAM, BIRDTAM, etc.</i>	ALL
EQPS 2.2		Automatic data interchange		
ADC I(TWR) EQPS 2.2.1	Use automatic data transfer equipment where available.	3 3	<i>Optional content: sequencing systems, automated information and coordination, OLDI</i>	ADC APS ACS
ADC I(TWR) EQPS 2.2.2	Explain operational application of CPDLC for departure clearance (DCL) delivery and D-ATIS.	2 2	ICAO Doc 9694	ADC
EQPS 3		CONTROLLER WORKING POSITION		
EQPS 3.1		Operation and monitoring of equipment		
ADC I(TWR) EQPS 3.1.1	Monitor the technical integrity of the controller working position.	3 3	Notification procedures, responsibilities	ALL

ADC I(TWR) EQPS 3.1.2	Operate the equipment of the controller working position.	3 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
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ADC I(TWR) EQPS 3.1.3	Operate available equipment in abnormal and emergency situations.	3 3		ALL
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EQPS 3.2 Situation displays and information systems

ADC I(TWR) EQPS 3.2.1	Use situation displays.	3 3		ALL
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ADC I(TWR) EQPS 3.2.2	Check availability of information.	3 3		ALL
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ADC I(TWR) EQPS 3.2.3	Obtain information from equipment.	3 3	<i>Optional content: information from wind direction indicator</i>	ADC
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ADC I(TWR) EQPS 3.2.4	Take account of anti-incursion equipment.	2 2		ADC
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ADC I(TWR) EQPS 3.2.5	Explain the use of ASMGCS.	2 2		ADC
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EQPS 3.3 Flight data systems

ADC I(TWR) EQPS 3.3.1	Use the flight data information at controller working position.	3 3		ALL
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EQPS 4 FUTURE EQUIPMENT

EQPS 4.1 New developments

ADC I(TWR) EQPS 4.1.1	Recognise future developments.	1 1	<i>New advanced systems</i> <i>Optional content: European ATM master plan, European plan for aviation safety</i>	ALL
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The proposal to clarify this objective accepted by adding relevant reference to optional content.

EQPS 5 EQUIPMENT AND SYSTEMS LIMITATIONS AND DEGRADATION

EQPS 5.1 Reaction to limitations

ADC I(TWR) EQPS 5.1.1	Take account of the limitations of equipment and systems.	2 2		ALL
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The proposal to move this objective to ATM or ABES not accepted - The location of the objectives in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with other subjects/topics...). This level 2 objective is introduction to the following (detailed) level 3 objective related to standard ATC equipment degradation.

ADC I(TWR) EQPS 5.1.2	Respond to technical deficiencies of the operational position.	3 3	Notification procedures, responsibilities	ALL
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EQPS 5.2 Communication equipment degradation

ADC I(TWR) EQPS 5.2.1	Identify that communication equipment has degraded.	3 3	Optional content: ground-air, ground-ground and landline communications	ADC
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ADC I(TWR) EQPS 5.2.2	Apply contingency procedures in the event of communication equipment degradation.	3 3	Optional content: total or partial degradation of ground-air and landline communications, alternative methods of transferring data	ALL
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EQPS 5.3 Navigational equipment degradation

ADC I(TWR) EQPS 5.3.1	Identify when a navigational equipment failure will affect operational ability.	3 3	Optional content: VOR ; navigational aids	ALL
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The proposal to add GNSS to content modified. The generic term "Navigational aids" includes the proposed GNSS as well; VOR also removed from optional content (included in the generic term of nav aids)

ADC I(TWR) EQPS 5.3.2	Apply contingency procedures in the event of a navigational equipment degradation.	3 3	Optional content: vertical separation, information to aircraft, navigational assistance, seeking assistance from adjacent units	ALL
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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.

PEN 1 FAMILIARISATION

PEN 1.1 Study visit to an aerodrome

ADC I(TWR) PEN 1.1.1	Appreciate the functions and provision of an operational aerodrome control service.	3 3	Study visit to TWR	ADC
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Editorial correction of the subtopic and associated objective's corpus.

PEN 2 AIRSPACE USERS

PEN 2.1 Contributors to civil ATS operations

ADC I(TWR) PEN 2.1.1	Characterise civil ATS activities at aerodrome.	2 2	Study visit to TWR <i>Optional content: familiarisation visits to APP, ACC, AIS, RCC</i>	ADC
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ADC I(TWR) PEN 2.1.2	Characterise other parties interfacing with ATS operations.	2 2	<i>Optional content: familiarisation visits to engineering services, firefighting and emergency services, airline operations offices</i>	ALL
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PEN 2.2 Contributors to military ATS operations

ADC I(TWR) PEN 2.2.1	Characterise military ATS activities.	2 2	<i>Optional content: familiarisation visits to TWR, APP, ACC, AIS, RCC, Air Defence Units</i>	ALL
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PEN 3 CUSTOMER RELATIONS

PEN 3.1 Provision of services and user requirements

ADC I(TWR) PEN 3.1.1	Appreciate Identify the role of an air navigation ATC as a service provider.	3 3	Regulation (EU) 2018/1139	ALL
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The proposal to clarify this objective accepted - better wording and appropriate regulatory reference added to mandatory content.

ADC I(TWR) PEN 3.1.2	Appreciate ATS users' requirements.	3 3		ALL
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PEN 4 ENVIRONMENTAL PROTECTION

PEN 4.1 Environmental protection

ADC I(TWR) PEN 4.1.1	Describe the environmental constraints on aerodrome operations.	2 2	<i>Optional content: ICAO Doc 10013 Circular 303 - Operational opportunities to reduce minimise fuel burn use and reduce emissions</i>	ADC APP APS
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The proposal to update optional content to more appropriate document accepted.

ADC I(TWR) PEN 4.1.2	Explain the use of Collaborative Environmental Management (CEM) process at airports.	2 2	<i>Optional content: European ATM Master Plan, EUROCONTROL CEM Specification</i>	ADC APP APS
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The proposal for more recent and appropriate optional content accepted.

ADC I(TWR) PEN 4.1.3	Appreciate the mitigation techniques used at aerodromes to minimise aviation's impact on the environment.	3 3	<i>Optional content: noise abatement procedures, noise preferential routes, flight efficiency</i>	ADC APP
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The proposal to updated the content accepted + APP objective merged with the ADC by making the corpus and content identical.

Subject 10: ABNORMAL AND EMERGENCY SITUATIONS

The subject objective is:

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

ABES 1		ABNORMAL AND EMERGENCY SITUATIONS (ABES)		
ABES 1.1 Overview of ABES				
ADC I(TWR) ABES 1.1.1	List common abnormal and emergency situations.	1 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, GNSS failure	ALL
Improved content due to emerged use and possible failure of GNSS + The proposal to move this objective to ACFT not accepted - The location of the objectives in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with other subjects/topics...). Therefore most of them are related to or covered in the SIM and linked with the major subject - ATM, anyway.				
ADC I(TWR) ABES 1.1.2	Identify potential or actual abnormal and emergency situations.	3 3		ALL
The proposal to move this objective to ACFT not accepted - The location of the objectives in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with the other subjects/topics...). Therefore most of them are related to or covered in the simulator and linked with the major subject - ATM, anyway.				
ADC I(TWR) ABES 1.1.3	Take into account the procedures for given abnormal and emergency situations.	2 2	Bird strike, aborted take-off Optional content: ICAO Doc 4444	ADC
ADC I(TWR) ABES 1.1.4	Take into account that procedures do not exist for all abnormal and emergency situations.	2 2	Optional content: real life examples	ALL
The proposal to move this objective to ACFT not accepted - The location of the objectives in the Rating training is almost irrelevant. They all need to be covered and are dependent on the prerequisites (relation with the other subjects/topics...). Therefore, most of them are related to or covered in the simulator and linked with the major subject - ATM, anyway.				
ADC I(TWR) ABES 1.1.5	Consider how the evolution of a situation may have an impact on safety.	2 2	Optional content: separation, information, coordination	ALL

ABES 2 SKILLS IMPROVEMENT

ABES 2.1 Communication effectiveness

ADC I(TWR) ABES 2.1.1	Ensure effective communication in all circumstances including the case where standard phraseology is not applicable.	4 4	Phraseology, vocabulary, readback, silence instruction	ALL
ADC I(TWR) ABES 2.1.2	Apply change of radiotelephony call sign.	3 3	ICAO Doc 4444 ICAO Doc Regulation (EU) No 923/2012 <i>Optional content: ICAO Doc 4444</i>	ALL

The proposal to reintroduce again this objective (deleted in 2019 - Phase 1) accepted and content updated appropriately.

ABES 2.2 Avoidance of mental overload

ADC I(TWR) ABES 2.2.1	Describe actions to keep control of the situation.	2 2	<i>Optional content: sector splitting, holding, flow management, task delegation</i>	ALL
ADC I(TWR) ABES 2.2.2	Organise priority of actions.	4 4		ALL
ADC I(TWR) ABES 2.2.3	Ensure effective circulation of information.	4 4	<i>Optional content: between executive and planner/coordinator, with the supervisor, between sectors, between ACC, APP and TWR , with ground staff, etc.</i>	ALL
ADC I(TWR) ABES 2.2.4	Consider asking for help.	2 2		ALL

ABES 2.3 Air / ground cooperation

ADC I(TWR) ABES 2.3.1	Collect appropriate information relevant to the situation.	3 3		ALL
ADC I(TWR) ABES 2.3.2	Assist the pilot.	3 3	Pilot workload <i>Optional content: instructions, information, support, human factors, etc.</i>	ALL

ABES 3 PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS

ABES 3.1 Application of procedures for ABES

ADC I(TWR) ABES 3.1.1	Apply the procedures for given abnormal and emergency situations.	3 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
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The proposal to add GNSS failure to content due to emerged use and possible failure of GNSS not accepted for this practical objective - No procedures published therefore difficult to implement in Initial training.

ABES 3.2 Radio failure

ADC I(TWR) ABES 3.2.1	Describe the procedures followed by a pilot when he/she experiences complete or partial radio failure.	2 2	Regulation (EU) No 923/2012 Optional content: ICAO Doc 4444, military procedures, simulator operation procedures	ALL
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The proposal to add national procedures related to the pilots' comm. failure to the content of ABES objective accepted by adding simulator operation procedures.

ADC I(TWR) ABES 3.2.2	Apply the procedures to be followed when a pilot experiences complete or partial radio failure.	3 3	Regulation (EU) No 923/2012 Optional content: prolonged loss of communication	ALL
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The proposal to add SERA Regulation (EU) No 923/2012 to mandatory content accepted. (SERA.14087 Use of relay communication technique) includes the ATC action after the comm. failure.)

ABES 3.3 Unlawful interference and aircraft bomb threat

ADC I(TWR) ABES 3.3.1	Apply ATC procedures associated with unlawful interference and aircraft bomb threat.	3 3	Regulation (EU) No 923/2012 Optional content: simulator operation procedures	ALL
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The proposal to add ICAO Annexes (14 and 17) modified by adding the simulator operation procedures to optional content in addition to SERA reference in mandatory content.

ABES 3.4 Strayed or unidentified aircraft

ADC I(TWR) ABES 3.4.1	Apply the procedures in the case of strayed aircraft.	3 3	Regulation (EU) No 923/2012 Optional content: inside controlled airspace, outside controlled airspace	ALL
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ADC I(TWR) ABES 3.4.2	Apply the procedures in the case of unidentified aircraft.	3 3	Regulation (EU) No 923/2012	ALL
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ADC I(TWR) ABES 3.4.3	Provide navigational assistance to aircraft.	4 4	Optional content: diverted aircraft, aircraft lost or unsure of position, information derived locally or from radar service or from other pilots, nearest most suitable aerodrome, track, heading, distance, aerodrome information, any other relevant navigational assistance, ICAO Doc 4444, etc.	ADC
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ABES 3.5 Runway incursion

ADC I(TWR) ABES 3.5.1	Apply ATC procedures associated with runway incursion.	3 3	ICAO Doc 4444, Regulation (EU) 2017/373 Optional content: ICAO Doc 4444	ADC
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Regulatory update - Regulation (EU) 2017/373 with the content transposed as AMC16 ATS.TR.210(a)(3) and GM1 to AMC16, though not all, and, therefore ICAO Doc 4444 moved to optional content.

ABES 3.6 Interception of civil aircraft

ADC I(TWR) ABES 3.6.1	Explain the procedures in the event of interception of civil aircraft.	2 3	Regulation (EU) No 923/2012	ALL
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New subtopic an associated objective to cover important safety and regulatory requirement that was missing in the IT.

Subject 11: AERODROMES

The subject objective is:

~~Learners shall recognise and understand the design and layout of aerodromes.~~

AGA 1 AERODROME DATA, LAYOUT AND COORDINATION					
AGA 1.1 Definitions					
ADC I(TWR) AGA 1.1.1	Define aerodrome data.	1 1	Regulation (EU) No 139/2014 <i>Optional content: aerodrome elevation, reference point, apron, movement area, manoeuvring area, hot spot</i>	ADC APP APS	
AGA 1.2 Coordination					
ADC I(TWR) AGA 1.2.1	Identify the information that has to be passed between Air Traffic Services (ATS) and the airport authority.	3 3	Airport conditions, fire/rescue category, condition of ground equipment and NAVAIDs, AIRAC, Regulation (EU) No 139/2014	APP APS ADC	
AGA 2 MOVEMENT AREA					
AGA 2.1 Movement area					
ADC I(TWR) AGA 2.1.1	Describe movement area.	2 2	Regulation (EU) No 139/2014	ADC APP APS	
ADC I(TWR) AGA 2.1.2	Describe the marking of obstacles and unusable or unserviceable areas.	2 2	Flags, signs on pavement, lights	ADC APP APS	
ADC I(TWR) AGA 2.1.3	Identify the information on conditions of the movement area that have to be passed to aircraft.	3 3	Essential information on aerodrome conditions	ADC APP APS	
AGA 2.2 Manoeuvring area					
ADC I(TWR) AGA 2.2.1	Describe manoeuvring area.	2 2	Regulation (EU) No 139/2014	ADC APP APS	
ADC I(TWR) AGA 2.2.2	Describe taxiway.	2 2		ADC APP APS	

ADC I(TWR) AGA 2.2.3	Describe the daylight marking on taxiways.	2 2		ADC APP APS
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ADC I(TWR) AGA 2.2.4	Describe taxiway lighting.	2 2		ADC APP APS
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AGA 2.3 Runways

ADC I(TWR) AGA 2.3.1	Describe runway.	2 2	Runway, runway surface, runway strip, shoulder, runway end safety areas, clearways, stopways	ADC APP APS
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ADC I(TWR) AGA 2.3.2	Describe instrument runway.	2 2	Regulation (EU) No 139/2014	ADC APP APS
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ADC I(TWR) AGA 2.3.3	Describe non-instrument runway.	2 2	Regulation (EU) No 139/2014	ADC APP APS
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ADC I(TWR) AGA 2.3.4	Explain declared distances.	2 2	TORA, TODA, ASDA, LDA	ADC APP APS
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ADC I(TWR) AGA 2.3.5	Explain the differences between ACN and PCN.	2 2	Strength of pavements	ADC APP APS
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ADC I(TWR) AGA 2.3.6	Describe the daylight markings on runways.	2 2	<i>Optional content: runway designator, centre line, threshold, aiming point, fixed distance, touchdown zone, side strip, colour</i>	ADC APP APS
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ADC I(TWR) AGA 2.3.7	Describe runway lights.	2 2	<i>Optional content: colour, centre line, intensity, edge, touchdown zone, threshold, barrettes</i>	ADC APP APS
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ADC I(TWR) AGA 2.3.8	Explain the functions of visual landing aids.	2 2	<i>Optional content: AVASI, VASI, PAPI</i>	ADC APP APS
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ADC I(TWR) AGA 2.3.9	Describe the approach lighting systems.	2 2	Centre line, cross bars, stroboscopic lights, colours, intensity and brightness	ADC APP APS
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ADC I(TWR) AGA 2.3.10	Characterise the effect of water/ice on runways.	2 2		ADC APP APS
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ADC I(TWR) AGA 2.3.11	Explain braking action performance and methods of reporting it.	2 2	Braking action coefficient	ADC APP APS
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The proposal to update corpus and remove the content accepted to align with new ICAO Global Reporting Format (GRF) terminology with regard to braking performance.

ADC I(TWR) AGA 2.3.12	Explain the effect of runway visual range on aerodrome operation.	2 2		ADC APP APS
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AGA 3 OBSTACLES

AGA 3.1 Obstacle-free airspace around aerodromes

ADC I(TWR) AGA 3.1.1	Explain the necessity for establishing and maintaining an obstacle-free airspace around aerodromes.	2 2		ADC APP APS
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AGA 4 MISCELLANEOUS EQUIPMENT

AGA 4.1 Location

ADC I(TWR) AGA 4.1.1	Explain the location of different aerodrome ground equipment.	2 2	Optional content: LLZ, GP, VDF, radio communication or ATS surveillance systems sensors, stopbars, AVASI, VASI, PAPI	ADC APP APS
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