

Lebanese Directorate General of Civil
Aviation



MIDANPIRG PBN SG/2 Meeting
Sharm El Sheikh, 22-25 February 2016

Lebanon
Presented by Tarek Mrad
Chief of Beirut ACC



The Lebanese DGCA is part of the Ministry of Public Work and Transport, and it is the Regulatory and Operational Authority

An Act, Law(481/2002) was approved by the Lebanese Government, which will establish a separation between regulator and service provider. It is not yet implemented



- Part of the country's involvement in **EC cooperation projects and regional cooperation**
- Involvement in the **European GNSS in line with the Lebanon strategy**
- **Technical assistance plan** on the basis of the country's specific needs



National PBN Implementation Plan

The plan is in process to be developed and planning to be achieved by October 2016 and it consists of following:

- update our regulations and PANS-OPS approval procedures
- Procedures of LNAV/VNAV and LPV for 3 ends Runways:
16-21-03
- Planning for New procedures for GNSS RNAV₁ SIDs and STARs



National PBN Implementation Plan

- The LNAV/VNAV procedures has been achieved by ENAV through MEDUSA project and will be endorsed and published after updating in the near future our regulations and PANS-OPs approval
- the same situation for LPV to be endorsed and published after having also the SBAS coverage in our region



National PBN Implementation Plan

- our planning for New GNSS RNAV 1 SIDs and STARs with the following specifications:
- provide vertical and lateral separation between outbound and inbound traffic in order to enhance safety and reduce controller workload and C-P radio communication .
- Implementing CDO and CCO for noise abatement, environmental benefits and fuel consumption.

should be achieved by the end of 2017.



Status of Implementation

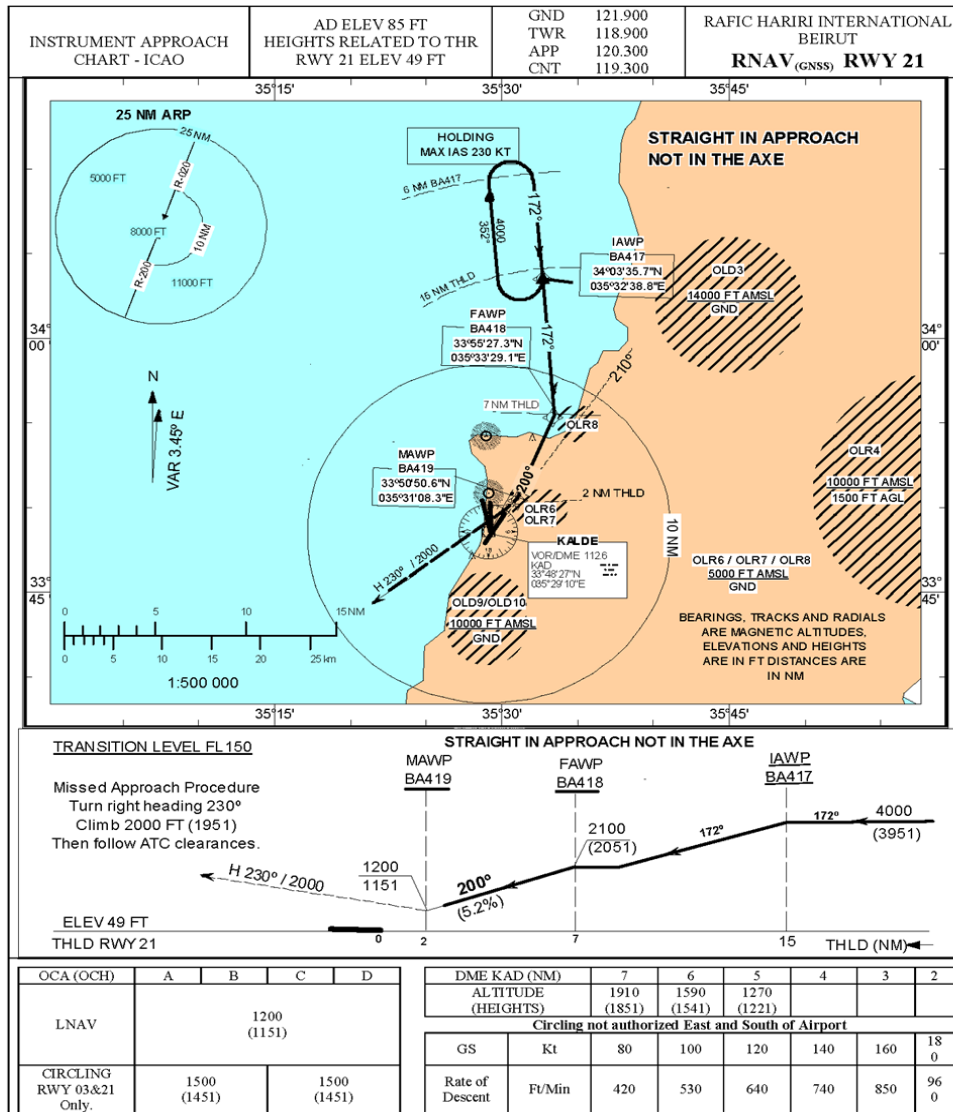
overview of the State's PBN capabilities:

- Regulations still basic
- We don't have yet PANS-OPS Inspectorate
- We have only 2 procedure designers need for refreshment and practicing
- We have one Automated tool need to be update



Status of Implementation

RWY Ends	ILS / CAT	LNAV	LNAV/ VNAV	LPV	RNP AR	RNAV SID	RNAV STAR
21	1	yes	designed but not published	Designed but not published		no	Yes
17	1	yes	no	no		no	yes
16	1	yes	Designed but not published	Designed but not published		No departure	yes
03	1	yes	Designed but not published	Designed but not published		no	yes
34		No arrival				no	
35		No arrival				no	



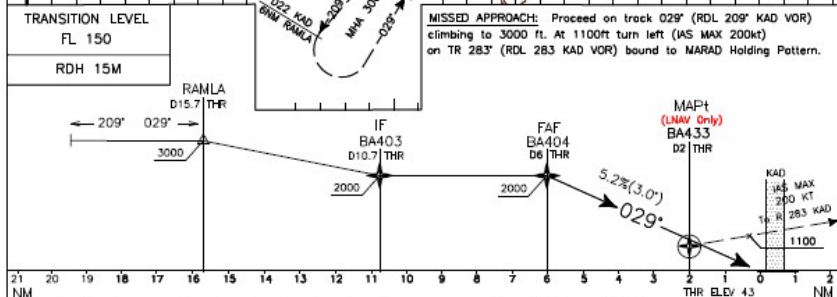
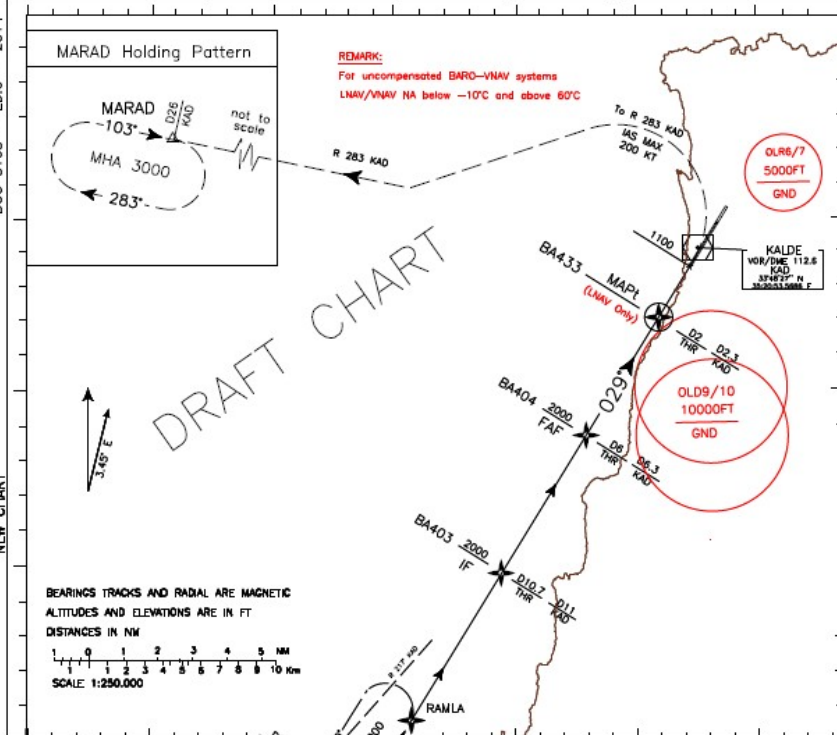
ICAO - INSTRUMENT APPROACH CHART

AD 2 OLBA XX

DOC 8168 - ED.6 - 2014

NEW CHART

GND	121.900	AD ELEV	85	OLBA	RAFTC HARIRI INTERNATIONAL BEIRUT RNAV (GNSS) - Z RWY 03
TWR	118.900				
APP	120.300				
CNT	119.300				



OCA (OCH)	A				B				C				D			
	CS	FT PER MIN	FAF-THR	DIST FROM THR	ALT (HGT)	MNM	SECT	ALT	CS	FT PER MIN	FAF-THR	DIST FROM THR	ALT (HGT)	MNM	SECT	ALT
STRAIGHT IN APPROACH	LNAV/VNAV	949 (906)	961 (918)	969 (926)	980 (937)	80	421	4:30	6.0NM	2000 (1957)						
	LNAV/VNAV NA 3.0%	869 (826)	881 (838)	889 (846)	900 (857)	100	527	3:36	5.0NM	1685 (1642)						
	LNAV	1000 (957)				120	632	3:00	4.0NM	1365 (1322)						
						140	737	2:34	3.0NM	1050 (1007)						
CIRCLING (Bar 03 & 21 Only)	1410 (1325)				1510 (1425)				160	842	2:15	2.0NM	730 (687)			
									180	948	2:00					

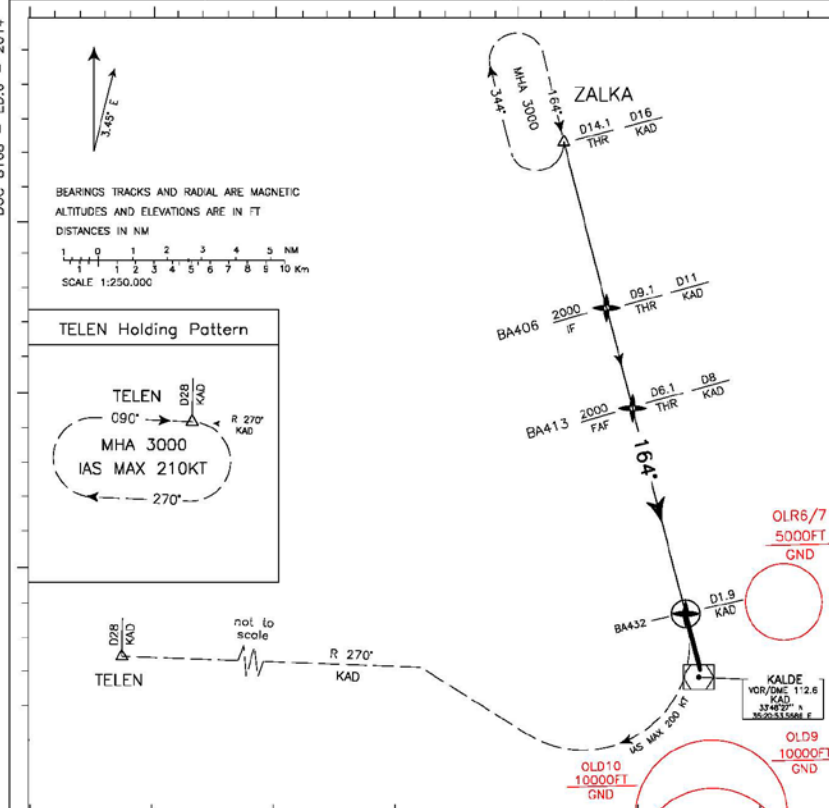
AIRAC effective date DD MMM YYYY (AX/YY)

ICAO - INSTRUMENT APPROACH CHART

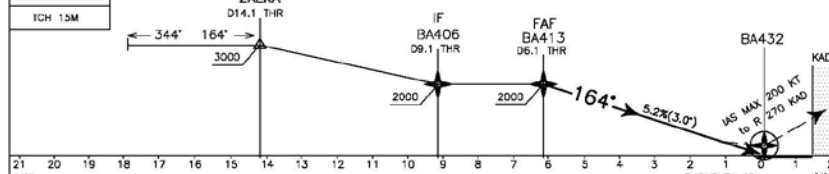
AD 2 OLBA XX

EGNOS CH 59264 E16A	GND TWR APP CNT	121.900 118.900 120.300 119.300	AD ELEV 85	OLBA RAFIC HARIRI INTERNATIONAL BEIRUT RNAV (GNSS)-Y RWY 16
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MISSED APPROACH: Climb to 3000 ft. At BA432 (D1.9 KAD DME), turn right (IAS MAX 200kt) on TR 270° (RDL 270 KAD VOR) bound to TELEN Holding Pattern.



OCA (OCH)	A B C D				GS	FT PER MIN	FAF-THR	DIST FROM THR	ALT (MCT)	MNM SECT ALT 25NM	ARP
	LPV	369 (359)	381 (371)	389 (379)							
STRAGHT IN APPROACH					80	421	4:35	6NM	1970 (1960)		
					100	527	3:40	5NM	1850 (1840)		
					120	632	3:03	4NM	1330 (1320)		
					140	737	2:37	3NM	1015 (1005)		
					160	842	2:17	2NM	695 (685)		
					180	948	2:02				
CIRCLING (90° & 21 Only)		880 (795)		1070 (985)							

AIRAC effective date DD MMM YYYY (AX/YY)



Main outcomes

Awareness to raise the interest of decision-makers and stakeholders

Training for understanding of PBN use, operations and benefits for aviation

Survey, examination and gap analysis in relation to the existing legislations and regulations, procedures and current practices

From findings of the survey/examination/gap analysis:

Assessment of the readiness of Lebanon to introduce PBN operations After assuring a regulatory convergence with international regulations



Challenges

Progresses and priority for Lebanon

Meanwhile the Law 481 remains the priority to align the aviation regimes of Lebanon, also to allow the necessary changes of the National Organizations
Regulation Authority
Professional and certified personels
Software
The process to endorse and publish new PBN procedures



Lessons learned

- Introduction of PBN had reduced ATC workload
- Provided efficient STARs and aligned to some extent with the radar vectoring techniques used by ATCOs
- PBN approach for RWY21 where ILS is not feasible due high mountainous area
- Reflect user preferred track
- Back plan for ILS approaches.
- Noise abatement



Thoughts/Recommendations

Developing regulations

Training of PANS-Ops inspectors

Maintaining procedure designers competency

Data validation

Flight validation

Working together through MID FPP for assistance will improve PBN implementation in LEBANON

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On the behalf of our Directorate, we will take the opportunity to thank the core of ICAO MID office and NANSC for their effort and enthusiasm carried out to set up this meeting.

Thank



You...