

SMATSA PBN Transition Plan for Serbia

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Based on the Serbia and Montenegro Air Traffic Services SMATSA llc Regulation of organisation and job description - OU/DIR No 235/28 dated 21.12.2018. with associated amendments, in accordance with defined tasks and authorisation for the job position Director of SMATSA llc, I hereby enact

SMATSA PBN Transition Plan for Serbia

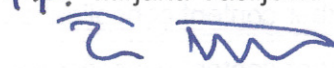

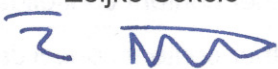



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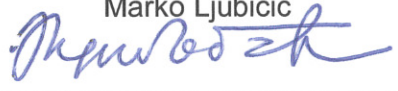
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TABLE OF CONTENTS

FOREWORD	1
EXECUTIVE SUMMARY	2
1 INTRODUCTION	3
1.1 Presentation of the document	3
1.2 Purpose	4
1.3 Scope	4
1.4 Entry into force and application	5
2 EVALUATION OF THE OPERATIONAL ENVIRONMENT	7
2.1 Instrument approach procedures	7
2.2 SID and STAR routes	14
2.3 En-route.....	20
2.4 Surveillance and communication services.....	20
2.5 Airborne equipment and capabilities	21
3 COMPLIANCE WITH THE REQUIREMENTS.....	23
3.1 Implementation of IAPs.....	23
3.2 Implementation of SIDs and STARs.....	26
3.3 Implementation of ATS routes.....	29
3.4 Implementation of SID/STAR/ATS routes for rotorcraft operations.....	29
3.5 Exclusive use of PBN and establishment of contingency measures.....	30
4 IMPLEMENTATION OBJECTIVES	30
4.1 Achieved level of compliance with PBN IR	30
4.2 Planned measures	30
5 TRANSITION PLAN	31
5.1 Short-term plan	33
5.2 Medium-term plan	33
5.3 Long-term plan.....	35
6 FUTURE OPERATIONAL ENVIRONMENT	36
6.1 Instrument approach procedures	36
6.2 SID and STAR routes	38
6.3 En-route.....	39
6.4 NAVAID infrastructure.....	40
6.5 Surveillance and communication services.....	42
7 DEFINITIONS	43
8 ACRONYMS AND ABBREVIATIONS	43
9 APPENDICES.....	44
APPENDIX 1 - PBN Checklist of implementation	45
APPENDIX 2 - Detailed PBN implementation roadmap.....	46

LIST OF TABLES

Table 1 Aerodromes falling into the scope of the PBN IR.....	4
Table 2 Summary of the PBN IR requirements by implementation timing	5
Table 3 Summary of the PBN IR requirements by article	6
Table 4 Overview of the current approach operations	7
Table 5 LYBE approach operations	8
Table 6 Conventional approach procedures at LYBE	8
Table 7 LYNI approach operations.....	9
Table 8 Conventional approach procedures at LYNI	9
Table 9 LYKV approach operations	10
Table 10 Conventional approach procedures at LYKV	10
Table 11 LYBT approach operations.....	11
Table 12 Conventional approach procedures at LYBT	11
Table 13 LYVR approach operations	12
Table 14 Conventional approach procedures at LYVR.....	12
Table 15 LYUZ approach operations.....	13
Table 16 Conventional approach procedures at LYUZ.....	13
Table 17 LYBE TMA operations.....	14
Table 18 Conventional and PBN TMA procedures at LYBE	14
Table 19 LYNI TMA operations	15
Table 20 Conventional and PBN TMA procedures at LYNI	15
Table 21 LYKV TMA operations.....	16
Table 22 Conventional and PBN TMA procedures at LYKV	16
Table 23 LYBT TMA operations	17
Table 24 Conventional and PBN TMA procedures at LYBT	17
Table 25 LYVR TMA operations.....	18
Table 26 Conventional and PBN TMA procedures at LYVR.....	18
Table 27 LYUZ TMA operations.....	19
Table 28 Conventional and PBN TMA procedures at LYUZ	19
Table 29 Overview of current en-route operations.....	20
Table 30 Overview of surveillance and communication services	20
Table 31 PBN fleet capability at LYBE and LYNI for 2019.....	22
Table 32 Current level of compliance with IAPs requirements.....	24
Table 33 Current level of compliance with SIDs/STARs requirements	27
Table 34 Current level of compliance with ATS routes requirements.....	29
Table 35 Current level of compliance with rotorcraft operations requirements.....	29
Table 36 Overview of transitional measures.....	32

Table 37 Future approach operations	36
Table 38 Future TMA operations.....	38
Table 39 Future en-route operations	39
Table 40 Future NAVAIDs minimum operational network.....	40
Table 41 Overview of surveillance and communication services	42
Table 42 PBN Checklist of implementation	45

FOREWORD

Bearing in mind that SMATSA Ilc is responsible for providing air navigation services in two countries - the Republic of Serbia and the state of Montenegro, two distinct but interrelated PBN transition plans were developed regarding each country in particular.

Republic of Serbia, to which this document refers to, although not yet a fully member of the EU, is a signatory of ECAA agreement meaning that EC Regulations shall be made part of its internal legal order, and PBN IR is transposed into national legislation

This is done in order to support harmonised approach on a European level, as the only recognised way to cope with the expected continuation of traffic and increasing demands on the use of available airspace.

In the creation of this document relevant NETOPS meeting working papers were concerned and used adjusted according to the specific needs and current level of SMATSA Ilc compliance with requirements stipulated in the PBN IR.

This document is intended to be a living document. New editions will be published on the basis of experience gained and of comments and suggestions received from the relevant stakeholders.

EXECUTIVE SUMMARY

SMATSA Ilc has developed a PBN Transition Plan in order to ensure compliance with the PBN IR¹ enabling smooth and safe transition to the provision of services using PBN in a timely and effective manner in its AoR.

Results of conducted comparative analysis of the current operations level against published requirements, for the subject aerodromes identified in the first phase of the transition plan development, showed that in terms of en-route, TMA and approach operations SMATSA Ilc was in line with all objectives defined for 2020 and beyond.

After clarifications on the applicability of the PBN IR, given at EASA ATM/ANS TeB meeting held on 7th Dec 2020, four more aerodromes have been added to the list of eligible aerodromes.

Implementation of additional PBN procedures and establishment of contingency measures with transition to the minimum operation network of conventional NAVAIDs are set as primary objectives in the following period.

In that process, development of a convenient strategy for gradually moving towards the PBN only operational environment and reducing the network of conventional infrastructure to the extent appropriate for all stakeholders will be in the main focus.

Furthermore, SMATSA Ilc will undertake appropriate stakeholder consultation which will enable implementation of identified and confirmed transitional measures in accordance with agreed timelines. In that way airspace users will be informed about the planned changes in a timely manner and will be able to adequately equip/retrofit airborne equipment if required. In order to support that process a detailed strategic roadmap for PBN implementation is also provided within this document.

The final document, when fully completed, will describe the agreed changes to meet regulatory requirements as defined in future operational environment.

¹Please see item 1.1.1

1 INTRODUCTION

1.1 Presentation of the document

1.1.1 About the document

This document is developed by the Serbia and Montenegro Air Traffic Services SMATSA llc (hereinafter: SMATSA llc) in compliance with:

- Commission Implementing Regulation (EU) 2018/1048 of 18 July 2018 laying down airspace usage requirements and operating procedures concerning performance-based navigation (OJ L 189, 26.7.2018, p. 3–8), including national transposition – “Pravilnik o utvrđivanju zahteva za korišćenje vazdušnog prostora i operativnim procedurama u vezi sa navigacijom zasnovanom na mogućnostima vazduhoplova („Službeni glasnik RS”, broj 68/21)” (hereinafter: PBN IR) and
- Executive Director Decision 2018/013/R of 21 November 2018 issuing Acceptable Means of Compliance and Guidance Material to Commission Regulation (EU) No 1332/2011 and Commission Implementing Regulation (EU) 2018/1048 and repealing Decision 2012/002/R of the Executive Director of the Agency of 8 March 2012 and
- Annexes I and II to ED Decision 2018/013/R - Acceptable Means of Compliance and Guidance Material to Commission Regulation (EU) No 1332/2011 and Commission Implementing Regulation (EU) 2018/1048 on common airspace usage requirements and operating procedures ‘AMC & GM to AUR’ (Issue 2, 21 November 2018)

1.1.2 Structure of the document

This document contains following sections:

- Section 1: Introduction - provides the structure, purpose and scope of the document and the list of all requirements arising from the PBN IR;
- Section 2: Evaluation of the operational environment - presents description of the current operational environment subject to a change according to the PBN IR requirements;
- Section 3: Compliance with the requirements - provides an analysis regarding current fulfilment of the PBN IR requirements;
- Section 4: Implementation objectives - identifies the main objectives that need to be done in future period in accordance with the PBN IR requirements;
- Section 5: Transition plan - provides a detailed plan for the fulfilment of objectives identified in the previous Section;
- Section 6: Future operational environment - provides an overview of the future state of the operational environment when all of the specified goals are met;
- Section 7: Definitions - gives a reference to definitions;
- Section 8: Acronyms and abbreviations - gives a list of all acronyms and abbreviations used in the document;
- Section 9: Appendices - gives a list of all appendices in the document;
- Appendix 1 - PBN Checklist of Implementation - presents a general compliance table in regard of the PBN IR.
- Appendix 2 - Detailed PBN implementation roadmap - gives a general overview and timeline regarding implementation of defined transitional measures.

1.2 Purpose

The primary purpose of the document is to ensure fulfilment of the requirements stated in Article 4 of the PBN IR regarding necessary measures to ensure a smooth and safe transition to the provision of the services using PBN in a timely and effective manner.

This document is consistent with the European ATM Master Plan and the common projects referred to in Article 15a of Regulation (EC) No 550/2004 of the European Parliament and of the Council².

1.3 Scope

SMATSA Ilc is a provider of air traffic management/air navigation services (ATM/ANS) responsible for development, implementation and maintenance of:

- Instrument approach procedures;
- STARs and SIDs; and
- ATS routes;

within BEOGRAD ATCC Area of Responsibility, in the airspace of the Republic of Serbia (part of BEOGRAD FIR/UIR³).

Aerodromes that are subject to the PBN IR are those with one or more IRE, including circling/indirect approaches (as shown in the table below).

Table 1 Aerodromes falling into the scope of the PBN IR

Name	Location	ICAO Code	TMA
Nikola Tesla	Beograd	LYBE	TMA Beograd
Konstantin Veliki	Niš	LYNI	TMA Niš
Morava	Kraljevo	LYKV	TMA Kraljevo
Batajnica - Pukovnik-pilot Milenko Pavlović	Beograd	LYBT	TMA Batajnica
Vršac	Vršac	LYVR	TMA Vršac
Ponikve*	Užice	LYUZ	TMA Užice

*Aerodrome modernisation project is currently being developed, including new RWY dimensions and operational concept. PBN implementation/transition plan will be defined after aerodrome new operational environment is established (please see item 2.1.6).

In the event of the appearance of new eligible aerodromes, this document will be updated accordingly.

² Regulation (EC) No 550/2004 of the European Parliament and of the Council of 10 March 2004 on the provision of air navigation services in the single European sky (the service provision Regulation) (OJ L 96, 31.3.2004, p. 10-19) transposed into national legislative of the Republic of Serbia within Pravilnik o uslovima koje moraju da ispunjavaju pružaoci usluga u vazdušnoj plovitbi („Službeni glasnik RS”, broj 26/20, 154/20 i 24/11)

³ As stated in the latest version of the [AIP Serbia/Montenegro](#)

1.4 Entry into force and application

The following tables provide a summary of the PBN IR requirements.

Table 2 originates from Annexes I and II to ED Decision 2018/013/R and gives a list of requirements by implementation timing and Table 3⁴ represents requirements in a more transparent way.

CP 1 IR⁵ requirements (AF#1 and AF#3) which supersedes the PCP IR⁶ are not considered within this document.

General PBN requirement stated in Article 3 of the PBN IR is considered fulfilled when all other requirements are met.

Table 2 Summary of the PBN IR requirements by implementation timing

Implementation by 3 December 2020	AUR.PBN.2005 points
RNP APCH or RNP AR to all IREs without PA, and, where required, RF legs	(1) + (2) + (3)
RNAV 5 for all ATS routes at or above FL150	(6)
Implementation by 25 January 2024	
RNP APCH or RNP AR to all IREs, and, where required, RF legs	(1) + (2) + (3)
For all IREs, RNAV 1 or RNP 1(+) for at least one established SID/STAR	(4) + (5)
For all IREs, RNP 0.3 or RNP 1 or RNAV 1 for at least one established SID/STAR for rotorcraft operations	(7)
RNAV 5 for ATS routes established below FL150	(6)
RNP 0.3 or RNP 1 or RNAV 1 for ATS routes established below FL150 for rotorcraft operations	(7)
Implementation by 6 June 2030	
RNAV 1 or RNP 1(+) applicable to all SIDs/STARs when established	(4) + (5)
RNP 0.3 or RNP 1 or RNAV 1 applicable to all SIDs/STARs for rotorcraft operations when established	(7)
RNP 1(+): RNP 1 specification including RF and/or vertical paths defined by constraints	

⁴ Table is adopted from document - NETOPS23_Item_8_4_WP_13_Sample_PBN_Impl_Plan_Annex_final

⁵ Commission Implementing Regulation (EU) 2021/116 of 1 February 2021 on the establishment of the Common Project One supporting the implementation of the European Air Traffic Management Master Plan provided for in Regulation (EC) No 550/2004 of the European Parliament and of the Council, amending Commission Implementing Regulation (EU) No 409/2013 and repealing Commission Implementing Regulation (EU) No 716/2014

⁶ Commission Implementing Regulation (EU) No 716/2014 of 27 June 2014 on the establishment of the Pilot Common Project supporting the implementation of the European Air Traffic Management Master Plan (OJ L 190, 28.6.2014, p. 19-44)

Table 3 Summary of the PBN IR requirements by article

REQUIREMENTS		03 DEC 2020	25 JAN 2024	06 JUN 2030
Article 4 and Article 7 Applicability of AUR.PBN.2005				
Article 4	Transition Plan (<i>or significant updates</i>) approved (<i>living document</i>) [*]	x [*]	x [*]	x [*]
AUR.PBN.2005 (1) or (2) or (3)	RNP APCH at IREs without Precision Approach (PA)	x		
	RNP APCH at all IREs (with PA)		x	
AUR.PBN.2005 (4) or (5)	RNAV 1 or RNP 1(+) SID and STAR - one per IRE		x	
	RNAV 1 or RNP 1(+) for all SID and STARs			x
AUR.PBN.2005 (6)	RNAV 5 ATS routes at and above FL150	x		
	RNAV 5 ATS routes below FL150		x	
AUR.PBN.2005 (7)	Helicopter RNP 0.3/RNAV 1/RNP 1 SID/STAR - one per IRE		x	
	Helicopter RNP 0.3/RNAV 1/RNP 1 for all SID/STAR			x
	Helicopter RNP 0.3/RNAV 1/RNP 1 ATS routes below FL150		x	
Article 5 and Article 6				
Article 5	Exclusive use of PBN			x
Article 6	Contingency measures	x	x	x

^{*}The transition plan will have several iterations; Article 4 requires that the draft/significant updates to the plan must be approved by the competent authority prior to being implemented. The obligations in the transition plans would need to be commensurate with the target date obligations.

2 EVALUATION OF THE OPERATIONAL ENVIRONMENT

2.1 Instrument approach procedures

Status of the current approach operations is presented in the table below.

Table 4 Overview of the current approach operations

ICAO Code	RWY	IAPs						
		Conventional				PBN - RNP APCH		
		PA	NPA		Circling	PA	APV	NPA
LYBE	12	ILS Cat IIIB (LOC)	VOR (DME)	NDB (DME)	/	LPV Cat I	LNAV/VNAV	LNAV
	30	ILS Cat I (LOC)	VOR (DME)	NDB (DME)	/	LPV Cat I	LNAV/VNAV	LNAV
LYNI	11	/	VOR (DME)		/	/	LNAV/VNAV	LNAV
	29	ILS Cat I (LOC)	VOR (DME)		/	LPV Cat I	LNAV/VNAV	LNAV
LYKV	13	/	VOR (DME)		/	/	LNAV/VNAV	LNAV
	31	/	VOR (DME)		/	/	LNAV/VNAV	LNAV
LYBT	12L	ILS Cat I (LOC)	NDB (DME)		/	/	/	/
	30R	/	NDB (DME)		/	/	/	/
	12R	/	/		/	/	/	/
	30L	/	/		/	/	/	/
LYVR	01R	/	VOR (DME)	NDB (DME)	Circling with prescribed tracks	/	/	/
	19L	/	NDB (DME)		Circling with prescribed tracks	/	/	/
LYUZ	10	/	/		/	/	/	/
	28	/	NDB		/	/	/	/

NOTE 1: As a non-EU country SMATSA llc signed EWA (with ESSP) about the use of EGNOS Service in December 2018 which in some cases caused the late implementation of LPV minima in regards to the other RNP APCH procedures.

NOTE 2: LYBT RWY 12R / 30L has only been in use since 10 SEP 20 and currently there are no procedures published for civil use.

2.1.1 Aerodrome Beograd – LYBE

General information about approach operations at LYBE is given in Table 5 and detailed description of conventional approach procedures is presented in Table 6.

Table 5 LYBE approach operations

AD	Civil	
RWY	12	30
NAV provided	PBN and Conventional	PBN and Conventional
IAPs provided	PA, APV and NPA	PA, APV and NPA
Primary IAP	ILS Cat IIIB	ILS Cat I
Redundancy (fallback /backup /contingency)	Multiple redundancy is provided by means of RNP APCH procedures down to all three minima lines and additional VOR and NDB approaches which may be used on request; radar vectoring to IF	Multiple redundancy is provided by means of RNP APCH procedures down to all three minima lines and additional VOR and NDB approaches which may be used on request; radar vectoring to IF

Table 6 Conventional approach procedures at LYBE

ICAO Code	RWY	Approach Phase		NAVAIDs	
				Primary	Support/Backup
LYBE	12	Initial / Intermediate approach	ILS (LOC)	VOR/DME: VAL, BGD NDB: IA (Radar vectoring)	NDB: KN
			VOR	VOR/DME: VAL, BGD NDB: IA	/
			NDB	VOR/DME: VAL NDB: IA, KN	VOR/DME: BGD NDB: PA
		Final approach	ILS (LOC)	GP/LOC: YUB DME: YUB*	DME: BGD NDB: KN Markers (OM, MM)
			VOR	VOR/DME: BGD	/
			NDB	NDB: KN	DME: BGD
		Missed approach	ILS (LOC)	DME: BGD NDB: OBR	VOR: BGD
			VOR	DME: BGD NDB: OBR	VOR: BGD
			NDB	NDB: OBR	VOR/DME: BGD
	30	Initial / Intermediate approach	ILS (LOC)	VOR/DME: VAL, BGD NDB: PA (Radar vectoring)	NDB: JA
			VOR	VOR/DME: VAL, BGD NDB: PA	/
			NDB	VOR/DME: VAL NDB: PA, JA	VOR/DME: BGD
		Final approach	ILS (LOC)	GP/LOC: YBE DME: BGD	NDB: JA Markers (OM, MM)
			VOR	VOR/DME: BGD	/
			NDB	NDB: JA	DME: BGD
		Missed approach	ILS (LOC)	DME: BGD NDB: OBR	VOR: BGD
			VOR	DME: BGD NDB: OBR	VOR: BGD
			NDB	NDB: OBR	VOR/DME: BGD
Total nb. of NAVAIDs		ILSs: 2 VOR/DMEs: 2 *(ILS)/DME: 1 NDBs: 5 Markers: 4			

2.1.2 Aerodrome Niš – LYNI

General information about approach operations at LYNI is given in Table 7 and detailed description of conventional approach procedures is presented in Table 8.

Table 7 LYNI approach operations

AD	Civil / Military	
RWY	11	29
NAV provided	PBN and Conventional	PBN and Conventional
IAPs provided	APV and NPA (PA not provided due to terrain configuration)	PA, APV and NPA
Primary IAP	Use on request	ILS Cat I
Redundancy (fallback /backup /contingency)	Multiple redundancy is provided by means of RNP APCH procedures down to LNAV/VNAV and LNAV minima and VOR approach which may be used on request	Multiple redundancy is provided by means of RNP APCH procedures down to all three minima lines and additional VOR approach which may be used on request

Table 8 Conventional approach procedures at LYNI

ICAO Code	RWY	Approach Phase		NAVAIDs	
				Primary	Support/Backup
LYNI	11	Initial / Intermediate approach	VOR	VOR/DME: NII	/
		Final approach	VOR	VOR/DME: NII	/
		Missed approach	VOR	DME: NII NDB: ZO	/
	29	Initial / Intermediate approach	ILS (LOC) Z	VOR/DME: NII	DME: YNI*
			ILS (LOC) Y	RNP 1 (final approach transition)	/
			VOR	VOR/DME: NII	/
		Final approach	ILS (LOC) Z	GP/LOC: YNI DME: YNI*	DME: NII
			ILS (LOC) Y	GP/LOC: YNI DME: YNI*	DME: NII
			VOR	VOR/DME: NII	/
		Missed approach	ILS (LOC) Z	DME: NII NDB: ZO	DME: YNI*
			ILS (LOC) Y	DME: NII NDB: ZO	DME: YNI*
			VOR	DME: NII NDB: ZO	/
Total nb. of NAVAIDs		ILS: 1 VOR/DME: 1 *(ILS/)DME: 1 NDB: 1			

2.1.3 Aerodrome Kraljevo – LYKV

General information about approach operations at LYKV is given in Table 9 and detailed description of conventional approach procedures is presented in Table 10.

Table 9 LYKV approach operations

AD	Civil / Military	
RWY	13	31
NAV provided	PBN and Conventional	PBN and Conventional
IAPs provided	APV and NPA	APV and NPA
Primary IAP	Use on request	Use on request
Redundancy (fallback /backup /contingency)	Multiple redundancy is provided by means of RNP APCH procedures down to LNAV/VNAV and LNAV minima and VOR approach which may be used on request	Multiple redundancy is provided by means of RNP APCH procedures down to LNAV/VNAV and LNAV minima and VOR approach which may be used on request

Table 10 Conventional approach procedures at LYKV

ICAO Code	RWY	Approach Phase		NAVAIDs	
				Primary	Support/Backup
LYKV	13	Initial / Intermediate approach	VOR	VOR/DME: KRV	NDB: BR
		Final approach		VOR/DME: KRV	NDB: BR
		Missed approach		NDB: AD, VTN	
	31	Initial / Intermediate approach	VOR	VOR/DME: KRV	
		Final approach		VOR/DME: KRV	
		Missed approach		NDB: BR	
Total nb. of NAVAIDs		VOR/DME: 1 NDBs: 3			

2.1.4 Aerodrome Beograd – LYBT

General information about approach operations at LYBT is given in Table 11 and detailed description of conventional approach procedures is presented in Table 12.

Table 11 LYBT approach operations

AD	Military	
RWYs	12L	30R
NAV provided	Conventional	Conventional
IAPs provided	PA and NPA	NPA
Primary IAP	ILS Cat I	NDB (only)
Redundancy (fallback /backup /contingency)	Redundancy is provided by means of ILS Cat I procedures and NDB approach which may be used on request	There is no redundancy provided for NDB approach

Table 12 Conventional approach procedures at LYBT

ICAO Code	RWY	Approach Phase		NAVAIDs	
				Primary	Support/Backup
LYBT	12L	Initial / Intermediate approach	ILS Cat I	GP/LOC: BTJ DME: BTJ* NDB: IA	DME: BGD
			NDB	NDB: IA DME: BGD	
		Final approach	ILS Cat I	GP/LOC: BTJ DME: BTJ*	DME: BGD Markers (OM, MM)
			NDB	NDB: BT	Marker (OM)
		Missed approach	ILS Cat I	NDB: PA	DME: BGD
			NDB	NDB: PA	DME: BGD
	30R	Initial / Intermediate approach	NDB	NDB: PA	DME: BGD
		Final approach	NDB	NDB: PA, JA, EK	
		Missed approach	NDB	NDB: EK, IA	DME: BGD
	12R	Initial / Intermediate approach	/	/	/
		Final approach			
		Missed approach			
	30L	Initial / Intermediate approach	/	/	/
		Final approach			
		Missed approach			
Total nb. of NAVAIDs		ILS: 1 DME: 1 *(ILS)/DME: 1 NDBs: 5 Markers: 2			

2.1.5 Aerodrome Vršac – LYVR

General information about approach operations at LYVR is given in Table 13 and detailed description of conventional approach procedures is presented in Table 14.

Table 13 LYVR approach operations

AD	Civil (for own purposes)	
RWY	01R	19L
NAV provided	Conventional	Conventional
IAPs provided	NPA	NPA
Primary IAP	VOR	NDB approach followed by Circling
Redundancy (fallback /backup /contingency)	Redundancy is provided by means of VOR approach and NDB approach which may be used on request	There is no redundancy provided for NDB approach

Table 14 Conventional approach procedures at LYVR

ICAO Code	RWY	Approach Phase		NAVAIDs	
				Primary	Support/Backup
LYVR	01R	Initial / Intermediate approach	VOR	VOR/DME: VAC	
			NDB	NDB: VRA	DME: VAC
		Final approach	VOR	VOR/DME: VAC	
			NDB	NDB: VRA	DME: VAC
		Missed approach	VOR	VOR/DME: VAC	
			NDB	NDB: VRA	DME: VAC
	19L	Initial / Intermediate approach	NDB	NDB: VRA	DME: VAC
		Final approach		NDB: VRA	DME: VAC
		Missed approach		NDB: VRA	DME: VAC
Total nb. of NAVAIDs		VOR/DME: 1NDB: 1			

2.1.6 Aerodrome Užice – LYUZ

Note: In accordance with European Route Network Improvement Plan – Part 2 - ARN Version 2021 – 2030, Proposal ID 101.035 (Project Name: Lower airspace re-organisation Beograd FIR - Step 5) existing Užice TMA and Kraljevo TMA are going to be merged in a single Kraljevo TMA on 04 NOV 21.

This change will also include withdrawal of ATC service and CTR and all instrument flight procedures for the aerodrome. Aerodrome modernisation project is underway, and when infrastructure works, which include changes to AD manoeuvring areas, are finished, new set of instrument flight procedures are going to be designed and implemented in accordance with PBN IR.

General information about approach operations at LYUZ is given in Table 15 and detailed description of conventional approach procedures is presented in Table 16.

Table 15 LYUZ approach operations

AD	Civil (for own purposes)	
RWY	10	28
NAV provided	/	Conventional
IAPs provided	/	NPA
Primary IAP	/	NDB (only)
Redundancy (fallback /backup /contingency)	/	There is no redundancy provided for NDB approach

Table 16 Conventional approach procedures at LYUZ

ICAO Code	RWY	Approach Phase		NAVAIDs	
				Primary	Support/Backup
LYUZ	10	Initial / Intermediate approach	/	/	/
		Final approach			
		Missed approach			
	28	Initial / Intermediate approach	NDB	NDB: UZ	Marker
		Final approach		NDB: SR	Marker
		Missed approach		NDB: UZ	
Total nb. of NAVAIDs		NDBs: 2 Markers: 2			

2.2 SID and STAR routes

2.2.1 TMA Beograd (LYBE)

General information about TMA operations is given in Table 17 and detailed description of arrival and departure procedures is presented in Table 18.

Table 17 LYBE TMA operations

RWY	12 / 30
Radar service provided	Yes
NAV provided	PBN and Conventional
NAV specification	RNAV 1
PBN NAV infrastructure	GNSS only (DME/DME planned)
Conventional NAV infrastructure	Based on several VOR/DME and NDB aids (only as fallback /backup /contingency)
Concept of operations	Primary procedures in use are those based on RNAV 1 specification; aircraft not equipped or not able to follow RNAV 1 routes will be subject to radar vectoring or instructed to use conventional routes

Table 18 Conventional and PBN TMA procedures at LYBE

ICAO Code	RWY	SIDs	STARs
LYBE	12	RNAV 1 / based on GNSS only	RNAV 1 / based on GNSS only
		Conventional / based on: VOR/DME: BGD, VAC, VAL, TPL, SMI NDB: PA (+TPL/VAL as backup only)	Conventional / based on: VOR/DME: BGD, VAL, TPL, SMI NDB: IA, PA, OBR, KN (+VAL/TPL backup only)
	30	RNAV 1 / based on GNSS only	RNAV 1 / based on GNSS only
		Conventional / based on: VOR/DME: BGD, VAC, VAL, TPL, SMI NDB: IA, PA, OBR (+TPL/VAL as backup only)	Conventional / based on: VOR/DME: BGD, VAL, TPL, SMI NDB: PA, OBR (+VAL/TPL as backup only)
Total nb. of NAVAIDs		VOR/DMEs: 5	NDBs: 6

2.2.2 TMA Niš (LYNI)

General information about TMA operations is given in Table 19 and detailed description of arrival and departure procedures is presented in Table 20.

Table 19 LYNI TMA operations

RWY	11 / 29
Radar service provided	No (procedural ATC only)
NAV provided	PBN and Conventional
NAV specification	RNP 1
PBN NAV infrastructure	GNSS
Conventional NAV infrastructure	Based on one VOR/DME and two NDB aids
Concept of operations	RNP 1 and conventional routes may be used on request on an equivalent base

Table 20 Conventional and PBN TMA procedures at LYNI

ICAO Code	RWY	SIDs	STARs
LYNI	11	RNP 1 / based on GNSS	RNP 1 / based on GNSS
		Conventional / based on: VOR/DME: NII NDB: JST, ZO	Conventional / based on: VOR/DME: NII
	29	RNP 1 / based on GNSS	RNP 1 / based on GNSS
		Conventional / based on: VOR/DME: NII NDB: ZO	Conventional / based on: VOR/DME: NII
Total nb. of NAVAIDs		VOR/DMEs: 1 NDBs: 2	

2.2.3 TMA Kraljevo (LYKV)

General information about TMA operations is given in Table 21 and detailed description of arrival and departure procedures is presented in Table 22.

Table 21 LYKV TMA operations

RWY	13 / 31
Radar service provided	No (procedural ATC only)
NAV provided	PBN and Conventional
NAV specification	RNP 1
PBN NAV infrastructure	GNSS
Conventional NAV infrastructure	Based on several VOR/DME and NDB aids
Concept of operations	RNP 1 and conventional routes may be used on request on an equivalent base

Table 22 Conventional and PBN TMA procedures at LYKV

ICAO Code	RWY	SIDs	STARs
LYKV	13	RNP 1 / based on GNSS	RNP 1 / based on GNSS
		Conventional / based on: VOR/DME: KRV, VAL NDB: AD, BR, VTN (+VAL as backup only)	Conventional / based on: VOR/DME: KRV, VAL, TPL (+BLC as backup only) NDB: BR, VTN (+VAL/TPL/BLC as backup only)
	31	RNP 1 / based on GNSS	RNP 1 / based on GNSS
		Conventional / based on: VOR/DME: KRV, VAL NDB: AD, BR, LA, VTN (+VAL as backup only)	Conventional / based on: VOR/DME: KRV, VAL, TPL (VOR only) (+BLC as backup only) NDB: VTN (+VAL/BLC as backup only)
Total nb. of NAVAIDs		VOR/DMEs: 4	NDBs: 7

2.2.4 TMA Batajnica (LYBT)

General information about TMA operations is given in Table 23 and detailed description of arrival and departure procedures is presented in Table 24.

Table 23 LYBT TMA operations

RWY	12L / 30R
Radar service provided	No (procedural ATC only)
NAV provided	Conventional only
NAV specification	/
PBN NAV infrastructure	/
Conventional NAV infrastructure	Based on several VOR/DME and NDB aids
Concept of operations	Use of AD only with permission issued by Ministry of Defence of the Republic of Serbia

Table 24 Conventional and PBN TMA procedures at LYBT

ICAO Code	RWY	SIDs	STARs
LYBT	12L	Conventional / based on: VOR/DME: SMI, VAL, TPL, BGD (DME only) NDB: IA, PA, PV (+VAL/TPL as backup only)	Conventional / based on: VOR/DME: BGD, SMI, VAL NDB: IA, PA, PV, POZ (+VAL as backup only)
	30R	Conventional / based on: VOR/DME: SMI, VAL, TPL, BGD (DME only) NDB: IA, PA, PV (+VAL/TPL as backup only)	Conventional / based on: VOR/DME: VAL, BGD (DME only) NDB: PA, IA, POZ (+VAL as backup only)
LYBT	12R	/	/
	30L	/	/
Total nb. of NAVAIDs		VOR/DMEs: 4	NDBs: 6

2.2.5 TMA Vršac (LYVR)

General information about TMA operations is given in Table 25 and detailed description of arrival and departure procedures is presented in Table 26.

Table 25 LYVR TMA operations

RWY	01R / 19L
Radar service provided	No (procedural ATC only)
NAV provided	Conventional only
NAV specification	/
PBN NAV infrastructure	/
Conventional NAV infrastructure	Based on one VOR/DME and one NDB aid
Concept of operations	Purpose of AD: - for flying an aircraft up to 5700 KG MTOM, for own purposes; - air sport activities; and - basic pilot training and training for other pilot licences

Table 26 Conventional and PBN TMA procedures at LYVR

ICAO Code	RWY	SIDs	STARs
LYVR	01R	Conventional / based on: VOR/DME: VAC (NDB: VRA as backup only)	Conventional / based on: VOR/DME: VAC NDB: VRA
	19L	Conventional / based on: VOR/DME: VAC (NDB: VRA as backup only)	
Total nb. of NAVAIDs		VOR/DME: 1	NDB: 1

2.2.6 TMA Užice (LYUZ)

Note: SID and STAR routes will be withdrawn on 04 NOV 21 (please see item 2.1.6).

General information about TMA operations is given in Table 27 and detailed description of arrival and departure procedures is presented in Table 28.

Table 27 LYUZ TMA operations

RWY	10 / 28
Radar service provided	No (procedural ATC only)
NAV provided	Conventional only
NAV specification	/
PBN NAV infrastructure	/
Conventional NAV infrastructure	Based on two NDB aids
Concept of operations	Purpose of AD: - own purposes, sport and leisure flying

Table 28 Conventional and PBN TMA procedures at LYUZ

ICAO Code	RWY	SIDs	STARs
LYUZ	10	Conventional / based on: NDB: UZ, SR	/
	28	Conventional / based on: NDB: UZ, SR	Conventional / based on: NDB: UZ
Total nb. of NAVAIDs	NDBs: 2		

2.3 En-route

Aircraft, other than State aircraft, operating under instrument flight rules within BEOGRAD FIR/UIR above 9500 FT ALT, shall be equipped, as a minimum, with RNAV equipment meeting RNAV 5 (B-RNAV) specification as set out in ICAO Doc 7030 – Regional Supplementary Procedures.

NOTE: RNAV 5, defined in ICAO Doc 9613 – Performance-based Navigation Manual, is equivalent to B-RNAV with regard to the navigational equipment and certification requirements. Those two terms (RNAV 5 and B-RNAV) in AIP Serbia/Montenegro are treated as equal.

SMATSA Ilc has implemented crossborder FRA on 24/7 basis (SECSI FRA).

Status of current en-route operations is presented in the table below.

Table 29 Overview of current en-route operations

NAV application	Limits	NAV specification	NAV infrastructure	NAV back-up infrastructure
FRA*	FL660 FL205	/	GNSS	VOR/DME & NDB + Radar as required
ATS routes	FL205 MNM ALT	RNAV 5		

* Out of the PBN IR scope.

2.4 Surveillance and communication services

Surveillance and communication services are currently provided in accordance with the following table:

Table 30 Overview of surveillance and communication services

Airspace	SUR	COM
ACC Beograd	Fully provided (minimum horizontal radar separation is 5 NM)	Fully provided
TMA Beograd		
TMA Niš	Not provided (non-radar environment – procedural ATC services provided)	
TMA Kraljevo		
TMA Batajnica		
TMA Vršac		
TMA Užice		

TMA Užice will be merged with TMA Kraljevo on 04 NOV 21 (please see item 2.1.6).

2.5 Airborne equipment and capabilities

PBN fleet capability for 2019 flights at LYBE and LYNI is given in the table below. Statistics are prepared through Eurocontrol's CNS Dashboard under the following conditions:

- Period: JAN – DEC 2019;
- Traffic: Arrivals only;
- Flight type: Scheduled.

Main conclusions are:

- Almost all flights are PBN approved (99% LYBE, 100% LYNI) and GNSS capable (~92% LYBE, ~100% LYNI);
- Almost all flights are RNAV 1 capable (~95% LYBE, ~98% LYNI):
 - LYBE: around 70% of flight are RNAV 1 capable with all permitted sensors and around 5% of flights are non GNSS so DME/DME backup infrastructure could help in case of a reversion from GNSS;
 - LYBE: approximately 20% of flights are GNSS only capable meaning that in current scenario they should be radar vectored or instructed to use conventional routes;
- RNP 1 capabilities are not so strong (~35% LYBE, ~55% LYNI):
 - LYNI: this means that almost 50% of flights currently is not capable to use published RNP 1 SID and STAR routes and that they still need routes based on conventional NAVAIDs because radar vectoring is not provided;
- Great level of RNP APCH capabilities is noted (~83 LYBE, ~98% LYNI):
 - LYBE: lower level probably due to ILS Cat IIIB availability;
- LPV capabilities are still at very low level for both aerodromes (<2% LYBE, <5% LYNI) – change should be expected in 2020 because RNP APCH to LPV minima are operationally available since the end of March;
- Capabilities regarding RNP AR APCH (~5% LYBE, <2% LYNI) and GBAS (<4% LYBE, 0% LYNI) are also at very low level at the moment, especially at LYNI.

Data for LYKV, LYBT, LYVR and LYUZ are not presented due to following reasons:

- LYKV – aerodrome became operational during the 2019 summer season and PBN procedures implemented on 20 JUN 19, very low level of civil traffic during the year;
- LYBT – military aerodrome with no PBN procedures implemented, very low level of civil traffic during the year (no scheduled flights);
- LYVR – aerodrome for own purposes (pilot training) with no PBN procedures implemented, very low level of other traffic during the year (no scheduled flights);
- LYUZ – aerodrome for own purposes with no PBN procedures implemented, very low level of other traffic during the year (no scheduled flights).

Table 31 PBN fleet capability at LYBE and LYNI for 2019

FLEET CAPABILITY	LYBE		LYNI	
	Flights	Percentage	Flights	Percentage
Total number of flights	29528		1611	
R - PBN approved	29232	99.00%	1611	100.00%
G - GNSS	27146	91.93%	1607	99.75%
RNAV 1 – Any means (any Dx)	27964	94.70%	1580	98.08%
RNAV 1 – GNSS only (D2 only)	5865	19.86%	3	0.19%
RNAV 1 – Non GNSS (D3 or D4 and not (D1 or D2))	1339	4.53%	4	0.25%
D1 - RNAV 1 all permitted sensors	20145	68.22%	1573	97.64%
D2 - RNAV 1 GNSS	6480	21.95%	3	0.19%
D3 - RNAV 1 DME/DME	791	2.68%	0	0.00%
D4 - RNAV 1 DME/DME/IRU	1341	4.54%	4	0.25%
RNP 1 (any Ox)	10132	34.31%	875	54.31%
O1 - Basic RNP 1 all permitted sensors	9403	31.84%	871	54.07%
O2 - Basic RNP 1 GNSS	1891	6.40%	330	20.48%
O3 - Basic RNP 1 DME/DME	412	1.40%	0	0.00%
O4 - Basic RNP 1 DME/DME/IRU	228	0.77%	4	0.25%
RNP APCH – Any means (S1 or S2 or B)	24550	83.14%	1578	97.95%
RNP APCH (S1 or S2)	24544	83.12%	1576	97.83%
RNP APCH – LNAV only (S1 and not S2 and not B)	6541	22.15%	3	0.19%
S1 - RNP APCH	9820	33.26%	103	6.39%
S2 - RNP APCH with BARO-VNAV	18002	60.97%	1573	97.64%
B - LPV (APV with SBAS)	383	1.30%	73	4.53%
RNP AR APCH (T1 or T2)	1490	5.05%	25	1.55%
T2 - RNP AR APCH without RF (special authorisation required)	186	0.63%	0	0.00%
T1 - RNP AR APCH with RF (special authorisation required)	1490	5.05%	25	1.55%
A - GBAS landing system	985	3.34%	0	0.00%

3 COMPLIANCE WITH THE REQUIREMENTS

PBN Checklist of implementation is provided within Appendix 1 of this document in order to verify compliance with the transition planning requirements.

3.1 Implementation of IAPs

3.1.1 Requirements

AUR.PBN.2005 (1) or (2) or (3):

- RNP APCH at IREs without Precision Approach (PA) by 03 DEC 2020;
- RNP APCH at all IREs (with PA) by 25 JAN 2024.

3.1.2 Fulfilment

The status of compliance with the requirements of the PBN IR is presented in Table 32.

3.1.2.1 LYBE

All requirements have been fulfilled in accordance with the PBN IR.

3.1.2.2 LYNI

All requirements may be considered as fulfilled in terms of the PBN IR.

Implementation of RNP APCH to LPV minimum at LYNI RWY 11 may be considered as fulfilled because implementation is characterized as excessively difficult due to terrain after preliminary IFP design was made.

Considering low volumes of traffic at LYNI implementation of 3D approach procedure in accordance with the requirements of the RNP authorisation required (RNP AR APCH) specification is not planned.

3.1.2.3 LYKV, LYBT and LYVR

LYKV, LYBT and LYVR become subject aerodromes in accordance with the clarifications on the applicability of the PBN regulation, given at EASA ATM/ANS TeB meeting, held on 7th Dec 2020.

For that reason implementation of all requested RNP APCH minima (where possible) is postponed to no later than 25 JAN 2024 (the second planning period).

Exact implementation date will be determined in the following period.

3.1.2.4 LYUZ

LYUZ become subject aerodrome in accordance with the clarifications on the applicability of the PBN regulation, given at EASA ATM/ANS TeB meeting, held on 7th Dec 2020.

The development of the aerodrome modernisation project is underway, which includes new dimensions of the RWY. The implementation plan will be defined when all the details of the project are known.

3.1.2.5 Additional notes

Implementation of radius to fix (RF) legs currently is not considered because it is not required due to traffic density or traffic complexity on any of the subject aerodromes.

Table 32 Current level of compliance with IAPs requirements

ICAO Code	RWY	RWY Type	RNP APCHs		
			3D approach		2D approach
			LPV	LNAV/VNAV	LNAV
LYBE	12	Instrument Precision Approach	Implemented on 26 MAR 2020 - in accordance with AUR.PBN.2005 (1)	Implemented on 08 NOV 2018 - in accordance with AUR.PBN.2005 (1)	Implemented on 30 APR 2015 - in accordance with AUR.PBN.2005 (1)
	30	Instrument Precision Approach	Implemented on 26 MAR 2020 - in accordance with AUR.PBN.2005 (1)	Implemented on 08 NOV 2018 - in accordance with AUR.PBN.2005 (1)	Implemented on 30 APR 2015 - in accordance with AUR.PBN.2005 (1)
LYNI	11	Instrument Non-Precision Approach	Not implemented - in accordance with AUR.PBN.2005 (2): implementation is excessively difficult due to terrain	Implemented on 11 OCT 2018 - in accordance with AUR.PBN.2005 (1)	Implemented on 17 SEP 2015 - in accordance with AUR.PBN.2005 (1)
	29	Instrument Precision Approach	Implemented on 26 MAR 2020 - in accordance with AUR.PBN.2005 (1)	Implemented on 11 OCT 2018 - in accordance with AUR.PBN.2005 (1)	Implemented on 11 OCT 2018 - in accordance with AUR.PBN.2005 (1)
LYKV	13	Non-Instrument Approach	Planned TBD - late in accordance with Article 7 2	Implemented on 20 JUN 2019 - in accordance with AUR.PBN.2005 (1)	Implemented on 20 JUN 2019 - in accordance with AUR.PBN.2005 (1)
	31	Non-Instrument Approach	Planned TBD - late in accordance with Article 7 2	Implemented on 20 JUN 2019 - in accordance with AUR.PBN.2005 (1)	Implemented on 20 JUN 2019 - in accordance with AUR.PBN.2005 (1)
LYBT	12L	Instrument Precision Approach	Planned TBD - in accordance with Article 7 2(b)	Planned TBD - in accordance with Article 7 2(b)	Planned TBD - in accordance with Article 7 2(b)
	30R	Instrument Non-Precision Approach	Planned TBD - late in accordance with Article 7 2	Planned TBD - late in accordance with Article 7 2	Planned TBD - late in accordance with Article 7 2

LYBT	12R	Instrument Non-Precision Approach	Planned TBD - late in accordance with Article 7 2	Planned TBD - late in accordance with Article 7 2	Planned TBD - late in accordance with Article 7 2
	30L	Instrument Non-Precision Approach	Not planned - in accordance with PANS-OPS*: implementation is impossible due to close vicinity of restricted area LY R8	Planned TBD - late in accordance with Article 7 2	Planned TBD - late in accordance with Article 7 2
LYVR	01R	Instrument Non-Precision Approach	Planned TBD - late in accordance with Article 7 2	Planned TBD - late in accordance with Article 7 2	Planned TBD - late in accordance with Article 7 2
	19L	Instrument Non-Precision Approach	Not planned - in accordance with PANS-OPS*: implementation is impossible due to close vicinity of the state border and terrain		
LYUZ	10	Non-Instrument Approach	TBD in line with the future operational environment		
	28	Instrument Non-Precision Approach			

*ICAO Doc 8168 Procedures for Air Navigation Services - Aircraft Operations (PANS-OPS), Volume II - Construction of Visual and Instrument Flight Procedures

3.2 Implementation of SIDs and STARs

3.2.1 Requirements

AUR.PBN.2005 (4) or (5):

- RNAV 1 or RNP 1(+) SID and STAR - one per IRE by 25 JAN 2024;
- RNAV 1 or RNP 1(+) for all SID and STARs by 06 JUN 2030.

3.2.2 Fulfilment

The status of compliance with the requirements of the PBN IR is presented in Table 33.

3.2.2.1 LYBE (TMA Beograd)

All requirements have been fulfilled in accordance with the PBN IR.

3.2.2.2 LYNI (TMA Niš)

All requirements have been fulfilled in accordance with the PBN IR.

In order to maintain air traffic safety in environment with high terrain and obstacle features and no radar service provision at LYNI (TMA Niš), SID and STAR routes with higher performance requirements than RNAV 1 navigation specification have been implemented - RNP 1 specification, including additional navigation functionalities regarding operations along a vertical path and between two fixes and with the use of:

- (1) An 'AT' altitude constraint; or
- (2) An 'AT OR ABOVE' altitude constraint; or
- (3) An 'AT OR BELOW' altitude constraint; or
- (4) A 'WINDOW' constraint.

3.2.2.3 LYKV (TMA Kraljevo), LYBT (TMA Batajnica), LYVR (TMA Vršac)

LYKV, LYBT and LYVR become subject aerodromes in accordance with the clarifications on the applicability of the PBN regulation, given at EASA ATM/ANS TeB meeting, held on 7th Dec 2020.

At LYKV all requirements have been fulfilled in accordance with the PBN IR.

At LYBT and LYVR implementation of requested SID and STAR routes (where necessary) is postponed to no later than 25 JAN 2024 (the second planning period). RNP 1 specification (including vertical constraints) is planned in order to maintain air traffic safety in environments with no radar service provision.

Exact implementation date will be determined in the following period.

3.2.2.4 LYUZ

See 3.1.2.4.

3.2.2.5 Additional notes

Implementation of RF legs currently is not considered on any of the subject aerodromes.

Table 33 Current level of compliance with SIDs/STARs requirements

ICAO Code	RWY	SIDs	STARs
		RNAV 1 or RNP 1	RNAV 1 or RNP 1
LYBE	12	<u>RNAV 1 to all SIDs</u> Implemented on 30 APR 2015 - in accordance with AUR.PBN.2005 (4)	<u>RNAV 1 to all STARs</u> Implemented on 30 APR 2015 - in accordance with AUR.PBN.2005 (4)
	30	<u>RNAV 1 to all SIDs</u> Implemented on 30 APR 2015 - in accordance with AUR.PBN.2005 (4)	<u>RNAV 1 to all STARs</u> Implemented on 30 APR 2015 - in accordance with AUR.PBN.2005 (4)
LYNI	11	<u>RNP 1 + vertical constraints to all SIDs</u> Implemented on 17 SEP 2015 - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with high terrain features	<u>RNP 1 + vertical constraints to all STARs</u> Implemented on 17 SEP 2015 - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with high terrain features
	29	<u>RNP 1 + vertical constraints to all SIDs</u> Implemented on 17 SEP 2015 - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with high terrain features	<u>RNP 1 + vertical constraints to all STARs</u> Implemented on 11 OCT 2018 - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with high terrain features
LYKV	13	<u>RNP 1 + vertical constraints to all SIDs</u> Implemented on 20 JUN 2019 - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with high terrain features	<u>RNP 1 + vertical constraints to all STARs</u> Implemented on 20 JUN 2019 - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with high terrain features
	31	<u>RNP 1 + vertical constraints to all SIDs</u> Implemented on 20 JUN 2019 - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with high terrain features	<u>RNP 1 + vertical constraints to all STARs</u> Implemented on 20 JUN 2019 - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with high terrain features
LYBT	12L	<u>RNP 1 + vertical constraints to all SIDs</u> Planned - TBD - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with no radar service provision	<u>RNP 1 + vertical constraints to all STARs</u> Planned - TBD - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with no radar service provision
	30R	<u>RNP 1 + vertical constraints to all SIDs</u> Planned - TBD - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with no radar service provision	<u>RNP 1 + vertical constraints to all STARs</u> Planned - TBD - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with no radar service provision

LYBT	12R	<u>RNP 1 + vertical constraints to all SIDs</u> Planned - TBD - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with no radar service provision	<u>RNP 1 + vertical constraints to all STARs</u> Planned - TBD - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with no radar service provision
	30L	<u>RNP 1 + vertical constraints to all SIDs</u> Planned - TBD - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with no radar service provision	<u>RNP 1 + vertical constraints to all STARs</u> Planned - TBD - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with no radar service provision
LYVR	01R	<u>RNP 1 + vertical constraints to all SIDs</u> Planned - TBD - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with no radar service provision	<u>RNP 1 + vertical constraints to all STARs</u> Planned - TBD - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with no radar service provision
	19L	<u>RNP 1 + vertical constraints to all SIDs</u> Planned - TBD - in accordance with AUR.PBN.2005 (5): higher performance are required in order to maintain air traffic safety in environments with no radar service provision	Not planned - in accordance with PANS-OPS: see Table 32 LYVR 19L
LYUZ	10	TBD in line with the future operational environment	
	28		

3.3 Implementation of ATS routes

3.3.1 Requirements

AUR.PBN.2005 (6):

- RNAV 5 ATS routes at and above FL150 by 03 DEC 2020;
- RNAV 5 ATS routes below FL150 by 25 JAN 2024.

3.3.2 Fulfilment

All requirements have been fulfilled in accordance with details presented in the table below.

Table 34 Current level of compliance with ATS routes requirements

Vertical limits	ATS routes
Above FL150	<u>RNAV 5 spec established from route MNM ALT to FL205 within BEOGRAD FIR/UIR</u> Implemented on 01 FEB 2018 in line with the SECSI FRA initiative
Below FL150	- in accordance with AUR.PBN.2005 (6)

3.4 Implementation of SID/STAR/ATS routes for rotorcraft operations

3.4.1 Requirements

AUR.PBN.2005 (7):

- Helicopter RNP 0.3/RNAV 1/RNP 1 SID/STAR - one per IRE by 25 JAN 2024;
- Helicopter RNP 0.3/RNAV 1/RNP 1 for all SID/STAR by 06 JUN 2030;
- Helicopter RNP 0.3/RNAV 1/RNP 1 ATS routes below FL150 by 25 JAN 2024.

3.4.2 Fulfilment

All requirements may be considered as fulfilled in terms of the PBN IR because routes and procedures for rotorcraft operations have not been established at the moment and currently there is no demand for their implementation (see the table below).

Table 35 Current level of compliance with rotorcraft operations requirements

NAV Specification	SID / STAR / ATS routes
RNP 0.3 or RNAV 1 or RNP 1	Not implemented - in accordance with AUR.PBN.2005 (7): SID / STAR or ATS routes for rotorcraft operations have not been established yet

3.5 Exclusive use of PBN and establishment of contingency measures

3.5.1 Requirements

Article 5 and Article 6:

- Exclusive use of PBN by 06 JUN 2030;
- Contingency measures for each phase of Transition Plan.

3.5.2 Fulfilment

Fulfilment of Article 5 and 6 requirements is planned in accordance with the Section 5 - Transition plan. Up to that moment contingency measures are ensured through the means of procedures/routes multiple redundancy supporting all phases of operations as stated within Section 2.

4 IMPLEMENTATION OBJECTIVES

4.1 Achieved level of compliance with PBN IR

The current level of compliance with the requirements of the PBN IR within SMATSA IIc AoR is as follows:

- IAPs requirements:
 - LYBE, LYNI – fully implemented;
 - LYKV – partially implemented;
 - LYBT, LYVR, LYUZ – not implemented;
- SID/STARs requirements:
 - LYBE, LYNI, LYKV – fully implemented;
 - LYBT, LYVR, LYUZ – not implemented;
- ATS routes – fully implemented;
- SID / STAR / ATS routes for rotorcraft operations – no requirements.

4.2 Planned measures

In order to make full compliance with the PBN IR the following general measures have been defined for future implementation:

- Implementation of missing SID/STAR and IAP PBN procedures;
- Gradual withdrawal of conventional procedures (SIDs/STARs/IAPs);
- Implementation of DME/DME network as a backup infrastructure for TMA (where possible) and en-route PBN operations in case of a reversion from GNSS;
- Implementation of contingency measures, including retention of necessary minimum operational network of conventional NAVAIDs:
 - ILS Cat II and III (where available) - Will be retained in order to supplement RNP APCH procedures;
 - ILS Cat I (where available) - Will be used only as contingency approach procedure in case of a reversion from GNSS;
 - All DMEs (aerodrome, TMA, en-route):

- Should be modernised (if not currently) and retained in order to make DME/DME backup infrastructure to support TMA and en-route PBN operations;
- New DME installations may be expected, if required by the DME/DME coverage analysis;
- Aerodrome VORs:
 - Should be modernised (if not currently) and retained as contingency approach procedures at IREs where ILS Cat I is not available;
 - Will be retained as contingency NAVAIDs for TMA and en-route operations in case of a reversion from GNSS or PBN unavailability;
 - Together with collocated DMEs they form the only backup solution for missed approach phase (even for initial/intermediate phase when no radar service is provided) when GNSS signal is not available;
 - Aerodrome VOR/DMEs also support backup COM failure procedures and are used by airlines to define internal engine-out and other emergency procedures;
- TMA and en-route VORs:
 - Identified as legacy NAVAIDs and will not be renewed (maintenance is not possible anymore);
 - Will be sequentially withdrawn from operational use (GAT) in the sequence determined by their operational need;
- All NDBs and markers - Will be withdrawn from operational use (GAT);
- SIDs/STARs - Minimum one conventional SID/STAR procedure will be retained as contingency procedures in non-radar environments.

5 TRANSITION PLAN

Regarding the current level of compliance with the PBN IR requirements and identified future objectives three periods for further implementation steps have been determined:

- Short-term (next 3 years);
- Medium-term (from 4 to 7 years);
- Long-term (beyond 7 years).

Transitional measures are planned to be firstly introduced at LYBE because practically there are no operational limitations existing and multiple navigation redundancy is provided in every phase of flight.

Transitional measures at other aerodromes (LYNI, LYKV, LYBT and LYVR) that all have some specific operational environment with no radar service provided will be introduced in the later stages.

Transitional measures at LYUZ will be decided in accordance with 3.1.2.4.

All transitional measures need to be yet confirmed within consultation process that shall involve all relevant stakeholders.

Table 36 shows all general transitional measures with planned implementation timing.

Detailed future operational concept planned after transition period is presented in Section 6.

Table 36 Overview of transitional measures

Transition period		Location	Operational requirement
			Exclusive use of PBN and establishment of contingency measures
Short-term	2020	/	/
	2021	/	/
	2022	TMA Beograd - LYBE	Rationalisation of conventional SIDs/STARs
		LYBE	Withdrawal of NDB IAPs
		LYKV	Implementation of RNP APCH procedures down to LPV minimum and rationalisation of conventional SIDs/STARs
Medium-term	2023	TMA Batajnica - LYBT	Implementation of RNP APCH procedures and RNP 1 SIDs/STARs
		TMA Vršac - LYVR	Implementation of RNP APCH procedures and RNP 1 SIDs/STARs
	2024	LYBE	Withdrawal VOR IAPs
	2025	TMA Beograd - LYBE	Implementation of DME/DME backup infrastructure for RNAV 1 SIDs/STARs
	2026	TMA Niš - LYNI	Rationalisation of conventional SIDs/STARs
		TMA Batajnica - LYBT	Rationalisation of conventional SIDs/STARs
Long-term	2027	TMA Beograd - LYBE	Withdrawal of all conventional procedures
	2028	En-route	Implementation of DME/DME backup infrastructure for RNAV 5 ATS routes network
		TMA Niš - LYNI	Withdrawal of conventional procedures and introduction of contingency procedures
		TMA Kraljevo - LYKV	Withdrawal of conventional procedures and introduction of contingency procedures
	2029	TMA Batajnica - LYBT	Withdrawal of conventional procedures and introduction of contingency procedures
		TMA Vršac - LYVR	Withdrawal of conventional procedures and introduction of contingency procedures
	2030	/	/

Detailed PBN implementation roadmap presenting identified transitional measures is given in Appendix 2.

5.1 Short-term plan

5.1.1 TMA Beograd - LYBE RWY 12/30

- Rationalisation of conventional SIDs/STARs by 2022:
 - Used by a limited number of aircraft (primary use of RNAV 1 routes);
 - Only few routes in addition to radar vectoring will be retained in order to provide services to non-equipped aircraft at this stage;
 - Design of these routes should be based on VOR/DME BGD only (if possible), other VORs should be withdrawn from operational use (VAC, VAL, TPL, SMI);
 - All NDBs will be withdrawn from operational use for TMA GAT operations, including: JA, KN, PA, IA and OBR.

5.1.2 LYBE RWY 12/30

- Withdrawal of NDB IAPs by 2022:
 - Practically not used anymore;
 - Multiple redundancy will be maintained (ILS, RNP APCH, VOR);
 - NDBs considered for withdrawals are: JA, KN, PA, IA and OBR;

5.1.3 LYKV RWY 13/31

- Implementation of RNP APCH LPV minimum and rationalisation of conventional SIDs/STARs by 2022:
 - APCH redundancy will be maintained (RNP APCH, VOR);
 - SIDs/STARs expected to be used by a limited number of aircraft;
 - Only selected arrival and departure routes will be retained in order to provide services to non-equipped aircraft at this stage;
 - Design of all routes should be based on VOR/DME KRV only (if possible), other VORs should be withdrawn from operational use (VAL, TPL and BLC, if still operational due to inability to maintain them);
 - NDBs considered for withdrawals are: AD, BLC, BR and VTN.

5.2 Medium-term plan

5.2.1 TMA Batajnica - LYBT RWY 12L/30R and 12R/30L

- Implementation of RNP APCH procedures and RNP 1 SIDs/STARs by 2023:
 - Implementation of RNP APCH down to all three minima lines (where possible);
 - Implementation of RNP1 SIDs/STARs (where possible).

5.2.2 TMA Vršac - LYVR RWY 01R/19L

- Implementation of RNP APCH procedures and RNP 1 SIDs/STARs by 2023:
 - Implementation of RNP APCH down to all three minima lines (where possible);

- Implementation of RNP1 SIDs/STARs (where possible).

5.2.3 LYBE RWY 12/30

- Withdrawal of VOR IAPs by 2024:
 - Expected not to be used anymore;
 - Multiple redundancy will be maintained (ILS, RNP APCH);
 - VOR/DME BGD will be retained as contingency NAVAID for approach operations.

5.2.4 TMA Beograd - LYBE RWY 12/30

- Implementation of DME/DME backup infrastructure for SIDs/STARs by 2025:
 - Detailed DME/DME coverage analysis shall be undertaken;
 - Analysis will show if additional DME installations are necessary to develop adequate backup infrastructure network which will certainly include: BGD, SMI, TPL, VAC, VAL and KRV DME.

5.2.5 TMA Niš – LYNI RWY 11/29

- Rationalisation of conventional SIDs/STARs by 2026:
 - Expected to be used by a limited number of aircraft;
 - Only selected arrival and departure routes will be retained in order to provide services to non-equipped aircraft at this stage;
 - Modernisation of legacy VOR NIS with new DVOR NII is completed in 2021;
 - Design of all routes should be based on VOR/DME NII only (if possible), other VORs should be withdrawn from operational use (TPL and BLC, if still operational due to inability to maintain them);
 - All NDBs will be withdrawn from operational use for TMA operations, including: JST, VTN, ZO, TPL and BLC.

5.2.6 TMA Batajnica - LYBT RWY 12L/30R and 12R/30L

- Rationalisation of conventional IAP/SIDs/STARs by 2026:
 - Expected to be used by a limited number of aircraft;
 - Only selected arrival and departure routes will be retained in order to provide services to non-equipped aircraft at this stage;
 - Implementation of new Doppler VOR/DME BAA planned;
 - Design of all routes should be based on new VOR/DME BAA only (if possible), other VORs should be withdrawn from operational use (BGD, VAL, TPL and BLC, if still operational due to inability to maintain them);
 - All NDBs will be withdrawn from operational use for TMA operations, including: BT, EK, IA, JA and PA.

5.3 Long-term plan

5.3.1 TMA Beograd / LYBE

- Withdrawal of conventional procedures by 2027:
 - Will cover all SIDs, STARs and IAPs;
 - Minimum one approach procedure will be retained as contingency procedures (RWY 12/30 ILS Cat I);
 - DME/DME infrastructure and radar vectoring as backup will be provided for TMA operations.

5.3.2 En-route

- Implementation of DME/DME infrastructure for ATS routes by 2028:
 - Detailed DME/DME coverage analysis shall be undertaken;
 - Analysis will show if additional DME installations are necessary to develop adequate backup infrastructure network which will certainly include: BGD, NII, SMI, TPL, VAL, BLC, VAC and KRV DME.
 - Following aerodrome VORs shall be used as contingency NAVAIDs for en-route operations: BGD, NII, VAC and KRV.

5.3.3 TMA Niš / LYNI

- Withdrawal of conventional procedures by 2028:
 - Will cover SIDs, STARs and IAPs;
 - Minimum one SID/STAR/approach procedure will be retained as contingency procedures (SID/STAR based on VOR/DME / RWY 11 – VOR / RWY 29 – ILS Cat I approach).

5.3.4 TMA Kraljevo / LYKV

- Withdrawal of conventional procedures by 2028:
 - Will cover SIDs, STARs and IAPs;
 - Minimum one SID/STAR/approach procedure will be retained as contingency procedures (SID/STAR based on VOR/DME / RWY 13/31 – VOR approach).

5.3.5 TMA Batajnica / LYBT

- Withdrawal of conventional procedures by 2029:
 - Will cover SIDs, STARs and IAPs;
 - Minimum one SID/STAR/approach procedure will be retained as contingency procedures (SID/STAR based on VOR/DME / RWY 12L – ILS Cat I approach, 30L and 12R/30L – VOR approach).

5.3.6 TMA Vršac / LYVR

- Withdrawal of conventional procedures by 2029:
 - Will cover SIDs, STARs and IAPs;
 - Minimum one SID/STAR/approach procedure will be retained as contingency procedures (SID/STAR based on VOR/DME / RWY 01R/19L – VOR approach).

6 FUTURE OPERATIONAL ENVIRONMENT

6.1 Instrument approach procedures

Future approach operations are planned as shown in the table below and will be enabled for use in the following way:

- Primary (RNP APCHs) and supplementing (ILS Cat II or III if available) approach procedures shall be published in AIP and made fully available 24/7 for operations planning;
- Contingency procedures shall also be published in AIP but not for planning purposes and only available by NOTAM or by ATC clearance (on pilot request - if there is no other measure to be used on tactical basis);
- All NAVAIDs (operational and contingency) shall be published with necessary information available within adequate AIP AD sections.

Table 37 Future approach operations

ICAO Code	RWY	IAPs			
		NAV specification	NAV infra-structure	Ground facilities to supplement RNP APCH procedures	NAV contingency procedures / infrastructure
LYBE	12	RNP APCH down to LPV, LNAV/VNAV and LNAV minima	GNSS	ILS Cat III (LOC) based on YUB GP/LOC and DME (GP coloc.) and VOR/DME BGD for missed approach	VOR approach based on VOR/DME BGD
	30	RNP APCH down to LPV, LNAV/VNAV and LNAV minima	GNSS	/	ILS Cat I (LOC) based on YBE GP/LOC and VOR/DME BGD for missed approach
LYNI	11	RNP APCH down to LNAV/VNAV and LNAV minima	GNSS	/	VOR approach based on VOR/DME NII
	29	RNP APCH down to LPV, LNAV/VNAV and LNAV minima	GNSS	/	ILS Cat I (LOC) based on YNI GP/LOC and DME (GP coloc.) and VOR/DME NII for missed approach
LYKV	13	RNP APCH down to LPV, LNAV/VNAV and LNAV minima	GNSS	/	VOR approach based on VOR/DME KRV
	31	RNP APCH down to LPV, LNAV/VNAV and LNAV minima	GNSS	/	VOR approach based on VOR/DME KRV

LYBT	12L	RNP APCH down to LPV, LNAV/VNAV and LNAV minima	GNSS	/	ILS Cat I (LOC) based on BTJ GP/LOC and DME (GP coloc.) and VOR/DME BAA for missed approach
	30R	RNP APCH down to LPV, LNAV/VNAV and LNAV minima	GNSS	/	VOR approach based on VOR/DME BAA
	12R	RNP APCH down to LPV, LNAV/VNAV and LNAV minima	GNSS	/	
	30L	RNP APCH down to LNAV/VNAV and LNAV minima see Table 32 LYBT 30L	GNSS	/	
LYVR	01R	RNP APCH down to LPV, LNAV/VNAV and LNAV minima	GNSS	/	VOR approach based on VOR/DME VAC
	19L	/ see Table 32 LYVR 19L	/	/	/
LYUZ	10	TBD			
	28				

6.2 SID and STAR routes

Future TMA operations are planned as shown in the table below and will be enabled for use in the following way:

- Primary SIDs and STARs (RNAV 1 / RNP 1) shall be published in AIP and made fully available 24/7 for operations planning;
- Contingency procedures for LYBE **shall not be** published in AIP because DME/DME back up infrastructure as well as radar vectoring will be provided; contingency measures will imply only flight to or from VOR/DME BGD;
- Contingency procedures for LYNI, LYKV, LYBT, LYVR and LYUZ **shall be** published in AIP because there is no radar service provided and due to high terrain configuration at some locations; procedures shall not be available for planning purposes and shall be used by ATC clearance only (on pilot request);
- All NAVAIDs (operational and contingency) shall be published with necessary information available within adequate AIP AD sections.

Table 38 Future TMA operations

ICAO Code	RWY	SIDs/STARs			
		NAV specification	NAV infrastructure	NAV back-up infrastructure	NAV contingency infrastructure
LYBE	12	RNAV 1	GNSS	DME/DME + Radar as required	VOR/DME BGD
	30				
LYNI	11	RNP 1	GNSS	/	VOR/DME NII
	29				
LYKV	13	RNP 1	GNSS	/	VOR/DME KRV
	31				
LYBT	12L	RNP 1	GNSS	/	VOR/DME BAA
	30R				
	12R				
	30L				
LYVR	01R	RNP 1	GNSS	/	VOR/DME VAC
	19L	RNP 1 (SIDs only) see Table 32 LYVR 19L	GNSS (SIDs only)		VOR/DME VAC (SIDs only)
LYUZ	10	TBD			
	28				

6.3 En-route

Future en-route operations are planned as shown in the table below and will be enabled for use in the following way:

- The most operations will be performed within FRA environment;
- Extension of FRA laterally (through the involvement of additional countries in the SECSI FRA initiative) and vertically (below FL205 to the operationally required level) beyond 2030 should be expected and will subsequently affect ATS route network;
- Radar vectoring and DME/DME as a backup infrastructure will be provided;
- RNAV 5 ATS routes will be maintained in order to support operations in non-radar ATC units and to connect FRA and TMA.
- Contingency procedures/routes **shall not** be published in AIP because DME/DME back up infrastructure as well as radar vectoring will be provided; contingency measures will imply only flight to or from VOR(/DME) infrastructure;
- All contingency NAVAIDs shall be published with necessary information available within adequate AIP GEN or ENR sections.

Table 39 Future en-route operations

NAV application	Limits	NAV specification	NAV infrastructure	NAV back-up infrastructure	NAV contingency infrastructure
FRA*	TBD	RNAV 5	GNSS	DME/DMEs + Radar as required	Aerodrome VORs
ATS routes	TBD				

* Out of the PBN IR scope.

6.4 NAVAID infrastructure

Necessary minimum operational network of conventional navigation aids within future operational environment framework is planned according to the table below.

Table 40 Future NAVAIDs minimum operational network

Location	Procedure	Current NAVAIDs network for IFR GAT	Future NAVAIDs network for IFR GAT		
		In ops	In ops	Contingency	Not in ops
LYBE / TMA Beograd	IAPs	GP/LOC YBE DME YUB GP/LOC YUB VOR/DME BGD VOR/DME VAL NDB IA NDB JA NDB KN NDB OBR NDB PA Markers x4	GP/LOC YUB DME YUB	GP/LOC YBE VOR/DME BGD	VOR/DME VAL NDB IA NDB JA NDB KN NDB OBR NDB PA Markers x4
	SIDs and STARs	VOR/DME BGD VOR/DME SMI VOR/DME TPL VOR/DME VAC VOR/DME VAL NDB IA NDB KN NDB OBR NDB PA NDB TPL NDB VAL	As DME/DME infrastructure backup: DME BGD DME SMI DME TPL DME VAC DME VAL + DME KRV DME NII	VOR/DME BGD	VOR SMI VOR TPL VOR VAC VOR VAL NDB IA NDB KN NDB OBR NDB PA NDB TPL NDB VAL
LYNI / TMA Niš	IAPs	GP/LOC YNI DME YNI VOR/DME NII NDB ZO	/	GP/LOC YNI DME YNI VOR/DME NII	NDB ZO
	SIDs and STARs	VOR/DME NII NDB JST NDB ZO	/	VOR/DME NII	NDB JST NDB ZO
LYKV / TMA Kraljevo	IAPs	VOR/DME KRV NDB AD NDB BR NDB VTN	/	VOR/DME KRV	NDB AD NDB BR NDB VTN

	SIDs and STARs	VOR/DME BLC VOR/DME KRV VOR/DME TPL VOR/DME VAL NDB AD NDB BLC NDB BR NDB LA NDB VTN NDB TPL NDB VAL	/	VOR/DME KRV	VOR/DME BLC VOR/DME TPL VOR/DME VAL NDB AD NDB BLC NDB BR NDB LA NDB VTN NDB TPL NDB VAL
LYBT / TMA Batajnica	IAPs	GP/LOC BTJ DME BTJ DME BGD NDB BT NDB EK NDB IA NDB JA NDB: PA Markers x2	/	GP/LOC: BTJ DME BTJ VOR/DME BAA	DME BGD NDB BT NDB EK NDB IA NDB JA NDB PA Markers x2
	SIDs and STARs	VOR/DME BGD VOR/DME SMI VOR/DME TPL VOR/DME VAL NDB IA NDB PA NDB POZ NDB PV NDB TPL NDB VAL	/	VOR/DME BAA	VOR/DME BGD VOR/DME SMI VOR/DME TPL VOR/DME VAL NDB IA NDB PA NDB POZ NDB PV NDB TPL NDB VAL
LYVR / TMA Vršac	IAPs	VOR/DME VAC NDB VRA	/	VOR/DME VAC	NDB VRA
	SIDs and STARs	VOR/DME VAC NDB VRA	/	VOR/DME VAC	NDB VRA
LYUZ / TMA Užice**	IAPs	NDB UZ NDB SR Markers x2	TBD	TBD	TBD Markers x2
	SIDs and STARs	NDB UZ NDB SR	TBD	NDB UZ TBD	NDB SR TBD

En-route	ATS routes	Only as backup: NDB VAL NDB VTN VOR/DME BGD VOR/DME SMI VOR/DME TPL VOR/DME VAL VOR/DME BLC	As DME/DME infrastructure backup: DME BAA DME BGD DME NII DME SMI DME TPL DME VAL DME VAC DME KRV + additional, if required	VOR/DME BAA VOR/DME BGD VOR/DME KRV VOR/DME NII VOR/DME VAC	VOR SMI VOR TPL VOR VAL VOR/DME BLC NDB VAL NDB VTN
Total nb. of NAVAIDs		<i>CURRENT</i>	<i>FUTURE</i>		<i>TO BE WITHDRAWN</i>
		GP/LOCs: 4 VORs: 9 DMEs: 11 NDBs: 20 Markers: 8 TOTAL: 52	GP/LOCs: 1 (3) ¹ VORs: 0 (4+1 new) DMEs: 8 (2+1 new) NDBs: 1 Markers: 0 TOTAL: 10 (8+2 new)		GP/LOCs: 0 VORs: 5 DMEs: 1 NDBs: 19 Markers: 8 TOTAL: 33

¹ Contingency NAVAIDs shown in brackets.

** TMA Užice will be merged with TMA Kraljevo on 04 NOV 21 (please see item 2.1.6).

6.5 Surveillance and communication services

Surveillance and communication services in the future operational environment will be provided as shown in the following table:

Table 41 Overview of surveillance and communication services

Airspace	SUR	COM
ACC Beograd	Fully provided (minimum horizontal radar separation is 5 NM)	Fully provided
TMA Beograd		
TMA Niš	Not provided (non-radar environment – procedural ATC services provided)	
TMA Kraljevo		
TMA Batajnica		
TMA Vršac	NOTE: full radar coverage available in some TMAs	

7 DEFINITIONS

For the purposes of this document definitions from Article 2 of the PBN IR shall apply.

8 ACRONYMS AND ABBREVIATIONS

AIP	Aeronautical information publication
ALT	Altitude
ANS	Air navigation services
ANSP	Air navigation service provider
AoR	Area of responsibility
APCH	Approach
APV	Approach procedure with vertical guidance
ATC	Air traffic control
ATCC	Air traffic control centre
ATM	Air traffic management
ATS	Air traffic services
AUR	Airspace Usage Requirements
B-RNAV	Basic area navigation
CAT	Category
DCT	Direct
DME	Distance measuring equipment
EC	European Commission
ECAC	European common aviation area
EGNOS	European geostationary navigation overlay service
ESSP	European satellite service provider
EU	European Union
EWA	EGNOS working agreement
FIR	Flight information region
FL	Flight level
FRA	Free route airspace
GNSS	Global navigation satellite system
GAT	General air traffic
IAP	Instrument approach procedure
ICAO	International civil aviation organization
IFP	Instrument flight procedure
ILS	Instrument landing system
IR	Implementing rule

IRE	Instrument runway end
LNAV	Lateral navigation
LOC	Localizer
LPV	Localizer performance with vertical guidance
MNM	Minimum
NAV	Navigation
NAVAID	Navigation aid
NDB	Non-directional beacon
NETOPS	Network operations team
NPA	Non-precision approach
PA	Precision approach
PBN	Performance based navigation
PCP	Pilot common project
RF	Radius to fix
RNAV	Area navigation
RNP	Required navigation performance
RS	Republic of Serbia
RWY	Runway
SID	Standard instrument departure
STAR	Standard instrument arrival
TBD	To be defined
TMA	Terminal control area
UIR	Upper flight information region
VNAV	Vertical navigation
VOR	Very high frequency omnidirectional radio range

9 APPENDICES

No.	Appendix Title	No. of pages
1	PBN checklist of implementation	1
2	Detailed PBN implementation roadmap	1

APPENDIX 1 - PBN Checklist of implementation

Table 42 PBN Checklist of implementation

Regulatory requirement to be shown in Transition Plan		Compliance (Y/N)	Comment
A	AUR.PBN.2005 (1) RNP APCH at IRE without PA (or der. 2 or 3) by 03 DEC 2020	Y	Partially Implemented - see Subsection 3.1
B	AUR.PBN.2005 (6) RNAV 5 at and above FL150 by 03 DEC 2020	Y	Implemented - see Subsection 3.3
C	AUR.PBN.2005 (1) RNP APCH at IRE having PA (or der. 2 or 3) by 25 JAN 2024	Y	Partially Implemented - see Subsection 3.1
D	AUR.PBN.2005 (6) RNAV 5 below FL150 by 25 JAN 2024	Y	Implemented - see Subsection 3.3
E	AUR.PBN.2005 (4) RNAV 1 or RNP 1 (+) SID/STARs one per IRE by 25 JAN 2024 (or der. 5)	Y	Partially Implemented - see Subsection 3.2
F	AUR.PBN.2005 (7) Helicopter RNP 0.3 SID/STAR – one per IRE by 25 JAN 2024	Y	Not implemented - see Subsection 3.4 (no requirements)
G	AUR.PBN.2005 (7) Helicopter RNP 0.3 ATS routes below FL150 by 25 JAN 2024	Y	Not implemented - see Subsection 3.4 (no requirements)
H	AUR.PBN.2005 (4) RNAV 1 or RNP 1 (+) for all SID/STARs by 06 JUN 2030	Y	Partially Implemented - see Subsection 3.2
I	AUR.PBN.2005 (7) Helicopter RNP 0.3 for all SID/STAR by 06 JUN 2030	Y	Not implemented - see Subsection 3.4 (no requirements)
J	Transition Plan covering compliance criteria A & B	Y	Criteria B already fulfilled, for compliance criteria A - see Section 5
K	Transition Plan covering compliance criteria C, D, E, F & G	Y	Criteria D already fulfilled, for compliance criteria C and E - see Section 5 No requirements for criteria F & G exist
L	Transition Plan covering compliance criteria H & I	Y	For compliance criteria H - see Section 5 No requirements for criteria I exist
M	Exclusive use of PBN	N	Planned - see Section 5
N1	Contingency Measures in accordance with Article 6 for each phase of Transition Plan	Y	Implemented for the current phase of the Transition Plan - see Subsection 3.5
N2	Retention of minimum operational network of conventional navigation aids and related surveillance and communication infrastructure as per Article 6	Y	Implemented for the current phase of the Transition Plan - see Subsection 3.5; Transition to the minimum operation network of conventional navigation aids (including withdrawal and rationalisation of conventional procedures) in line with criteria M is still to be done in accordance with Transition Plan defined in Section 5

APPENDIX 2 - Detailed PBN implementation roadmap

TBD

END OF THE DOCUMENT
