

FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
RNAV (GPS) STANDARD INSTRUMENT APPROACH PROCEDURE
TITLE 14 CFR PART 97.33

Bearings, headings, courses, tracks and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated.
 Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or feet RVR.

<u>AIRPORT</u> LAKELAND LINDER INTL	<u>AIRPORT ID</u> KLAL	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 23	<u>ORIGINAL/AMENDMENT</u> ORIG-D	<u>CITY</u> LAKELAND	<u>STATE</u> FL
<u>AIRPORT ELEVATION</u> 142	<u>TDZE</u> 141	<u>SUPERSEDED</u> RNAV (GPS) RWY 23	<u>ORIGINAL/AMENDMENT</u> ORIG-C	<u>DATED</u> 07/20/2017	<u>MAG VAR</u> 4W
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u>	<u>REQUIRED EFFECTIVE DATE</u> ROUTINE	<u>CANCEL/SUSPEND</u>	<u>EPOCH YEAR</u> 2000

TAA

<u>FROM</u>	<u>FIX TYPE</u>	<u>TO</u>	<u>FIX TYPE</u>	<u>ALTITUDE</u>
1. 139/30 CW 319/30	NOPT	JOVMU	IF/IAF	2700
2. 319/30 CW 049/30		EHAGU	IAF	2700
3. 049/30 CW 139/30		LEZTI	IAF	2700

TERMINAL ROUTES

<u>FROM</u>	<u>FIX TYPE</u>	<u>TO</u>	<u>FIX TYPE</u>	<u>LEG TYPE</u>	<u>FO/FB</u>	<u>RNP</u>	<u>COURSE</u>	<u>DISTANCE</u>	<u>ALTITUDE</u>
EHAGU	IAF	JOVMU	NOPT	TF	FB	1.00	318.95	5.00	2700
LEZTI	IAF	JOVMU	NOPT	TF	FB	1.00	138.89	5.00	2700
JOVMU	IF/IAF	OBTOQ		TF	FB	1.00	228.92	6.10	1700
OBTOQ	FAF	RW23	MAP	TF	FO	0.30	228.88	4.68	
RW23	MAP	426 MSL		CA			228.88		
426 MSL		BIYAT		DF	FB	1.00			
BIYAT		MIREE		TF	FB	1.00	328.00	6.50	
MIREE		PLUMY		TF	FO	1.00	011.82	9.37	2000



MISSED APPROACH

MAP:
LPV: DA
LNAV/VNAV: DA
LNAV: RW23

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 2000 DIRECT BIYAT AND RIGHT TURN ON TRACK 328.00 TO MIREE THEN ON TRACK 011.82 TO PLUMY AND HOLD.

ALTERNATE MISSED APPROACH INSTRUCTIONS:

PROFILE:

1. PT	SIDE OF COURSE	OUTBOUND	FT WITHIN	MILES OF (IAF)					
2.	HOLD NE JOVMU, RT, 228.92 INBOUND, 2700 FT. IN LIEU OF PT (IAF), MAX 6000.								
3. FAC:	228.88	FAF: OBTOQ	DIST FAF TO MAP: 4.68	DIST FAF TO THLD: 4.68					
4. MIN ALT:	JOVMU 2700, OBTOQ 1700								
5. DIST TO THLD FROM OM:	MM:	IM:	150 HAT:	285 HAT: 0.74	GS ANT:				
6. MIN GP INCPT: 1700	GP ALT AT FAF : OBTOQ 1700			OM:		MM:		IM:	
7. GP ANGLE: 3.00	34:1: IS NOT CLEAR	20:1: IS CLEAR	TCH: 50.0						
8. MSA FROM:									

PBN REQUIREMENTS NOTE:

RNP APCH.

NOTES:

CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -15°C OR ABOVE 54°C.
CHART NOTE: WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE PLANT CITY ALTIMETER SETTING AND INCREASE ALL DA/MDA 20 FEET AND INCREASE LNAV CAT C/D AND CIRCLING CAT C VISIBILITY 1/8 SM.
CHART NOTE: BARO-VNAV AND VDP NA WHEN USING PLANT CITY ALTIMETER SETTING.
CHART NOTE: RWY 23 HELICOPTOR VISIBILITY REDUCTION BELOW 3/4 SM NOT AUTHORIZED.
CHART NOTE: CIRCLING NA TO RWYS 8 AND 26.

ADDITIONAL FLIGHT DATA:

CHART VDP AT 1.66 NM TO RW23*
*LNAV ONLY
WAAS CHANNEL #77805
REFERENCE PATH ID: W23A
CHART FAS OBST: 465 TOWER 280224N/0815738W.
CHART 580 TOWER 280300N/0815632W.
HOLD NE, RT, 241.00 INBOUND
LTP HAE: 17.2 M



MINIMUMS:

TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT

ALTERNATE: NA ☐ STANDARD - NA WHEN LOCAL WEATHER NOT AVAILABLE.

CATEGORY:	A			B			C			D			E		
FINAL TYPE	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA
LPV DA	426	1	285	426	1	285	426	1	285	426	1	285			
RNAV/VNAV DA	480	1 1/4	339	480	1 1/4	339	480	1 1/4	339	480	1 1/4	339			
RNAV MDA	720	1	579	720	1	579	720	1 5/8	579	720	1 3/4	579			
CIRCLING	720	1	578	720	1	578	720	1 5/8	578	720	2	578			

CHANGES - REASONS

1. CHANGED ALL REFERENCES FROM LAKELAND LINDER RGNL TO LAKELAND LINDER INTL. - AIRPORT NAME CHANGE.
2. DELETED CHART NOTE: DME/DME RNP-0.3 NA. - FAAO 8260.19H PARAGRAPH 1-1-5 F.
3. ADDED RNP APCH TO PBN REQUIREMENT NOTES - FAAO 8260.19H PARAGRAPH 8-6-8B.

PDF EDITS:

1. DELETE ORDER 8260.3, VOLUME 1, CHAPTER 2, NEW CIRCLING CRITERIA APPLIED. FORM GENERAL REMARKS.

2. CORRECT FLIGHT INSPECTION NOT REQUIRED STATEMENT TO NEW MEMO

COORDINATED WITH:

A4A ☐ ALPA ☒ AOPA ☒ APA ☐ HAI ☐ NBAA ☒ OTHER: LAL ATCT, TAMPA APP CON, ZMA, ATA

FLIGHT CHECKED BY

PROCESSED IAW AIRCRAFT OPERATIONS GROUP (AJW-33) MEMO, OCTOBER 3, 2018,
SUBJECT: FLIGHT INSPECTION REVIEW NOT REQUIRED.

DEVELOPED BY

LIAM DONAHUE

APPROVED BY

PATRICK MULQUEEN

LIAM DONAHUE

DONALD H LANIER

Digitally signed by
DONALD H LANIER
Nov 14, 2018

OFFICE

DATE

OFFICE

DATE

OFFICE

DATE

DATE

TITLE

AJV-5431

10/10/2018

AJV-5430



FAS DATA BLOCK INFORMATION

DATA FIELD	DATA
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	KLAL
RUNWAY	RW23
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W23A
LTP/FTP LATITUDE	275935.5210N
LTP/FTP LONGITUDE	0820034.0065W
LTP/FTP ELLIPSOIDAL HEIGHT	+00172
FPAP LATITUDE	275832.1800N
FPAP LONGITUDE	0820144.9800W
THRESHOLD CROSSING HEIGHT (TCH)	00050.0
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.00
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	1224
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	50.0
CRC REMAINDER	A3A40F74
ADDITIONAL PATH POINT RECORD INFORMATION	
ICAO CODE	K7
LTP ORTHOMETRIC HEIGHT	+00430
FPAP ORTHOMETRIC HEIGHT	+00430



FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD

AIRPORT	AIRPORT ID	PROCEDURE NAME	AMDT NO.	CITY	STATE	AIRPORT ELEVATION	FACILITY
LAKELAND LINDER INTL	KLAL	RNAV (GPS) RWY 23	ORIG-D	LAKELAND	FL	142	RNAV

PART A: OBSTRUCTION DATA SEGMENTS

STRAIGHT-IN AREA

FROM

139/30 CW 319/30

TO

JOVMU

RNP

DISTANCE

PAT

MAP

HAT

HMAS

OBSTRUCTION	COORDINATES	ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
1.TOWER (12-002269)	280736.00N/0813302.00W	1134	500	50	5D	1000				AT566	2700
2.TERRAIN	283315.00N/0814306.00W	335 (300)								AS1500	1800

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT
REMARKS:

LEFT BASE AREA

FROM

319/30 CW 049/30

TO

EHAGU

RNP

DISTANCE

PAT

MAP

HAT

HMAS

OBSTRUCTION	COORDINATES	ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
3.TOWER (12-003283)	274024.00N/0820634.00W	1649	500	50	5D	1000				AT51	2700
4.TERRAIN	275609.00N/0813439.00W	296 (300)								AS1500	1800

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT
REMARKS:



FINAL: LPV

FROM

OBTOQ

TO

RW23

RNP	DISTANCE	PAT	MAP	HAT	HMAS							
	3.94		DA	285								
OBSTRUCTION	COORDINATES	ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT	
12.TREE (KLALT009)	275942.61N/0820019.18W	191	50	20	2C		27.03:1			AC20	426	

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT
REMARKS:

FINAL: LNAV/VNAV

FROM

OBTOQ

TO

RW23

RNP	DISTANCE	PAT	MAP	HAT	HMAS							
	4.68		DA	339								
OBSTRUCTION	COORDINATES	ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT	
13.TREE (KLALT059)	275927.29N/0815958.68W	210	50	20	2C		PDA			AC20	480	

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT
REMARKS:



FINAL: LNAV

FROM

OBTOQ

TO

RW23

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>				
	4.68		RW23		579						
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
14.TOWER (12-003374)	280224.00N/0815738.00W	465	100	20	3B	250					720

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT
REMARKS:

HOLD-IN-LIEU OF PT

FROM

JOVMU

TO

P-5

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>				
		P-5									
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
7.TOWER (12-002751)	280507.58N/0814912.24W	649	50	20	2C	1000				AT1051	2700
10.TERRAIN	280742.00N/0815645.00W	214 (200)								AS1500	1700

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT
REMARKS:



MISSED APPROACH : LPV

FROM

DA

TO

PLUMY

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>				
							211				
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
							ASC				2000
15.TOWER (12-001581)	280126.16N/0821046.28W	419	50	20	2C	1000					1500
16.TERRAIN	275945.00N/0820942.00W	155 (200)								AS1500	1700

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT
REMARKS:

MISSED APPROACH : LNAV/VNAV

FROM

DA

TO

PLUMY

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>				
							214				
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
							ASC				2000
15.TOWER (12-001581)	280126.16N/0821046.28W	419	50	20	2C	1000					1500
16.TERRAIN	275945.00N/0820942.00W	155 (200)								AS1500	1700

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT
REMARKS:



MISSED APPROACH : LNAV

FROM

RW23

TO

PLUMY

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>				
							470				
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
							ASC				2000
15.TOWER (12-001581)	280126.16N/0821046.28W	419	50	20	2C	1000					1500
16.TERRAIN	275945.00N/0820942.00W	155 (200)								AS1500	1700

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT
REMARKS:

CIRCLING

☐ ALL CATS

☒ CAT A

☒ CAT B

☒ CAT C

☒ CAT D

☐ CAT E

☐ NOT AUTHORIZED

OBSTRUCTION	COORDINATES	RADIUS	HAA	ELEV MSL	HORZ	VERT	AC	ROC	OCS	ADJUSTMENTS	MIN ALT
CATEGORY A											
17.TANK (12-023267)	275827.38N/0820038.43W	1.30	578	288	20	3	1A	300		SI	720
CATEGORY B											
18.TOWER (12-004824)	280056.98N/0815958.49W	1.50	578	292	500	50	5D	300		SI	720
CATEGORY C											
18.TOWER (12-004824)	280056.98N/0815958.49W	1.70	578	292	500	50	5D	300		SI	720
CATEGORY D											
19.TOWER (12-005041)	280137.65N/0820055.48W	2.30	578	321	20	3	1A	300		SI	720

CIRCLING REMARKS:



<u>CENTER</u>	<u>RADIUS</u>
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MSA REMARKS:

NOTES/EXPLANATIONS FROM PROCEDURE SEGMENTS:

LNAV/VNAV ISA DEVIATION = -30

2700' ALTITUDE FOR TAA AND INITIAL SEGMENTS UTILIZED TO ALLOW FOR STANDARDIZED/COMMON ALTITUDES WITH OTHER TERMINAL PROCEDURES PER AIR TRAFFIC.



PART B: SUPPLEMENTAL DATA

COMMUNICATIONS WITH

LAL TOWER, TPA APP CON, ZMA ARTCC

<u>WX SERVICE</u>	<u>LOCATION</u>	<u>HRS OPERATION</u>	<u>ALTIMETER SOURCE</u>	<u>DISTANCE</u>	<u>SERVICE-A</u>	<u>ADJUSTMENTS</u>
AWOS	KLAL	24	KLAL	0	Y	0
<u>BACK-UP WX SERVICE</u>	<u>LOCATION</u>	<u>HRS OPERATION</u>	<u>ALTIMETER SOURCE</u>	<u>DISTANCE</u>	<u>SERVICE-A</u>	<u>ADJUSTMENTS</u>
AWOS	KPCM	24	KPCM	7.7	Y	18

WX REMARKS:

RASS PRESSURE PATTERNS THE
SAME KLAL 142, KPCM 139
RA = 17.8

<u>PRIMARY NAVAID</u>	<u>MONITOR POINT</u>	<u>HRS OPERATION</u>	<u>CAT</u>
<u>APPROACH AND RUNWAY LIGHTING SYSTEM</u>	<u>RUNWAY MARKINGS</u>	<u>RUNWAY VISUAL RANGE</u>	
RW23 - HIRL (PCL), PAPI-4L	NPI-F		
RW27 - HIRL (PCL), PAPI-4L	NPI-G		
RW05 - HIRL (PCL), PAPI-4L	PIR-G		
RW09 - MALSR (PCL), HIRL (PCL), PAPI-4R	PIR-G		

<u>GLIDESLOPE ANGLE</u>	<u>ELEV RWY THRESHOLD</u>	<u>TCH</u>	<u>ELEV GS ANTENNA</u>	<u>DISTANCE FROM RWY</u>	<u>VGSI ANGLE</u>	<u>TCH</u>
3.00	141.1	50.0			3.00	50.0

FINAL APPROACH COURSE AIMING

RUNWAY THRESHOLD	<input checked="" type="checkbox"/>	FT FROM THRESHOLD	DISPLACED THRESHOLD DISTANCE
ON CENTERLINE	<input checked="" type="checkbox"/>	FT FROM CENTERLINE	

CRITICAL TEMPERATURES

CRITICAL LOW CRITICAL HIGH ACT APT ISA

CRITICAL TEMPERATURE REMARKS:



"VISUAL PORTION OF FINAL" PENETRATIONS

Final Type	LPV, LNAV/VNAV AND LNAV	
34:1		
170 TREE (KLALT030) 275946.77N/0820029.43W (2.58)		177 TREE (KLALT026) 275946.74N/0820026.48W (4.16)
183 TREE (KLALT023) 275946.56N/0820025.08W (7.94)		171 TREE (KLALT017) 275940.79N/0820022.69W (3.64)
178 TREE (KLALT015) 275944.46N/0820022.12W (1.86)		191 TREE (KLALT009) 275942.61N/0820019.18W (13.28)
182 TREE (KLAL0041) 275944.97N/0820022.65W (5.77)		179 TREE (KLAL0039)275942.65N/0820023.29W (8.84)
175 POLE (12-002384) 275948.07N/0820027.42W (1.11)		155 BLDG (12-023262) 275942.00N/0820030.77W (0.12)

HELICOPTER 'VISUAL PORTION OF FINAL' PENETRATIONS

and/or
5280-FT "PROCEED VFR" SEGMENT LEVEL SURFACE AREA PENETRATIONS

PART C: GENERAL REMARKS:
PRECIPITOUS TERRAIN EVALUATION COMPLETED.



PART D: AIRSPACE

DOCKET #

ALL DISTANCES TO 1/100NM; ELEVATION TO NEAREST 100 FEET; COORDINATES TO 1/100 SECOND; DEG TO 1/100 DEGREE

DISTANCE FROM	THLD	TO 1000FT POINT	3.17
WIDTH OF	FINAL	SEGMENT AT 1000FT POINT	1.74
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1000FT POINT	224.88
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1000FT POINT	240
DISTANCE FROM	THLD	TO 1500FT POINT	8.78
WIDTH OF	INTERMEDIATE	SEGMENT AT 1500FT POINT	6.86
TRUE COURSE OF	INTERMEDIATE	SEGMENT CONTAINING 1500FT POINT	224.92
HIGH TERRAIN IN	INTERMEDIATE	SEGMENT CONTAINING 1500FT POINT	207

THRESHOLD
COORDINATES
(IF STR-IN)

275935.52N/0820034.01W

ARP COORDINATES

275920.10N/0820106.80W

RUNWAY APCH END
AND DIST FURTHEST
FROM ARP

RUNWAY 9 DISTANCE 0.81 NM

FAF
COORDINATES

280254.97N/0815650.31W

FIX NAME
COORDINATES

REMARKS

NO ADDITIONAL AIRSPACE REQUIRED.



<u>AIRPORT</u>	<u>AIRPORT ID</u>	<u>PROCEDURE NAME</u>	<u>AMDT NO.</u>	<u>CITY</u>	<u>STATE</u>	<u>AIRPORT ELEVATION</u>	<u>FACILITY</u>
LAKELAND LINDER INTL	KLAL	RNAV (GPS) RWY 23	ORIG-D	LAKELAND	FL	142	RNAV

PART E: PREPARED BY

<u>NAME</u>	<u>OFFICE</u>	<u>DATE</u>	<u>TITLE</u>
LIAM DONAHUE	AJV-5431	10/10/2018	AERONAUTICAL INFORMATION SPECIALIST

