

AERONAUTICAL CHARTING FORUM



Federal Aviation
Administration

ICAO INSTRUMENT FLIGHT PROCEDURES PANEL (IFPP) RECENT 13-1 PLENARY MEETING REVIEW

Robby Myers, US Member to ICAO IFPP
Barry Billmann, Ralph Sexton, Mike
Webb & John Moore Advisors

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BACKGROUND

- IFPP PANEL MEETINGS ARE HELD BI-ANNUALLY
 - IFPP PLENARY MEETINGS ARE HELD SEMI-ANNUALLY
 - 7 WORKING GROUPS MEET AS NEEDED BETWEEN PLENARY MEETINGS
 - THE FOLLOWING WGs ARE INVOLVED IN ESTABLISHING PROMULGATION AND CHARTING CRITERIA FOR INSTRUMENT PROCEDURES
 - **PBN & New Criteria WG**
 - **Maintenance & Implementation WG**
 - **Helicopter WG**
 - **Integration WG***
- * **Lead WG for Promulgation and Charting Criteria**

OVERVIEW

- **RESULTS FROM 13-1 THRU 13-3 PLENARY MEETINGS WILL FORM THE BASIS FOR THE 13th PANEL MEETING PRESENTATIONS**
 - **Results of the 13th Panel Meeting will be Submitted to ANC Leading to:**
 - **Amendment 7 to PANS OPS and Possibly Doc 4444 Amendments**
 - **Annex 4, 10, 11 and 15 Amendments**
 - **Amendments to Doc 8697, the Aeronautical Charting Manual**
- **TOPICS FOR FURTHER DISCUSSION FOLLOWING PLENARY 13-1**
 - **Charting of Procedures Based on GBAS and GBAS Terminology**
 - **Criteria for Fixed Radius Transitions (FRT)**
 - **Charting of Conventional Nav. Aids on PBN Procedures**
 - **Visual Segment Surface (VSS)**
 - **Other Topics**

CHARTING OF PROCEDURES BASED ON GBAS

- **TITLING OF PROCEDURES AS “GLS RWY XX” EFFECTIVE WITH AMENDMENT 4 TO PANS OPS (NOVEMBER 2010)**
- **PANS OPS DEFINITION OF GLS ADOPTED IN 2004**
 - ***GBAS landing system (GLS). A system for approach and landing operations utilizing GNSS, augmented by a ground based augmentation system, as the primary navigation reference.***
- **7 STATES HAVE PUBLISHED PROCEDURES BASED ON GBAS**
 - **6 States Title Procedures as “GLS RWY XX”**
 - **Spain Titles Procedures as “GBAS RWY XX” and has Proposed a Change to PANS OPS Regarding Tilting and Elimination of the GLS Definition**

CHARTING OF PROCEDURES BASED ON GBAS

LUFTFAHRTHANDBUCH DEUTSCHLAND
AIP GERMANY

AD 2 EDDW 4-7-1
14 NOV 2013

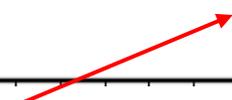
INSTRUMENT
APPROACH
CHART - ICAO

VAR 1° E

ELEV 14
OCH RELATED TO
THR 27 ELEV 14

ATIS	132.375	TOWER	120.325
RADAR	125.650	GROUND	121.750

BREMEN
GLS
RWY 27



NEWARK, NEW JERSEY

AL-285 (FAA)

13346

LAAS CH 22727 G04A	APP CRS 039°	Rwy Idg 8460 TDZE 10 Apt Elev 18
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GLS RWY 4L
NEWARK LIBERTY INTL (EWR)



INSTRUMENT
APPROACH
CHART - ICAO

APPROACH	126.100
START	118.200

TYUMEN, RUSSIA
ROSHCHINO
GLS RWY 30



Credit: AENA IFPP Briefing



CHARTING OF PROCEDURES BASED ON GBAS



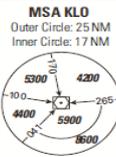
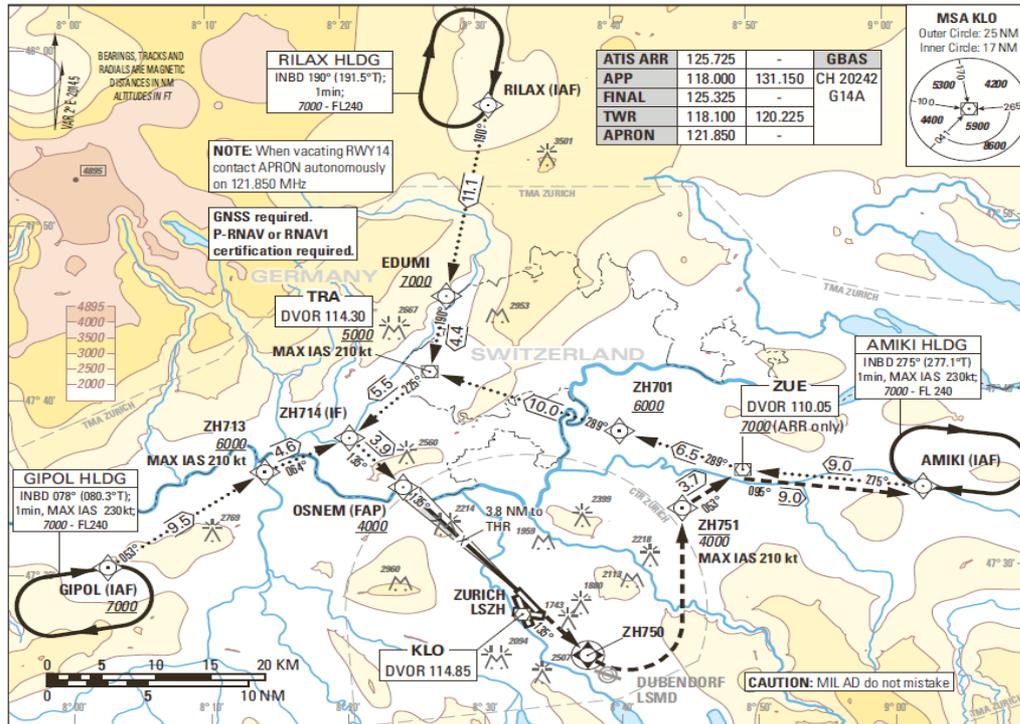
Credit: AENA IFPP Briefing

GBAS TERMINOLOGY ISSUES

- PANS OPS GBAS TEXT NOT HARMONIZED WITH EXISTING DEFINITION OF GLS
- EXAMPLES FROM EXISTING TEXT:
 - “GBAS Final Approach Segment”
 - “GBAS Minima”
 - “GBAS Category I Procedure”
- DEFINITION OF **GLS** NOT RECOGNIZED IN ANNEX 10
- DOC 4444 PHRASEOLOGY CALLS PROCEDURES “GBAS RWY XX” AND USES NOTAM EXAMPLES CONTRARY TO PANS OPS CHART TITLING
- PRESUMED ATM COMMUNICATIONS CONFUSION BETWEEN “ILS” AND “GLS” PHRASEOLOGY (**ENAIRE BRIEFING**)

ACTION TO ADDRESS GBAS TERMINOLOGY

- **US PAPER ALIGNING PANS OPS GBAS TERMINOLOGY WITH THE GLS DEFINITION PRESENTED AT IFPP PLENARY 13-1 MEETING**
 - **The Term “GLS” Used when Addressing the Elements of the Procedure**
 - **The Term “GBAS” Refers to the System Augmenting GNSS**
- **ATM WORKING GROUP TASKED TO HARMONIZE DOC 4444 GBAS TEXT WITH PANS OPS GLS CHARTING REQUIREMENTS**
 - **Probably Requires Interaction with ATM OPSP**
 - **Investigate Presumed Phraseology Confusion with ILS/GLS**
- **COORDINATION WITH US NAVIGATION SYSTEMS PANEL MEMBER**
 - **Recognition of the PANS OPS GLS Definition in Annex 10**
 - **Align the GARP Definition in Annex 10 to Address Both GBAS and SBAS**



ATIS ARR	125.725	-	GBAS
APP	118.000	131.150	CH 20242
FINAL	125.325	-	G14A
TWR	118.100	120.225	
APRON	121.850	-	

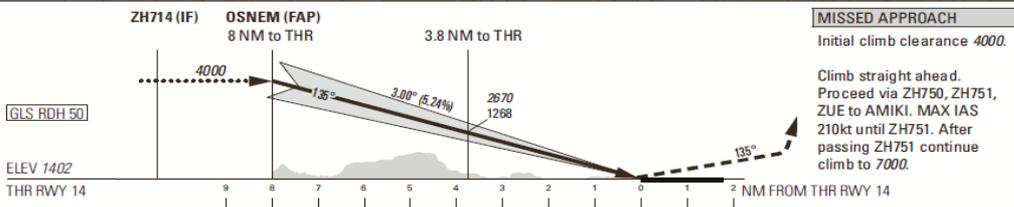
NOTE: When vacating RWY14 contact APRON autonomously on 121.850 MHz

GNSS required. P-RNAV or RNAV1 certification required.

GIPOL HLDG
INBD 078° (080.3°T);
1min, MAX IAS 230kt;
7000 - FL240

AMIKI HLDG
INBD 275° (277.1°T)
1min, MAX IAS 230kt;
7000 - FL 240

CAUTION: MIL AD do not mistake



Missed APCH climb gradient requirement	STRAIGHT-IN APPROACH				
	To Altitude	A	B	C	D _L
2.5%	N/A	1614 (212)	1624 (222)	1634 (232)	1644 (242)
3.0%	2400	1555 (153)	1564 (162)	1575 (173)	1587 (185) 1592 (190)
		DECISION ALTITUDE (HEIGHT)			
2.5%	N/A	1614 (212)	1624 (222)	1634 (232)	1644 (242)
3.0%	2400	1602 (200)			
Circling ¹⁾²⁾	OBSTACLE CLARANCE ALTITUDE (HEIGHT)				
	RWY 28 right hand				
	RWY 28 left hand	2360 (950)	2470 (1060)		2710 (1300)
	RWY 10 left hand				

ROD	GS kt	90	110	130	150
	FT/MIN	477	584	690	796

NOTE
¹⁾ Height above aerodrome ELEV 1417ft, speed an radius for CAT D and CAT D_L as for CAT C ACFT, circling prohibited in a sector S of extended RCL 28 an W of extended RCL 16.
²⁾ All circling procedures temporarily suspended.

COR: new chart

FIXED RADIUS TRANSITION (FRT)

- PROPOSED AMENDMENTS OFFERED FOR ANNEXES 4, 11 & 15
- SUFFIX ADDED TO ROUTE DESIGNATOR WHEN AN FRT CONNECTS **ANY TWO SEGMENTS OF THE ROUTE**
- HARD ALTITUDE STRATIFICATIONS AND FIXED RADII DISCARDED
 - **Altitude Stratification Can Not be Applied Universally**
 - **Aircraft That Can Fly FRTs Can Fly Different Radii on Fixed Radius Transitions**
 - **Annex 15 Proposal Identifies Altitudes and Radii Where Ever an FRT Exists**
- OPENED ACTIONS
 - **Protection Will Likely be Fly-by Waypoint Protection**
 - **Coordination with the RNPSG Required**
 - **Doc 4444 Flight Plan Code (?)**

CHARTING CONVENTIONAL NAV. AIDS ON PBN PROCEDURES

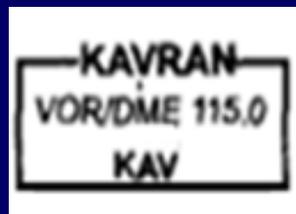
- WORK IN PROGRESS
- TWO CASES
 - Nav. Aid Used To Simply Provide Location When RNAV is Providing Guidance . Facility is not Used for Flight Track Guidance.
 - Nav. Aid Attributes (VOR Radial, NDB Bearing) Used for Flight Track Guidance or to Provide for “Reversionary Navigation”
- NAV. AID USED TO IDENTIFY LOCATION DEPICTION ~ NOT FOR FLIGHT TRACK GUIDANCE

- Nav. Aid and Identifier



- NAV. AID ATTRIBUTE USED TO PROVIDE GUIDANCE DEPICTION

- Nav. Aid Name and Type
- Nav. Aid Frequency
- Nav. Aid Identifier



VISUAL SEGMENT SURFACE (VSS)

- AMENDMENT 6, AS MODIFIED FOLLOWING IFPP/12, REQUIRES IDENTIFICATION OF VSS PENETRATIONS
- IWG TASKED WITH ESTABLISHING PENETRATION IDENTIFICATION CRITERIA
 - **Grouped Penetrating Obstacles**
 - **Textual Description (?)**
 - **Symbolic Depiction (?)**
 - **Where: Profile or Plan View (?)**
- COORDINATION WITH AERODROME OBSTACLE LIMITATION TASK FORCE IS REQUIRED

OTHER CHARTING TOPICS

- **GLS DUPLICATE PROCEDURE INDICATOR ~ “GLS Z RWY XX”**
 - **No Required Order for Assigning the Indicator**
 - **Z Disassociated From Procedure with Lowest Minima**
- **RNP AR PROCEDURE DESIGN MANUAL (DOC 9905)**
 - **Chapter 5 Publication and Charting ~ Revised to Align with Amendment 6 to PANS OPS**
- **CHARTING OF PROCEDURE DESIGN MAGNETIC VARIATION(PDMV)**
 - **Issues are being Identified**
- **STANDARIZATION OF PUBLICATION TERMINOLOGY**
 - **Standardize Phraseology Concerning Promulgation and Publication of Procedures. What are the Differences Among the Following?**
 - **Identify, Denote, Depict, Annotate, Mention, Show, etc.**

OTHER CHARTING TOPICS

- **RESTRUCTURING OF PANS OPS VOLUME I**
 - **Information for the Pilot and Operator**
 - **Small Select Secretariat Drafting Group ~ US Participating**
 - **Incorporate Material Addressing PBN Operations**
 - **Joint Activity with FLT OPS Panel (Volume I Part III ~ Aircraft Operations)**
- **VOLUME II CHARTING MATERIAL**
 - **Existing Volume II Charting Material Collected for Inclusion in an Attachment to Volume I**
 - **Extensive Additions Addressing PBN Operations Need to be Incorporated into the Charting Attachment**

OTHER CHARTING TOPICS

- **ALL TOPICS ARE WORK IN PROGRESS**
- **RELATIONSHIP OF PROCEDURE ALTITUDE TO MOCA**
- **RELOCATION AND RENAMING OF SIGNIFICANT POINTS**
- **SIGNIFICANT POINT PUBLICATION**
- **SID-STAR PUBLICATION**
- **FAF IDENTIFICATION ON PBN PROCEDURES**



UPCOMING MEETINGS ADDRESSING CHARTING

- **DOC 9905 CORRIGENDA TASK ~ MONTHLY VIRTUAL MEETINGS THRU SEPTEMBER**
- **IFPP PBN & NEW CRITERIA WG ~ VIRTUAL BI-MONTHLY MEETINGS THRU SEPTEMBER**
- **IFPP MAINTENANCE WG ~ VIRTUAL MEETING LATE JUNE**
- **IFPP INTEGRATION WG ~ LONDON 20-24 JULY**
- **FLT OPS WG ~ VIRTUAL MEETING 8 JULY**
- **IFPP HELICOPTER WG ~ VIRTUAL MEETING 30 APRIL**
- **IFPP Plenary 13-2 Meeting ~ Montreal, Canada 23 September – 2 October**
- **IFPP Plenary 13-3 Meeting ~ Seoul, Korea 4-15 April 2016**
- **IFPP 13TH Panel Meeting ~ Montreal, Canada 19-30 September 2016**

QUESTIONS?

OR DO WE HAVE A CLEAR VISION FORWARD?

