



EASA
European Aviation Safety Agency

RMT.0256 Performance-based navigation (PBN)

Overview of deliverables

General briefing

25 August 2016

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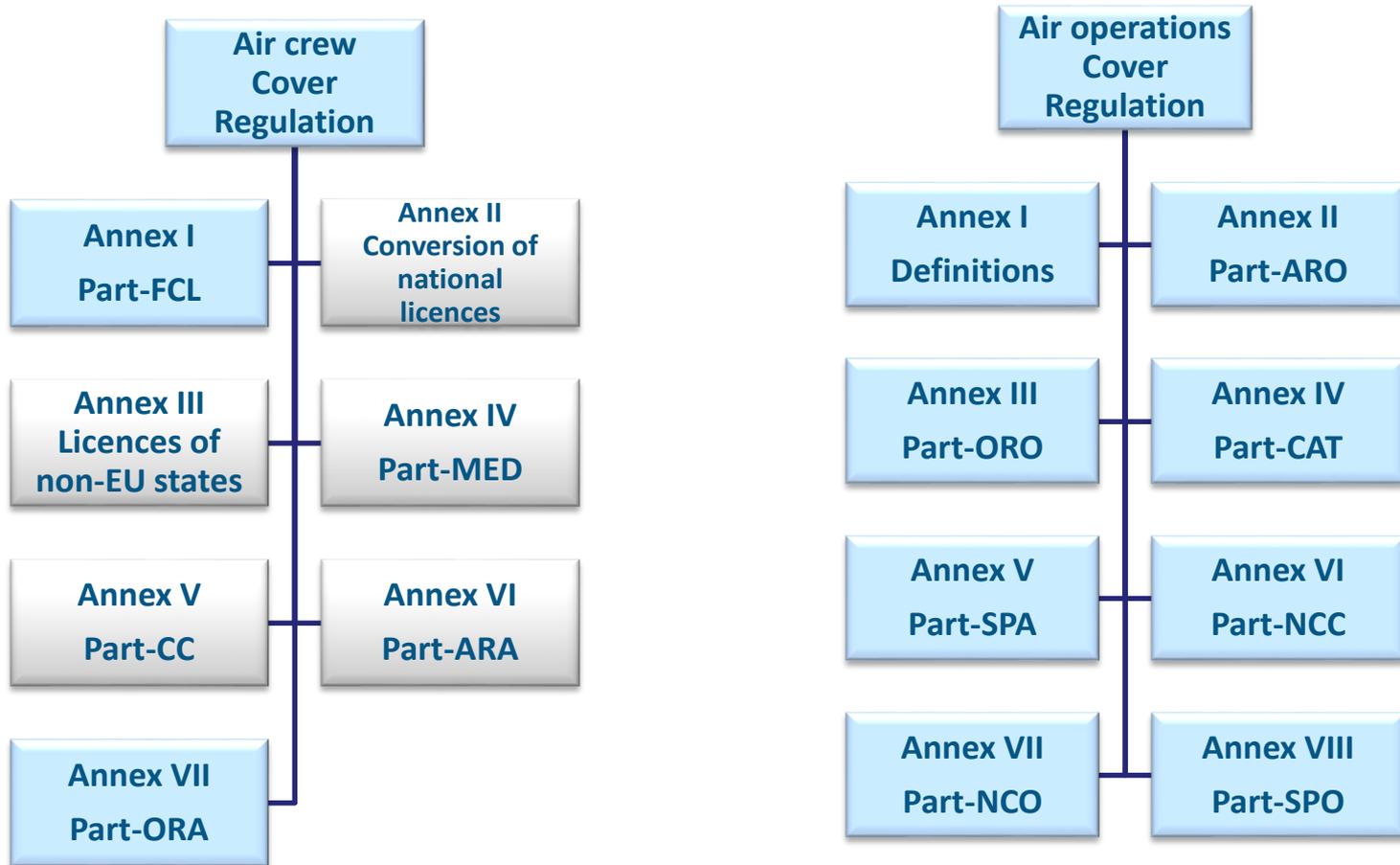


➤ **Main outcome of RMT.0256 (PBN)**

- Full integration of PBN into the European regulatory framework for pilot training and air operations
- Most PBN specifications are treated as a normal mode of navigation
- The requirement for specific (operational) approvals was removed for most PBN specifications and replaced by improved pilot training, testing and checking rules and performance-based and proportionate operating rules
- A specific approval remains only for complex PBN specifications and operations which cannot (yet) be trained sufficiently during initial pilot training: RNP AR APCH and RNP 0.3 (helicopter operations)



► Affected requirements and related AMC/GM (in blue shape fill)





- **Regulation (EU) 2016/539 amending Regulation (EU) No 1178/2011 (Aircrew)**
 - Cover Regulation
 - Provides details for the transition period
 - For existing IR holders: crediting of theoretical and practical PBN-related training, or PBN experience towards the new training requirements „at the discretion of the competent authority“
 - Completion endorsed in the pilot’s logbook
 - Existing IR holders may continue using the IR for conventional operations only (without PBN privilege) until 25 August 2020
 - Applicability date:
 - Regulation entered into force 8 April 2016
 - PBN-related amendments shall apply from 25 August 2018
 - PBN training mandatory from 25 August 2020
 - IR rating with PBN privileges mandatory from 25 August 2020



- **Regulation (EU) 2016/539 amending Regulation (EU) No 1178/2011 (Aircrew)**
 - Part-FCL
 - PBN added to the privileges of the instrument rating (IR)
 - PBN related definitions added
 - Practical training programme, skill and proficiency check schedules amended
 - Applicable limits now contain PBN related items
 - Training and check items with PBN exercises
 - For the amended rules, the new ICAO approach classification terminology is used
 - New PBN-related training syllabi and learning objectives added to the AMC and GM
 - Part-ORA
 - Aircraft or FSTDs used for IR training, shall be equipped for PBN



- **Reg. 2016/1199 amending Reg. 965/2012 (air operations) 1/2**
 - Parts-CAT/NCC/NCO/SPO
 - Adding new operating rules, in particular requiring that
 - aircraft meets the airworthiness certification requirements for the applied PBN specification
 - aircraft is operated in conformance with relevant PBN specification and AFM limitations
 - the flight crew/pilot has been trained and checked for the intended operation
 - operating procedures are available
 - navigational database is suitable and current
 - sufficient means are available to navigate and land at the destination aerodrome or at any destination alternate aerodrome in the case of loss of capability for the intended approach and landing operation
 - Part-ORO
 - PBN must be checked for OPC, similar to IR proficiency checks



- **Reg. 2016/1199 amending Reg. 965/2012 (air operations) 2/2**
 - Part-SPA
 - Specific approval only required for RNP AR APCH and RNP 0.3 (H)
 - RNP AR APCH approval can be provided in the form of a generic approval or procedure-specific approval (e.g. if a certain instrument approach procedure does not comply with ICAO procedure design criteria)
 - New RNP AR APCH training material and FOSA rules
 - Part-ARO
 - New implementing rules on specific approvals for RNP AR APCH
 - Consequential amendments to Appendix II (OPSPECS template) and Appendix V (list of specific approvals)
 - Applicability date: 25 August 2016



► Overview of PBN specifications, flight phase, specific approvals

Navigation specification	FLIGHT PHASE							
	En route		Arrival	Approach				Departure
	Oceanic	Continental		Initial	Intermediate	Final	Missed	
RNAV 10	10							
RNAV 5		5	5					
RNAV 2		2	2					2
RNAV 1		1	1	1	1		1	1
RNP 4	4							
RNP 2	2	2						
RNP 1			1	1	1		1	1
A-RNP	2	2 or 1	1-0.3	1-0.3	1-0.3	0.3	1-0.3	1-0.3
RNP APCH (LNAV)				1	1	0.3	1	
RNP APCH (LNAV/VNAV)				1	1	0.3	1	
RNP APCH (LP)				1	1		1	
RNP APCH (LPV)				1	1		1	
RNP AR APCH				1-0.1	1-0.1	0.3-0.1	1-0.1	
RNP 0.3 (H)		0.3	0.3	0.3	0.3		0.3	0.3

Numbers specify the accuracy level



no specific approval required



specific approval required



➤ Actions

- Competent authorities for pilot training:
 - Provide information on the requirements for existing IR holders to demonstrate PBN-related theoretical knowledge and practical experience
 - Amend internal procedures
 - Provide difference training to inspectors
- Existing and future IR holders:
 - Note the procedures of the competent authority to demonstrate PBN-related theoretical knowledge and practical experience
 - Review the new rules for training, testing, proficiency checks and revalidations



➤ Actions

- Approved training organisations:
 - Amend training material to cover the new PBN-related syllabi and learning objectives
 - Ensure that an adequate fleet of training aircraft or FSTDs appropriately equipped for the training courses can be provided
- Instructors and examiners:
 - Study the new PBN-related syllabi and learning objectives and ensure PBN proficiency



➤ Actions

- Competent authorities for air operators:
 - Amend internal procedures on approvals/acceptance of PBN operations
 - Amend existing OPSPECS and list of specific approvals, where necessary
 - Provide difference training to inspectors
- Air operators:
 - Amend operating manuals to comply with the new operating rules
 - Provide difference training to relevant personnel



➤ Origin of new rules

- Developed by rulemaking group of RMT.0256
- Existing AMC20 material, e.g. AMC20-26, AMC20-27
- ICAO Doc 9613, PBN Manual, 4th edition
- PBN related provisions in ICAO Doc 8168, PANS-OPS
- Adopted amendments to ICAO Annex 6 – Amdt. 40 to Part I, Amdt. 34 to Part II, Amdt. 20 to Part III (based on the European initiative, ICAO and a number of regulators around the world amended standards based on the European regulatory change)



► Links to the amended rules – aircrew

- Commission Regulation (EU) No 2016/539 <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1460022905237&uri=CELEX%3A32016R0539>
- ED Decision 2016/008/R 'Revision of the operational approval criteria for performance-based navigation (PBN)' <http://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2016008r>



► Links to the amended rules - air operations 1/2

- Commission Regulation (EU) No 2016/1199 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2016.198.01.0013.01.ENG&toc=OJ:L:2016:198:TOC
- ED Decision 2016/014/R 'Revision of operational approval criteria for performance-based navigation — Air operations' | AMC and GM to Part-ARO — Issue 3, Amendment 2 (<http://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2016014r>)
- ED Decision 2016/015/R 'Revision of operational approval criteria for performance-based navigation — Air operations' | AMC and GM to Part-CAT — Issue 2, Amendment 6 (<http://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2016015r>)
- ED Decision 2016/016/R 'Revision of operational approval criteria for performance-based navigation — Air operations' | GM to Annex I (Definitions) — Amendment 4 (<http://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2016016r>)
- ED Decision 2016/017/R 'Revision of operational approval criteria for performance-based navigation — Air operations' | AMC and GM to Part-NCC — Amendment 5 (<http://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2016017r>)
- ED Decision 2016/018/R 'Revision of operational approval criteria for performance-based navigation — Air operations' | AMC and GM to Part-NCO — Issue 2, Amendment 3 (<http://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2016018r>)

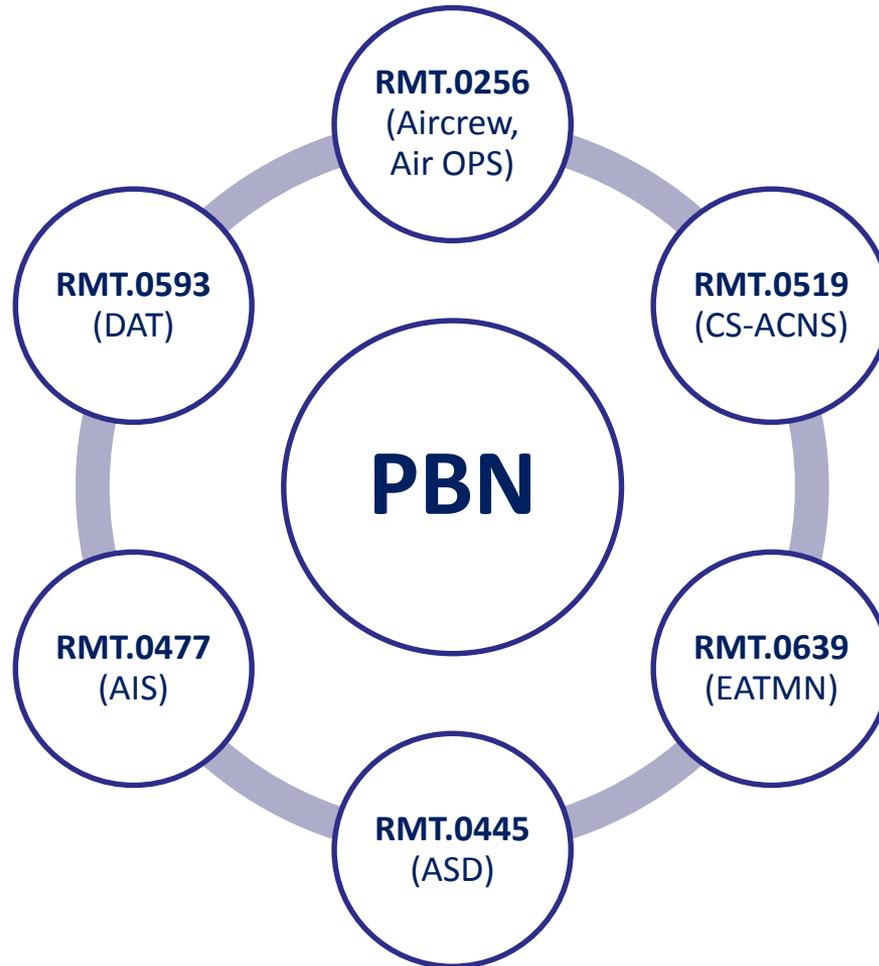


➤ Links to the amended rules - air operations 2/2

- ED Decision 2016/019/R 'Revision of operational approval criteria for performance-based navigation — Air operations' | AMC and GM to Part-ORO — Issue 2, Amendment 8 (<http://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2016019r>)
- ED Decision 2016/020/R 'Revision of operational approval criteria for performance-based navigation — Air operations' | AMC and GM to Part-SPA — Amendment 3 (<http://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2016020r>)
- ED Decision 2016/021/R 'Revision of operational approval criteria for performance-based navigation — Air operations' | AMC and GM to Part-SPO — Amendment 5 (<http://www.easa.europa.eu/document-library/agency-decisions/ed-decision-2016021r>)



Overview of all PBN-related RMTs





Overview of all PBN-related RMTs

➤ **RMT.0519 (CS-ACNS)**

- developing the airworthiness rules for PBN operations

➤ **RMT.0639 (EATMN)**

- containing rules addressed to ANSPs and aerodrome operators for the use of PBN specifications en-route , terminal area and approach

➤ **RMT.0445 (ASD)**

- specifying that PANS-OPS criteria to be used for procedure design

➤ **RMT.0477 (AIS)**

- ensuring data quality of raw data and specifying aeronautical information products and services

➤ **RM.0593 (DAT)**

- ensuring the quality of the provision of air navigation data through service providers



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Thank you for your attention

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