

## DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

Results Summary	
Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jose G-CTR Medina
Project File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW ZETTR4 DME(lower MEAs) 20240207.tgs
Output File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW [IFPA] ZETTR4 20240207_1422 CST\KARIT_ETBOX\KDTW ZETTR4 SID KARIT ETBOX 20240207_1422 CST.pdf
Procedure Name:	ZETTR4
Software: DmeDmePlugin:	7.2.1
Date/Time:	02/07/2024 14:22 CST
Databases:	DTED LEVEL 0 MAX

Failures
No Failures

Warnings
No Warnings

Informational
No Informational

Notes For Flight Check
None

Flight Plan							
Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
KARIT	WP	N43° 43' 23.0000", W082° 08' 40.0000"	12000	VNAV	240	FLY_BY	TF
ETBOX	WP	N44° 31' 37.0000", W080° 07' 47.0000"	16000	VNAV	240	FLY_BY	TF

Flyability	
Flight Type:	SID
Selected Airport:	KDTW [IFPA]
Climb Gradient:	None assigned
Speeds:	130 at the Runway DER
	145 at the end of the VA or VI leg
	200 Ground Speed to 11000 FT
	240 Ground Speed to 18000 FT
	260 Ground Speed to 24000 FT
	340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

## DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

DME/DME	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

DME/DME (Continued)										
DMEs Used										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	BUF	N42° 55' 44.3694", W078° 38' 46.8581"	0.0 E	130	DH	IFPA	NO	Enabled	36.4 %	36.4 %
2	CRL	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	DH	IFPA	NO	Enabled	5.4 %	5.4 %
3	YXU	N43° 02' 16.4780", W081° 08' 56.1466"	8.0 W	130	H	IFPA	NO	Enabled	11.5 %	11.5 %
4	YYZ	N43° 39' 28.8735", W079° 37' 53.1527"	10.0 W	130	H	IFPA	NO	Enabled	23 %	23 %
5	YEE	N44° 34' 54.1270", W079° 47' 35.3600"	10.0 W	130	H	IFPA	NO	Enabled	25.1 %	25.1 %
6	DKK	N42° 29' 25.4400", W079° 16' 26.7700"	0.0 E	130	DH	IFPA	NO	Enabled	44.2 %	44.2 %
7	ASP	N44° 26' 56.8613", W083° 23' 39.4201"	0.0 E	130	DH	IFPA	NO	Enabled	82 %	82 %
8	FNT	N42° 58' 00.3594", W083° 44' 49.1561"	6.0 W	130	H	IFPA	NO	Enabled	39.7 %	39.7 %

Flight Check DME Selection						
Distance [NM]	Selected DMEs					Alternate
0.0	FNT	ASP	CRL			
5.4	FNT	ASP				
39.6						
43.8	DKK	ASP				
63.3	ASP	DKK	BUF			
74.5	DKK	YEE	BUF	ASP		
76.6	YYZ	YEE	DKK	BUF	ASP	
85.9	YYZ	YEE	YXU	DKK	BUF	
87.9	YYZ	YEE	YXU	BUF		
97.0	YYZ	YEE	BUF			

## DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

Inertial Drift Segments			
#	Start Location	End Location	Length [NM]
1	N44° 02' 49.7385", W081° 20' 57.9033"	N44° 04' 52.3065", W081° 15' 52.5255"	4.1999

Available DMEs by Waypoints			
Waypoint Before	Waypoint After	DME List	Suggested DMEs
KARIT	ETBOX	BUF, DKK, YXU, YEE, YYZ, CRL, FNT, ASP	

### User Data Files

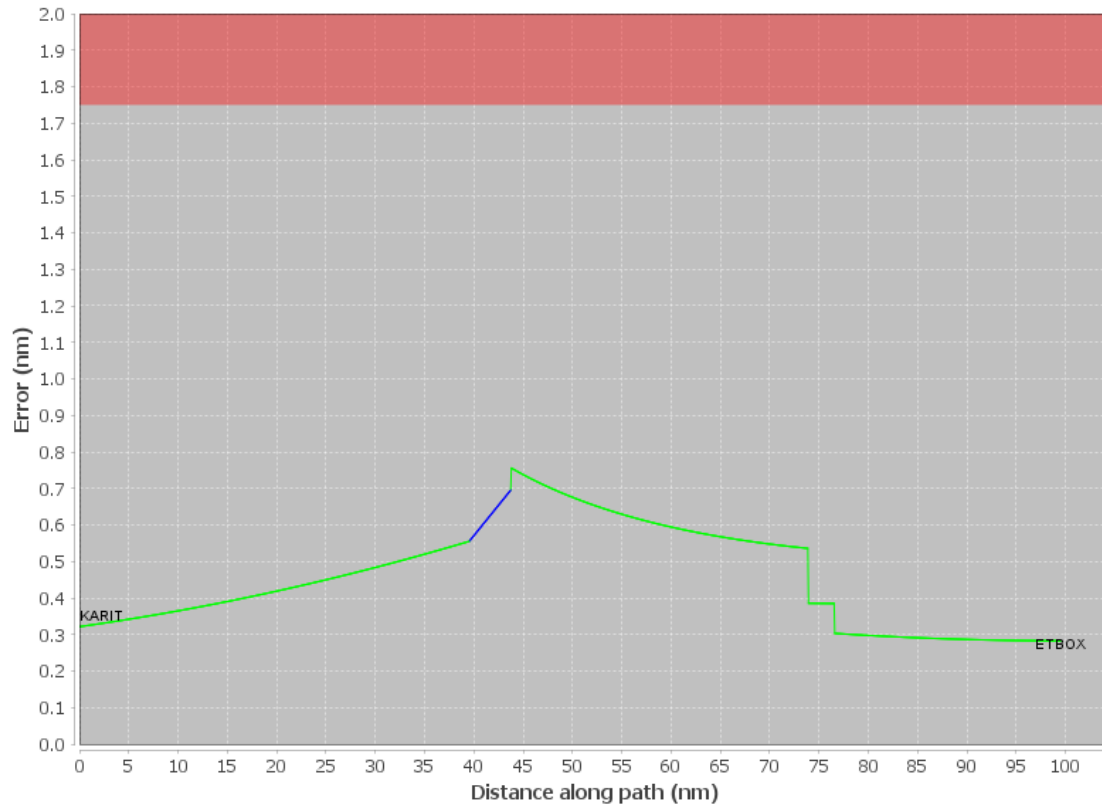
#	File Name
1	UserDMEsKDTW [IFPA] ZETTR4 SID_20230126_0745 CST.udt

### User DMEs

#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ASP FAA 941131-3 ASP [IFPA]	N44° 26' 56.8613", W083° 23' 39.4201"	-0.0 E	130	625.1	null	ASP FAA 941131-3	
ESV:		Bearing [True]: 77.0° to 171.0° Bearing [Mag]: 77.0° to 171.0°				Arc Distance: Out to 106.0 NM Altitude: 8600.0 to 20000.0 ft		
2	FNT FAA 691869-026 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-026	
ESV:		Bearing [True]: 68.0° to 91.0° Bearing [Mag]: 74.0° to 97.0°				Arc Distance: Out to 70.0 NM Altitude: 3000.0 to 15300.0 ft		
3	DKK FAA 712628-011 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-011	
ESV:		Bearing [True]: 290.0° to 20.0° Bearing [Mag]: 290.0° to 20.0°				Arc Distance: Out to 113.0 NM Altitude: 9500.0 to 16000.0 ft		
4	JFN FAA 704201-29 JFN [IFPA]	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	896.3	null	JFN FAA 704201-29	
ESV:		Bearing [True]: 354.0° to 7.0° Bearing [Mag]: 354.0° to 7.0°				Arc Distance: Out to 100.0 NM Altitude: 9000.0 to 13000.0 ft		
5	DKK FAA 712628-8 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-8	
ESV:		Bearing [True]: 316.0° to 335.0° Bearing [Mag]: 316.0° to 335.0°				Arc Distance: Out to 133.0 NM Altitude: 13700.0 to 45000.0 ft		
6	SVM FAA 698158-031 SVM [IFPA]	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	955.6	114.3	SVM FAA 698158-031	
ESV:		Bearing [True]: 41.0° to 62.0° Bearing [Mag]: 44.0° to 65.0°				Arc Distance: Out to 80.0 NM Altitude: 4000.0 to 19000.0 ft		
7	APN FAA 701321-11 APN [IFPA]	N45° 04' 58.0031", W083° 33' 25.2126"	7.0 W	40	675.7	108.8	APN FAA 701321-11	
ESV:		Bearing [True]: 101.0° to 141.0° Bearing [Mag]: 108.0° to 148.0°				Arc Distance: Out to 104.0 NM Altitude: 11900.0 to 14000.0 ft		
8	CRL FAA 701373-034 CRL [IFPA]	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	628.4	115.7	CRL FAA 701373-034	
ESV:		Bearing [True]: 24.0° to 58.0° Bearing [Mag]: 27.0° to 61.0°				Arc Distance: Out to 116.0 NM Altitude: 9000.0 to 16000.0 ft		
9	FNT FAA 691869-18 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-18	
ESV:		Bearing [True]: 44.0° to 62.0° Bearing [Mag]: 50.0° to 68.0°				Arc Distance: Out to 123.0 NM Altitude: 11900.0 to 20000.0 ft		
10	MBS FAA 704119-29 MBS [IFPA]	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	663	112.9	MBS FAA 704119-29	
ESV:		Bearing [True]: 105.0° to 116.0° Bearing [Mag]: 108.0° to 119.0°				Arc Distance: Out to 90.0 NM Altitude: 7000.0 to 14500.0 ft		

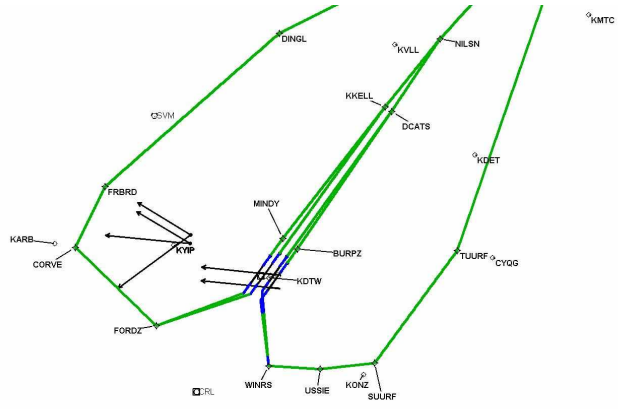
# DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

## DME Error



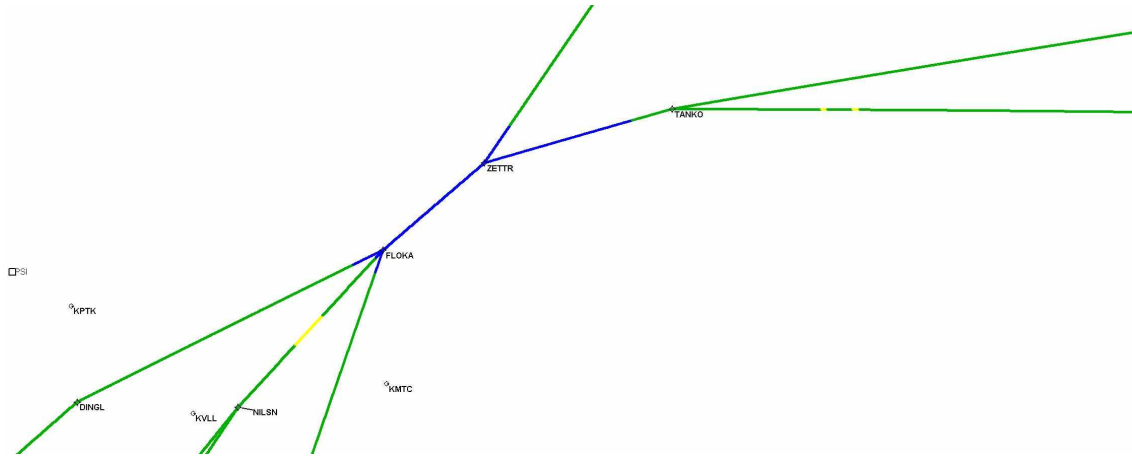
# DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

Graphic Depiction 1



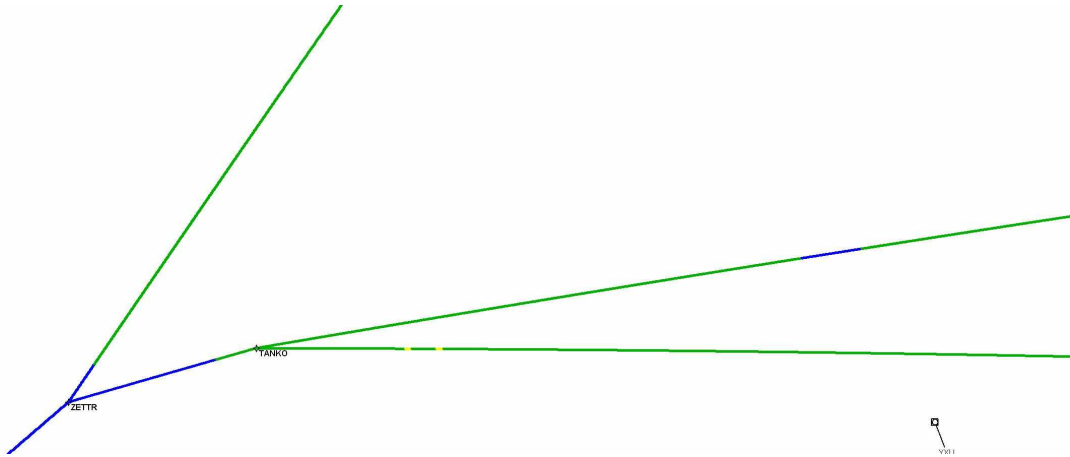
# DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

Graphic Depiction 2



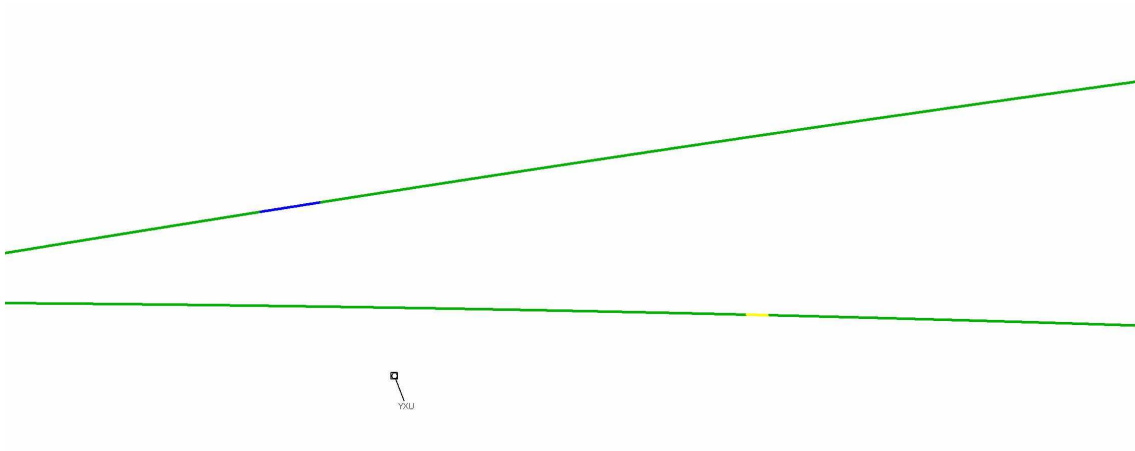
# DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

Graphic Depiction 3



# DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

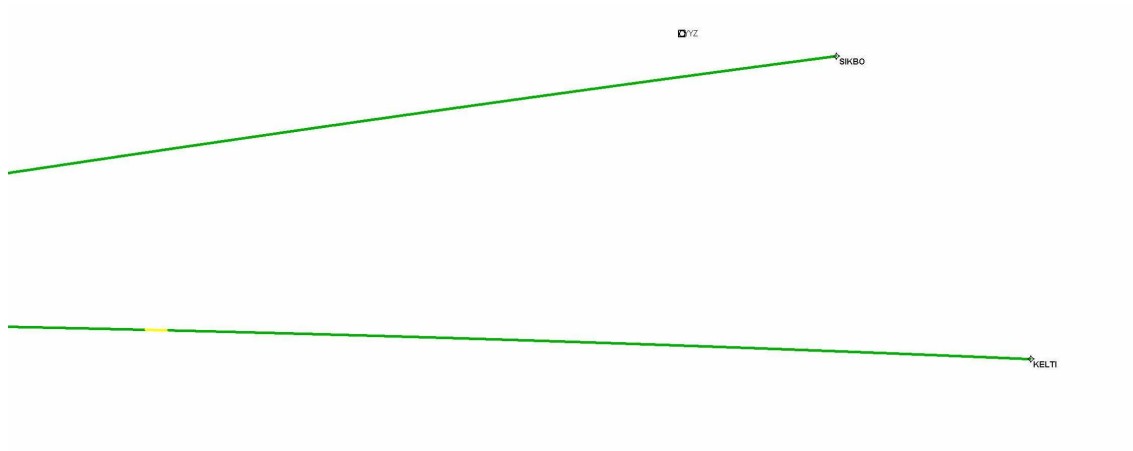
Graphic Depiction 4





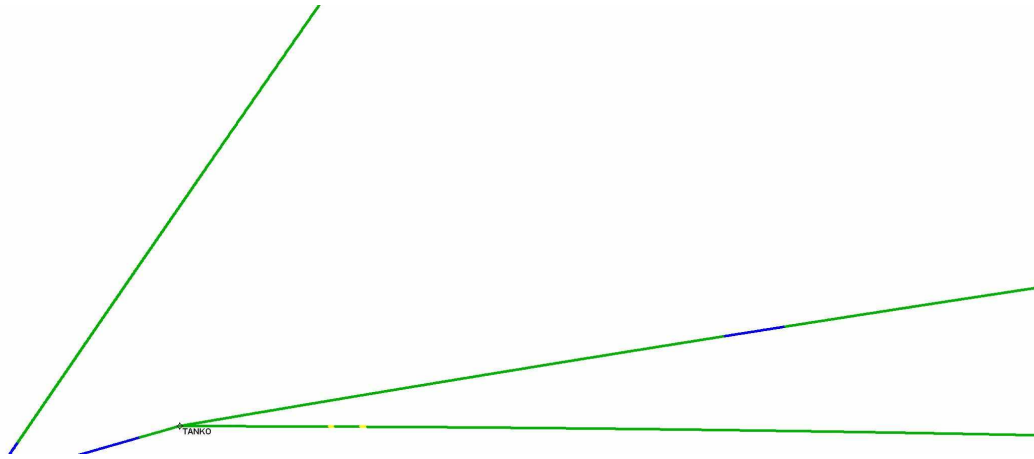
# DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

Graphic Depiction 5



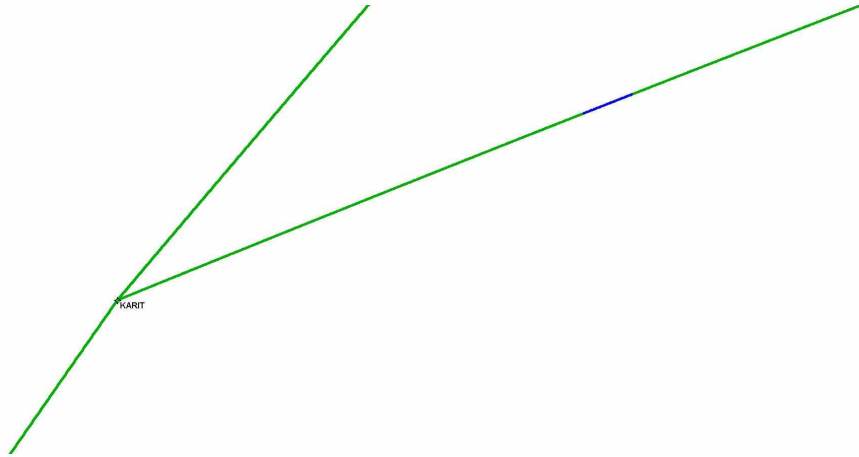
# DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

Graphic Depiction 6



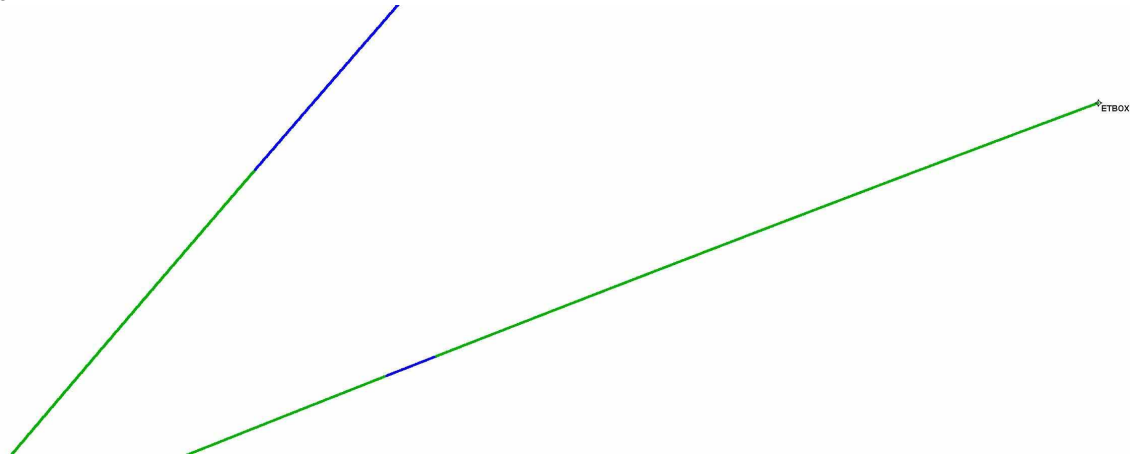
# DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

Graphic Depiction 7



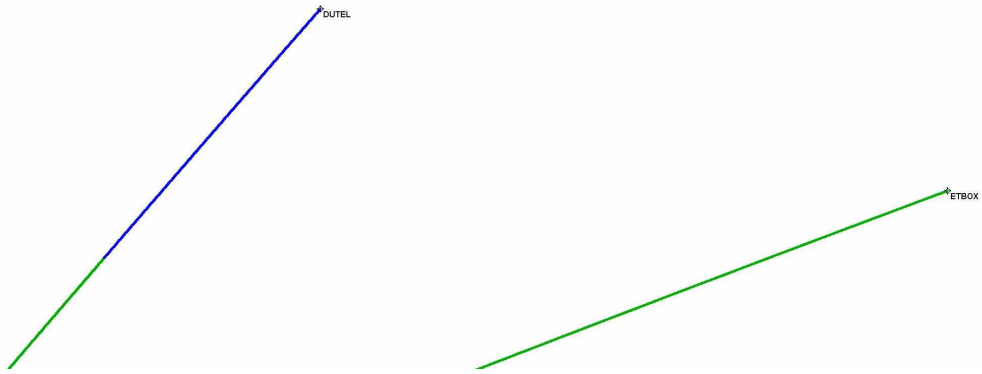
# DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

Graphic Depiction 8



# DME DME Assessment Results for ZETTR4 path KARIT\_ETBOX

Graphic Depiction 9



## DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS

### Results Summary

Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jose G-CTR Medina
Project File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW ZETTR4 DME(lower MEAs) 20240207.tgs
Output File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW [IFPA] ZETTR4 20240207_1422 CST\KDTW-RW03L- DER_DCATS\KDTW ZETTR4 SID RW03L DCATS 20240207_1422 CST.pdf
Procedure Name:	ZETTR4
Software: DmeDmePlugin:	7.2.1
Date/Time:	02/07/2024 14:22 CST
Databases:	DTED LEVEL 0 MAX

### Failures

No Failures

### Warnings

No Warnings

### Informational

No Informational

### Notes For Flight Check

None

### Flight Plan

Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
KDTW:RW03L:DER	WP	N42° 13' 41.8586", W083° 20' 10.1070"	631.4	VNAV	130	FLY_OVER	TF
DCATS	WP	N42° 27' 12.0000", W083° 10' 09.1700"	4000	VNAV	200	FLY_BY	TF

Climb Gradient:  
500.0 ft/NM up to 1146.0 ft MSL  
200.0 ft/NM

### Flyability

Flight Type:	SID
Selected Airport:	KDTW [IFPA]
Climb Gradient:	500.0 ft/NM up to 1146.0 ft MSL 200.0 ft/NM
Speeds:	130 at the Runway DER
	145 at the end of the VA or VI leg
	200 Ground Speed to 11000 FT
	240 Ground Speed to 18000 FT
	260 Ground Speed to 24000 FT
	340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

**DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS**

<b>DME/DME</b>	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

<b>DME/DME (Continued)</b>										
<b>DMEs Used</b>										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	PSI	N42° 42' 03.0947", W083° 31' 57.9835"	-0.0 E	40	L	IFPA	NO	Enabled	74.7 %	75.8 %
2	DXO	N42° 12' 47.2904", W083° 21' 59.9878"	6.0 W	130	H	IFPA	NO	Enabled	81.4 %	82.4 %
3	CRL	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	DH	IFPA	NO	Enabled	92.7 %	93.3 %
4	SVM	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	L	IFPA	NO	Enabled	50.7 %	52.4 %

<b>Flight Check DME Selection</b>						
Distance [NM]	Selected DMEs					Alternate
0.0						
1.0	CRL	SVM				
1.6	SVM	DXO	CRL			
3.7	CRL	SVM	DXO	PSI		
5.8	PSI	CRL				
6.9	PSI	DXO	CRL			
12.0	PSI	DXO	CRL	SVM		

<b>Inertial Drift Segments</b>			
#	Start Location	End Location	Length [NM]
1	N42° 13' 43.7266", W083° 20' 08.7298"	N42° 14' 36.0301", W083° 19' 30.1576"	0.9937

<b>Available DMEs by Waypoints</b>			
Waypoint Before	Waypoint After	DME List	Suggested DMEs
KDTW:RW03L:DER	DCATS	PSI, DXO, SVM, CRL	

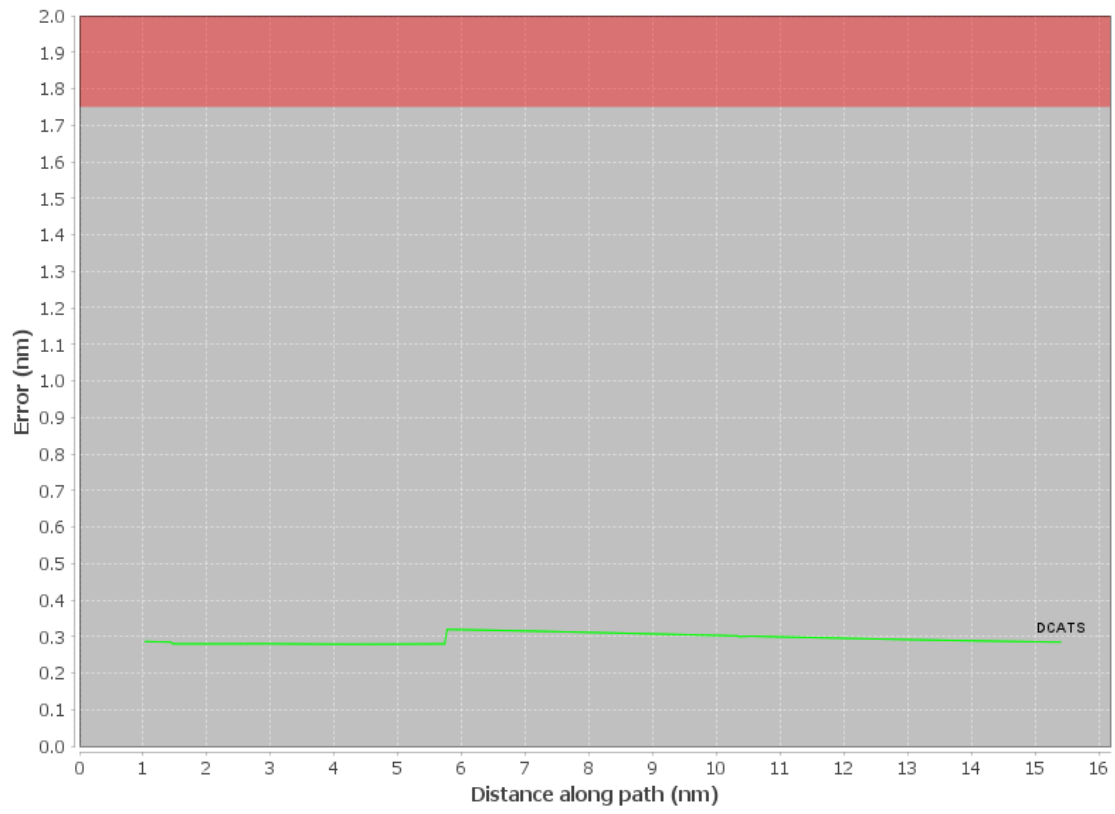
**DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS**

<b>User Data Files</b>								
#	File Name							
1	UserDMEsKDTW [IFPA] ZETTR4 SID_20230126_0745 CST.udt							
<b>User DMEs</b>								
#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ASP FAA 941131-3 ASP [IFPA]	N44° 26' 56.8613", W083° 23' 39.4201"	-0.0 E	130	625.1	null	ASP FAA 941131-3	
	ESV:	Bearing [True]: 77.0° to 171.0° Bearing [Mag]: 77.0° to 171.0°				Arc Distance: Out to 106.0 NM Altitude: 8600.0 to 20000.0 ft		
2	FNT FAA 691869-026 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-026	
	ESV:	Bearing [True]: 68.0° to 91.0° Bearing [Mag]: 74.0° to 97.0°				Arc Distance: Out to 70.0 NM Altitude: 3000.0 to 15300.0 ft		
3	DKK FAA 712628-011 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-011	
	ESV:	Bearing [True]: 290.0° to 20.0° Bearing [Mag]: 290.0° to 20.0°				Arc Distance: Out to 113.0 NM Altitude: 9500.0 to 16000.0 ft		
4	JFN FAA 704201-29 JFN [IFPA]	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	896.3	null	JFN FAA 704201-29	
	ESV:	Bearing [True]: 354.0° to 7.0° Bearing [Mag]: 354.0° to 7.0°				Arc Distance: Out to 100.0 NM Altitude: 9000.0 to 13000.0 ft		
5	DKK FAA 712628-8 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-8	
	ESV:	Bearing [True]: 316.0° to 335.0° Bearing [Mag]: 316.0° to 335.0°				Arc Distance: Out to 133.0 NM Altitude: 13700.0 to 45000.0 ft		
6	SVM FAA 698158-031 SVM [IFPA]	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	955.6	114.3	SVM FAA 698158-031	
	ESV:	Bearing [True]: 41.0° to 62.0° Bearing [Mag]: 44.0° to 65.0°				Arc Distance: Out to 80.0 NM Altitude: 4000.0 to 19000.0 ft		
7	APN FAA 701321-11 APN [IFPA]	N45° 04' 58.0031", W083° 33' 25.2126"	7.0 W	40	675.7	108.8	APN FAA 701321-11	
	ESV:	Bearing [True]: 101.0° to 141.0° Bearing [Mag]: 108.0° to 148.0°				Arc Distance: Out to 104.0 NM Altitude: 11900.0 to 14000.0 ft		
8	CRL FAA 701373-034 CRL [IFPA]	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	628.4	115.7	CRL FAA 701373-034	
	ESV:	Bearing [True]: 24.0° to 58.0° Bearing [Mag]: 27.0° to 61.0°				Arc Distance: Out to 116.0 NM Altitude: 9000.0 to 16000.0 ft		
9	FNT FAA 691869-18 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-18	
	ESV:	Bearing [True]: 44.0° to 62.0° Bearing [Mag]: 50.0° to 68.0°				Arc Distance: Out to 123.0 NM Altitude: 11900.0 to 20000.0 ft		
10	MBS FAA 704119-29 MBS [IFPA]	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	663	112.9	MBS FAA 704119-29	
	ESV:	Bearing [True]: 105.0° to 116.0° Bearing [Mag]: 108.0° to 119.0°				Arc Distance: Out to 90.0 NM Altitude: 7000.0 to 14500.0 ft		



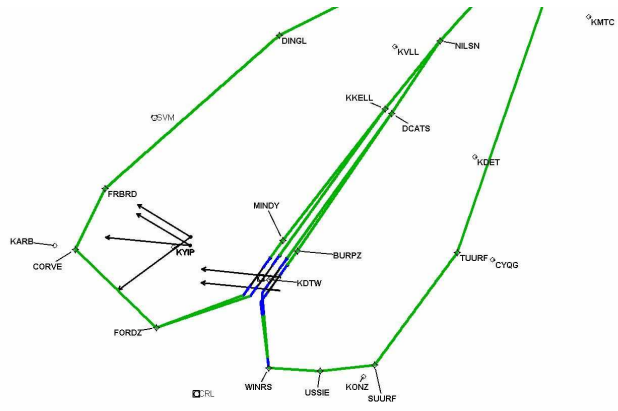
# DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS

## DME Error



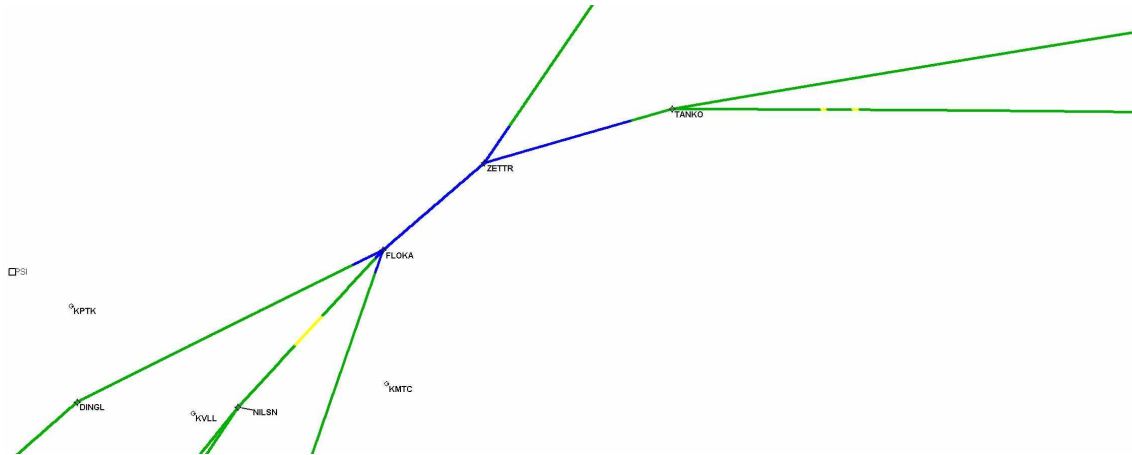
# DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS

Graphic Depiction 1



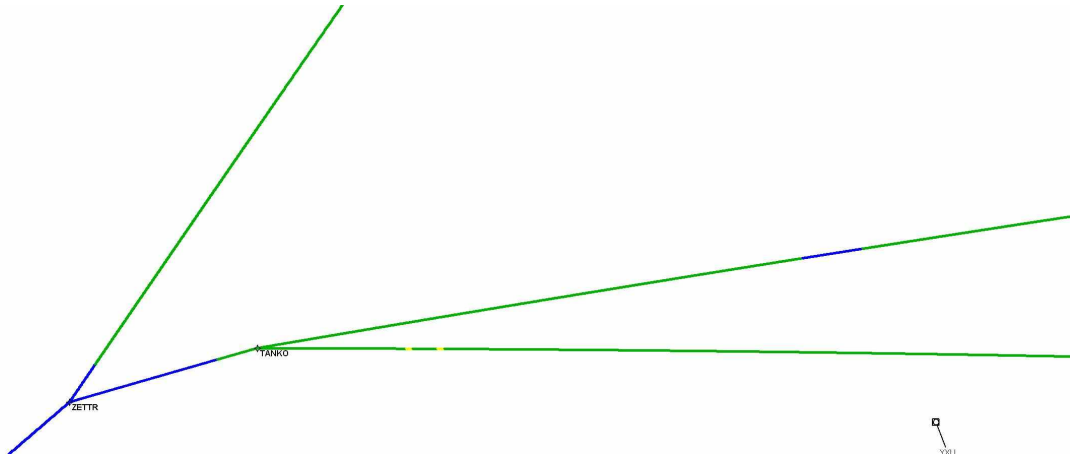
# DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS

Graphic Depiction 2



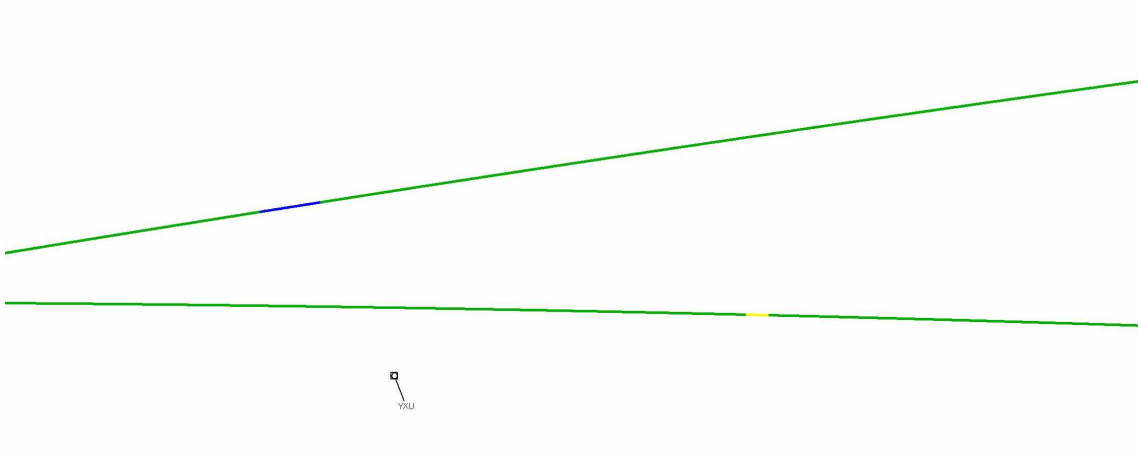
# DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS

Graphic Depiction 3



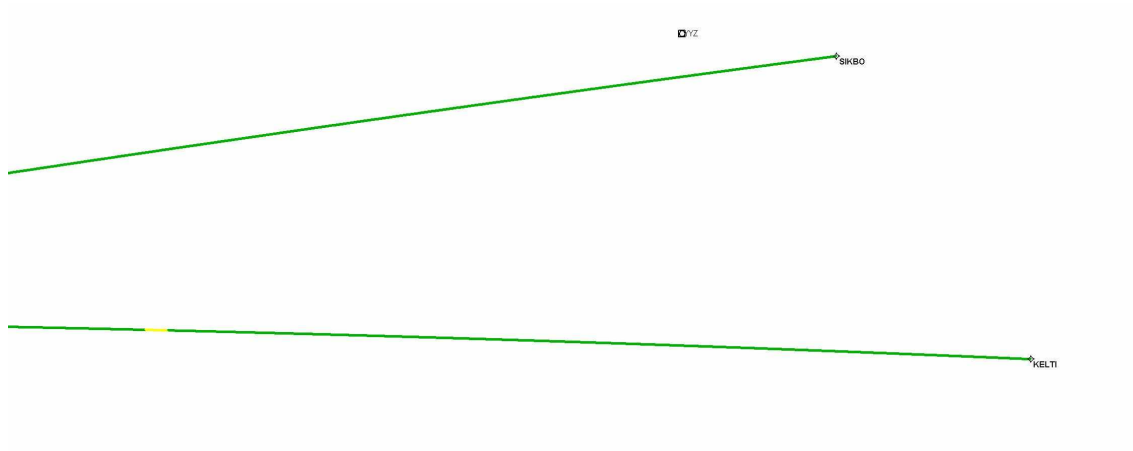
# DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS

Graphic Depiction 4



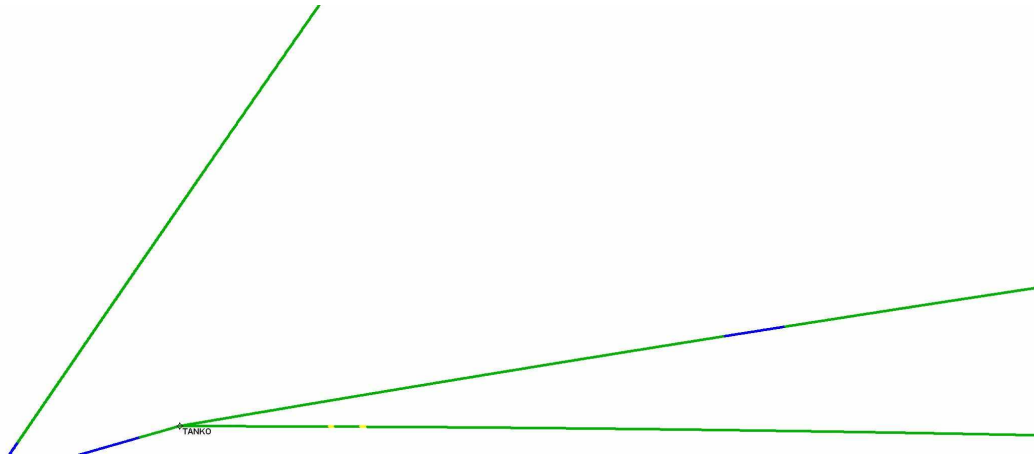
# DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS

Graphic Depiction 5



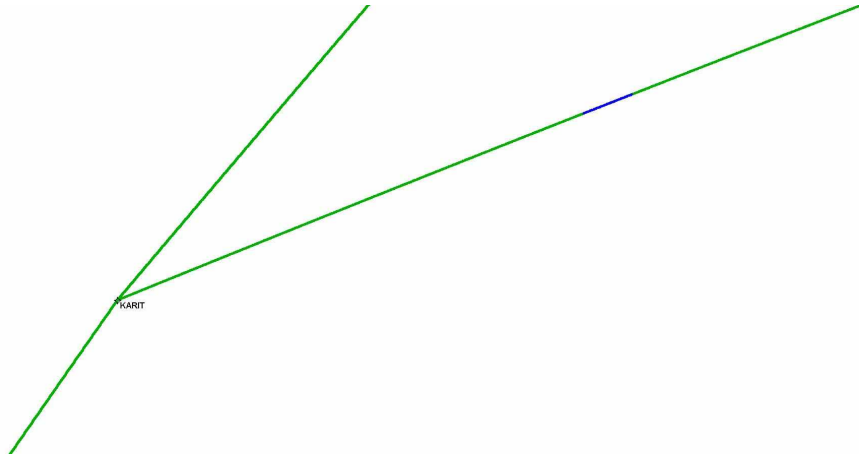
# DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS

Graphic Depiction 6



# DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS

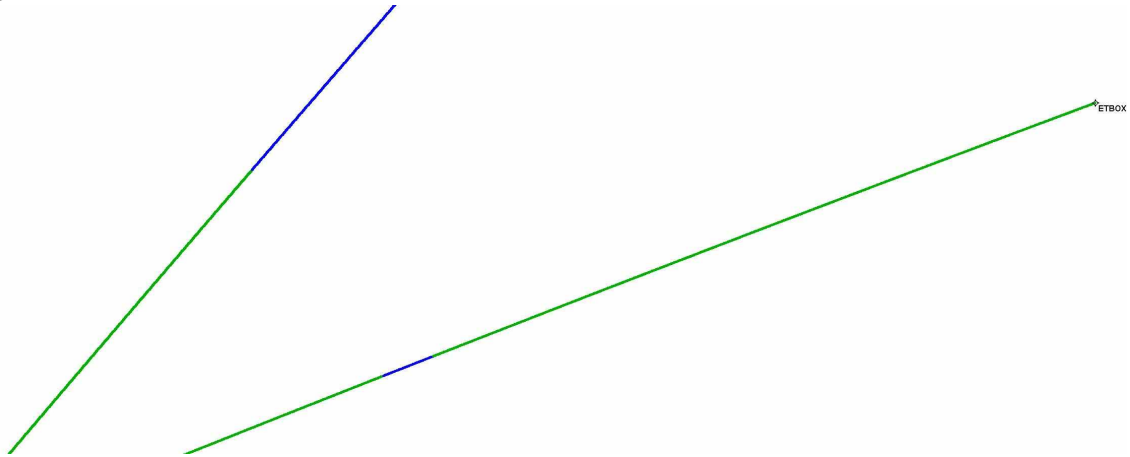
Graphic Depiction 7





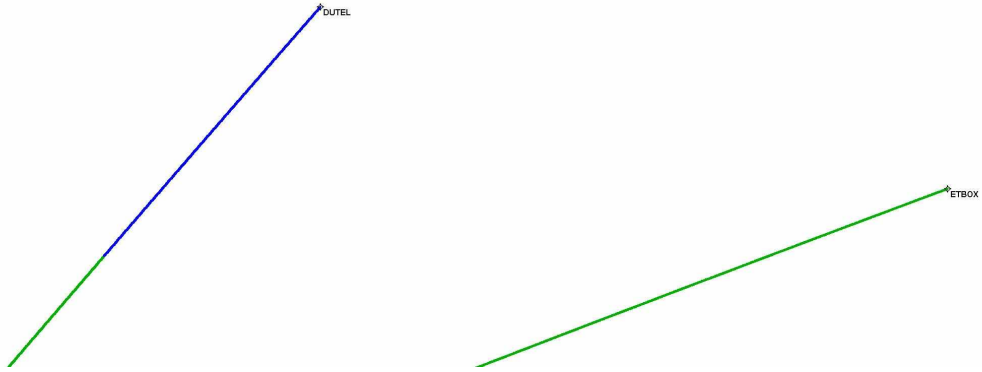
# DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS

Graphic Depiction 8



# DME DME Assessment Results for ZETTR4 path KDTW:RW03L:DER\_DCATS

Graphic Depiction 9



## DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA

### Results Summary

Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jose G-CTR Medina
Project File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW ZETTR4 DME(lower MEAs) 20240207.tgs
Output File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW [IFPA] ZETTR4 20240207_1422 CST\KDTW-RW03R- DER_FLOKA\KDTW ZETTR4 SID RW03R FLOKA 20240207_1422 CST.pdf
Procedure Name:	ZETTR4
Software: DmeDmePlugin:	7.2.1
Date/Time:	02/07/2024 14:22 CST
Databases:	DTED LEVEL 0 MAX

### Failures

No Failures

### Warnings

No Warnings

### Informational

No Informational

### Notes For Flight Check

None

### Flight Plan

Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
KDTW:RW03R:DER	WP	N42° 13' 10.8552", W083° 20' 02.6517"	631.8	VNAV	130	FLY_OVER	TF
BURPZ	WP	N42° 15' 17.6900", W083° 18' 29.1000"	1422.3	VNAV	200	FLY_BY	TF
DCATS	WP	N42° 27' 12.0000", W083° 10' 09.1700"	4000	VNAV	200	FLY_BY	TF
NILSN	WP	N42° 33' 28.6500", W083° 05' 52.6600"	4000	VNAV	200	FLY_BY	TF
FLOKA	WP	N42° 47' 27.1300", W082° 52' 18.9200"	3100	VNAV	200	FLY_BY	TF

Climb Gradient:  
500.0 ft/NM up to 1146.0 ft MSL  
200.0 ft/NM

### Flyability

Flight Type:	SID
Selected Airport:	KDTW [IFPA]
Climb Gradient:	500.0 ft/NM up to 1146.0 ft MSL 200.0 ft/NM
Speeds:	130 at the Runway DER 145 at the end of the VA or VI leg 200 Ground Speed to 11000 FT 240 Ground Speed to 18000 FT 260 Ground Speed to 24000 FT 340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

**DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA**

<b>DME/DME</b>	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

<b>DME/DME (Continued)</b>										
<b>DMEs Used</b>										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	PSI	N42° 42' 03.0947", W083° 31' 57.9835"	-0.0 E	40	L	IFPA	NO	Enabled	86.3 %	87.9 %
2	DXO	N42° 12' 47.2904", W083° 21' 59.9878"	6.0 W	130	H	IFPA	NO	Enabled	88.4 %	89.9 %
3	CRL	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	DH	IFPA	NO	Enabled	93.8 %	94.9 %
4	SVM	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	L	IFPA	NO	Enabled	66.3 %	66.9 %
5	FNT	N42° 58' 00.3594", W083° 44' 49.1561"	6.0 W	130	H	IFPA	NO	Enabled	7.8 %	7.9 %

<b>Flight Check DME Selection</b>						
Distance [NM]	Selected DMEs					Alternate
0.0						
1.0	CRL	SVM				
1.8	CRL	SVM	DXO			
3.9	CRL	SVM	DXO	PSI		
6.2	PSI	CRL				
7.0	PSI	DXO	CRL			
12.4	PSI	DXO	CRL	SVM		
29.7	DXO	FNT	CRL	PSI	SVM	
32.9	PSI	CRL	DXO	SVM		
34.0	PSI	CRL	DXO			
38.6	PSI	CRL				
39.1						

<b>Inertial Drift Segments</b>			
#	Start Location	End Location	Length [NM]
1	N42° 13' 12.7219", W083° 20' 01.2758"	N42° 14' 04.9862", W083° 19' 22.7426"	0.9929
2	N42° 46' 41.1914", W082° 53' 03.7023"	N42° 47' 27.1300", W082° 52' 18.9200"	0.9423

## DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA

### Available DMEs by Waypoints

Waypoint Before	Waypoint After	DME List	Suggested DMEs
KDTW:RW03R:DER	BURPZ	DXO, SVM, CRL	
BURPZ	DCATS	PSI, DXO, SVM, CRL	
DCATS	NILSN	PSI, DXO, SVM, CRL	
NILSN	FLOKA	PSI, DXO, SVM, CRL, FNT	

### User Data Files

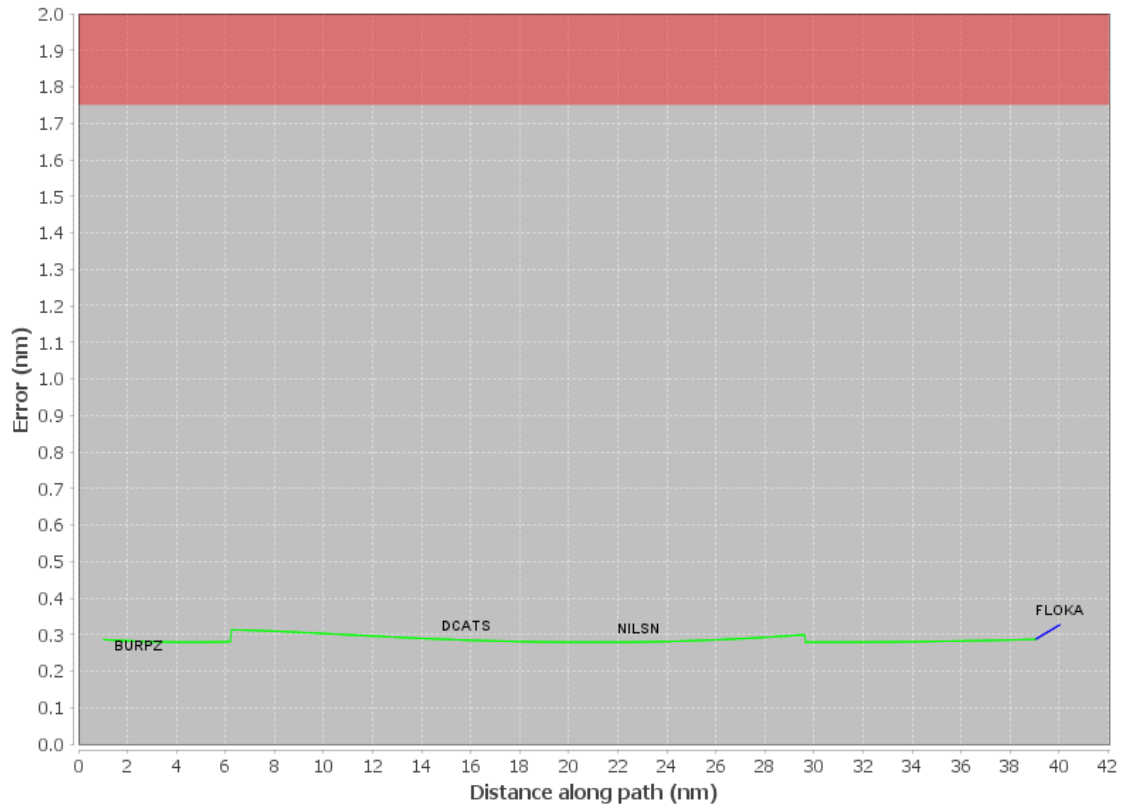
#	File Name
1	UserDMEsKDTW [IFPA] ZETTR4 SID_20230126_0745 CST.udt

### User DMEs

#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ASP FAA 941131-3 ASP [IFPA]	N44° 26' 56.8613", W083° 23' 39.4201"	-0.0 E	130	625.1	null	ASP FAA 941131-3	
	ESV:	Bearing [True]: 77.0° to 171.0° Bearing [Mag]: 77.0° to 171.0°				Arc Distance: Out to 106.0 NM Altitude: 8600.0 to 20000.0 ft		
2	FNT FAA 691869-026 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-026	
	ESV:	Bearing [True]: 68.0° to 91.0° Bearing [Mag]: 74.0° to 97.0°				Arc Distance: Out to 70.0 NM Altitude: 3000.0 to 15300.0 ft		
3	DKK FAA 712628-011 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-011	
	ESV:	Bearing [True]: 290.0° to 20.0° Bearing [Mag]: 290.0° to 20.0°				Arc Distance: Out to 113.0 NM Altitude: 9500.0 to 16000.0 ft		
4	JFN FAA 704201-29 JFN [IFPA]	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	896.3	null	JFN FAA 704201-29	
	ESV:	Bearing [True]: 354.0° to 7.0° Bearing [Mag]: 354.0° to 7.0°				Arc Distance: Out to 100.0 NM Altitude: 9000.0 to 13000.0 ft		
5	DKK FAA 712628-8 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-8	
	ESV:	Bearing [True]: 316.0° to 335.0° Bearing [Mag]: 316.0° to 335.0°				Arc Distance: Out to 133.0 NM Altitude: 13700.0 to 45000.0 ft		
6	SVM FAA 698158-031 SVM [IFPA]	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	955.6	114.3	SVM FAA 698158-031	
	ESV:	Bearing [True]: 41.0° to 62.0° Bearing [Mag]: 44.0° to 65.0°				Arc Distance: Out to 80.0 NM Altitude: 4000.0 to 19000.0 ft		
7	APN FAA 701321-11 APN [IFPA]	N45° 04' 58.0031", W083° 33' 25.2126"	7.0 W	40	675.7	108.8	APN FAA 701321-11	
	ESV:	Bearing [True]: 101.0° to 141.0° Bearing [Mag]: 108.0° to 148.0°				Arc Distance: Out to 104.0 NM Altitude: 11900.0 to 14000.0 ft		
8	CRL FAA 701373-034 CRL [IFPA]	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	628.4	115.7	CRL FAA 701373-034	
	ESV:	Bearing [True]: 24.0° to 58.0° Bearing [Mag]: 27.0° to 61.0°				Arc Distance: Out to 116.0 NM Altitude: 9000.0 to 16000.0 ft		
9	FNT FAA 691869-18 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-18	
	ESV:	Bearing [True]: 44.0° to 62.0° Bearing [Mag]: 50.0° to 68.0°				Arc Distance: Out to 123.0 NM Altitude: 11900.0 to 20000.0 ft		
10	MBS FAA 704119-29 MBS [IFPA]	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	663	112.9	MBS FAA 704119-29	
	ESV:	Bearing [True]: 105.0° to 116.0° Bearing [Mag]: 108.0° to 119.0°				Arc Distance: Out to 90.0 NM Altitude: 7000.0 to 14500.0 ft		

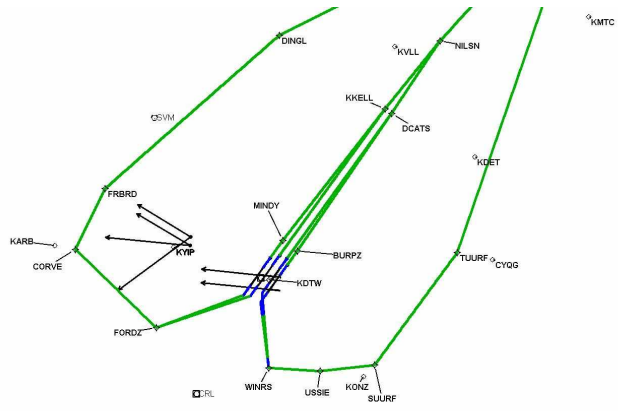
# DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA

## DME Error



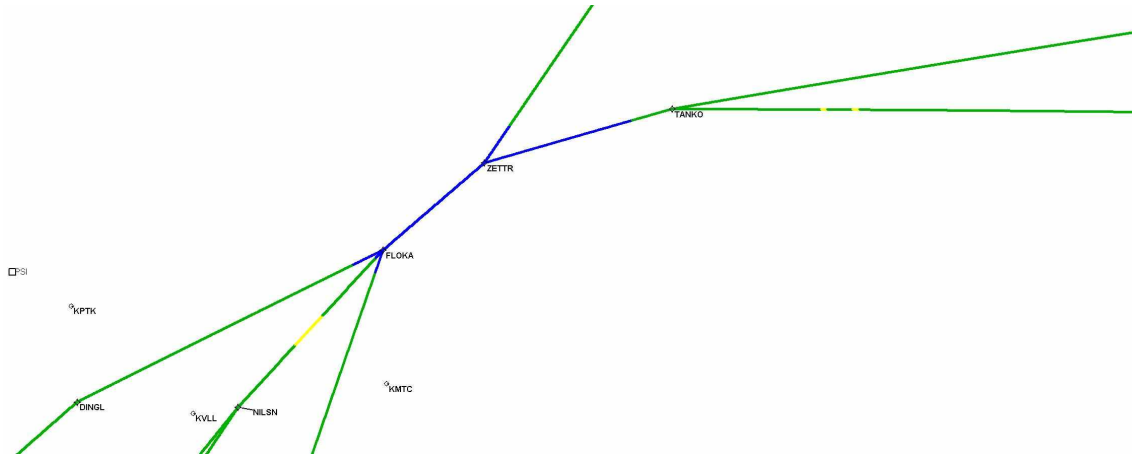
# DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA

Graphic Depiction 1



# DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA

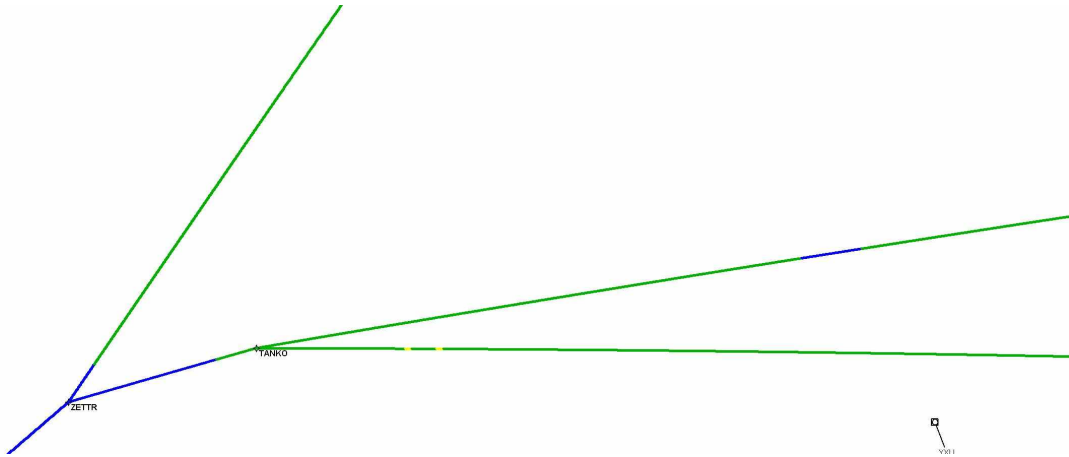
Graphic Depiction 2





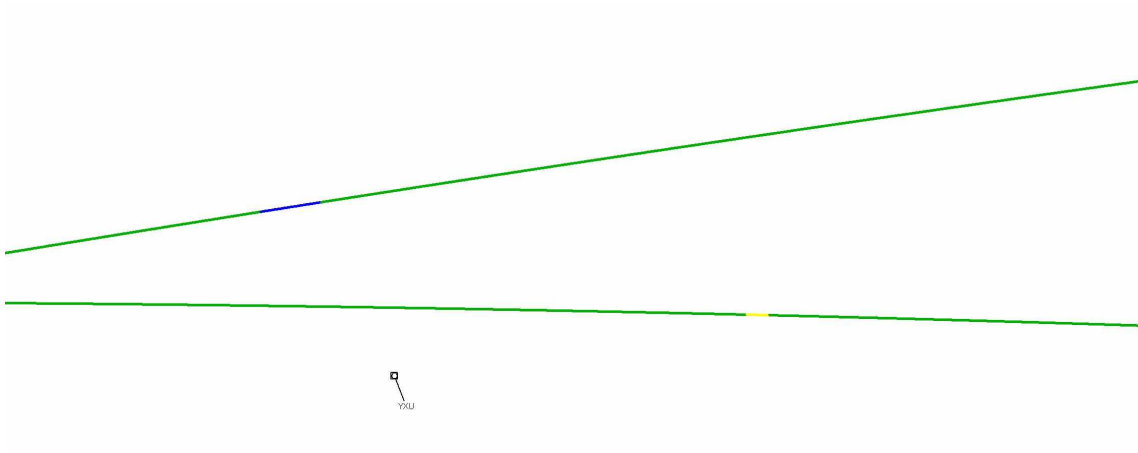
# DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA

Graphic Depiction 3



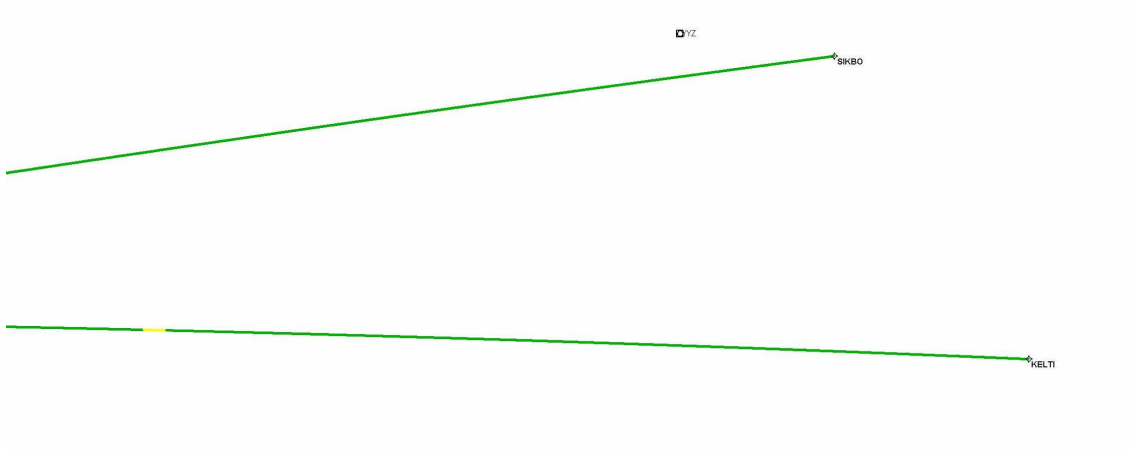
# DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA

Graphic Depiction 4



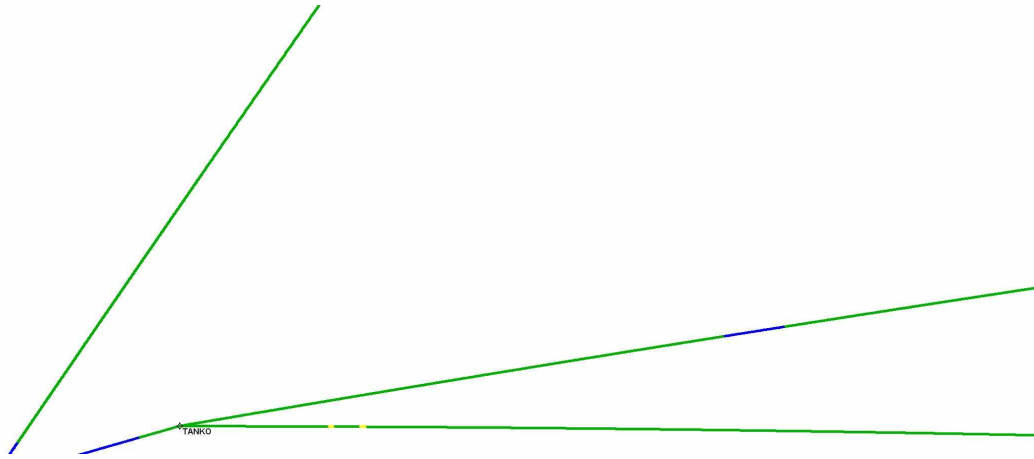
# DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA

Graphic Depiction 5



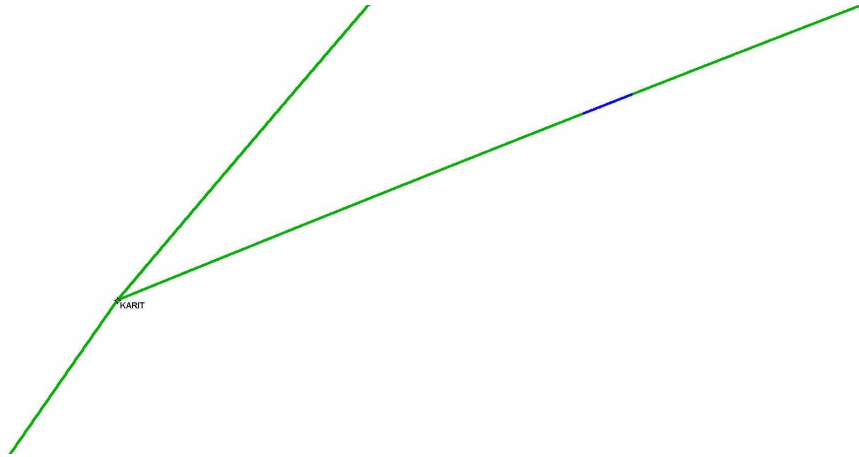
# DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA

Graphic Depiction 6



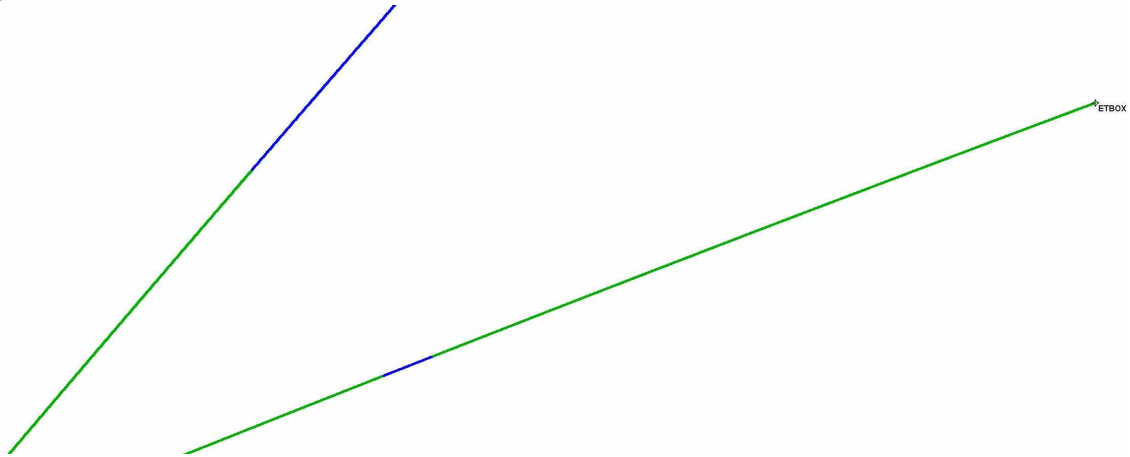
# DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA

Graphic Depiction 7



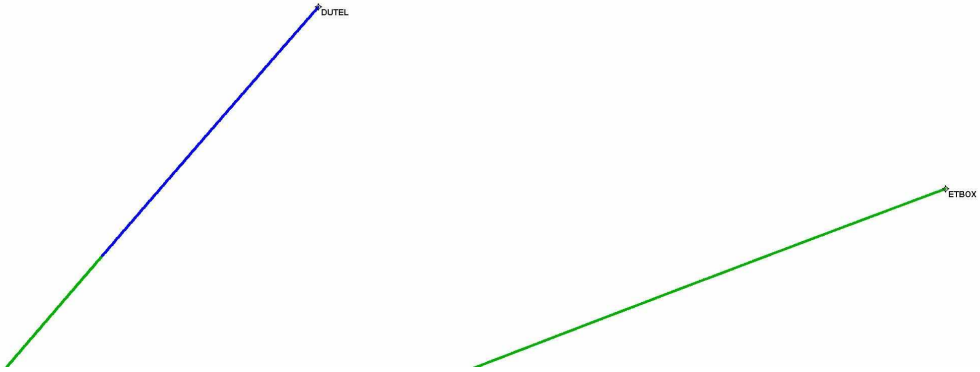
# DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA

Graphic Depiction 8



# DME DME Assessment Results for ZETTR4 path KDTW:RW03R:DER\_FLOKA

Graphic Depiction 9



## DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN

Results Summary	
Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jose G-CTR Medina
Project File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW ZETTR4 DME(lower MEAs) 20240207.tgs
Output File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW [IFPA] ZETTR4 20240207_1422 CST\KDTW-RW04L- DER_NILSN\KDTW ZETTR4 SID RW04L NILSN 20240207_1422 CST.pdf
Procedure Name:	ZETTR4
Software: DmeDmePlugin:	7.2.1
Date/Time:	02/07/2024 14:22 CST
Databases:	DTED LEVEL 0 MAX

Failures
No Failures

Warnings
No Warnings

Informational
No Informational

Notes For Flight Check
None

Flight Plan							
Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
KDTW:RW04L:DER	WP	N42° 13' 34.4821", W083° 21' 58.6115"	642.1	VNAV	130	FLY_OVER	TF
MINDY	WP	N42° 15' 59.4700", W083° 20' 11.7800"	1495.2	VNAV	200	FLY_BY	TF
KKELL	WP	N42° 27' 30.4800", W083° 10' 53.3400"	4000	VNAV	200	FLY_BY	TF
NILSN	WP	N42° 33' 28.6500", W083° 05' 52.6600"	4000	VNAV	200	FLY_BY	TF
Climb Gradient: 500.0 ft/NM up to 1146.0 ft MSL 200.0 ft/NM							

Flyability	
Flight Type:	SID
Selected Airport:	KDTW [IFPA]
Climb Gradient:	500.0 ft/NM up to 1146.0 ft MSL 200.0 ft/NM
Speeds:	130 at the Runway DER
	145 at the end of the VA or VI leg
	200 Ground Speed to 11000 FT
	240 Ground Speed to 18000 FT
	260 Ground Speed to 24000 FT
	340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan



**DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN**

<b>DME/DME</b>	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

<b>DME/DME (Continued)</b>										
<b>DMEs Used</b>										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	PSI	N42° 42' 03.0947", W083° 31' 57.9835"	-0.0 E	40	L	IFPA	NO	Enabled	81.5 %	84.3 %
2	DXO	N42° 12' 47.2904", W083° 21' 59.9878"	6.0 W	130	H	IFPA	NO	Enabled	76.7 %	79.3 %
3	CRL	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	DH	IFPA	NO	Enabled	94 %	95.8 %
4	SVM	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	L	IFPA	NO	Enabled	70.7 %	71.7 %

<b>Flight Check DME Selection</b>					
Distance [NM]	Selected DMEs				Alternate
0.0					
1.0	CRL	SVM			
2.9	SVM	DXO	CRL		
3.6	SVM	DXO	CRL	PSI	
7.1	PSI	CRL			
9.0	PSI	DXO	CRL		
12.6	PSI	DXO	CRL	SVM	

<b>Inertial Drift Segments</b>			
#	Start Location	End Location	Length [NM]
1	N42° 13' 36.3771", W083° 21' 57.2160"	N42° 14' 25.6460", W083° 21' 20.9240"	0.9358

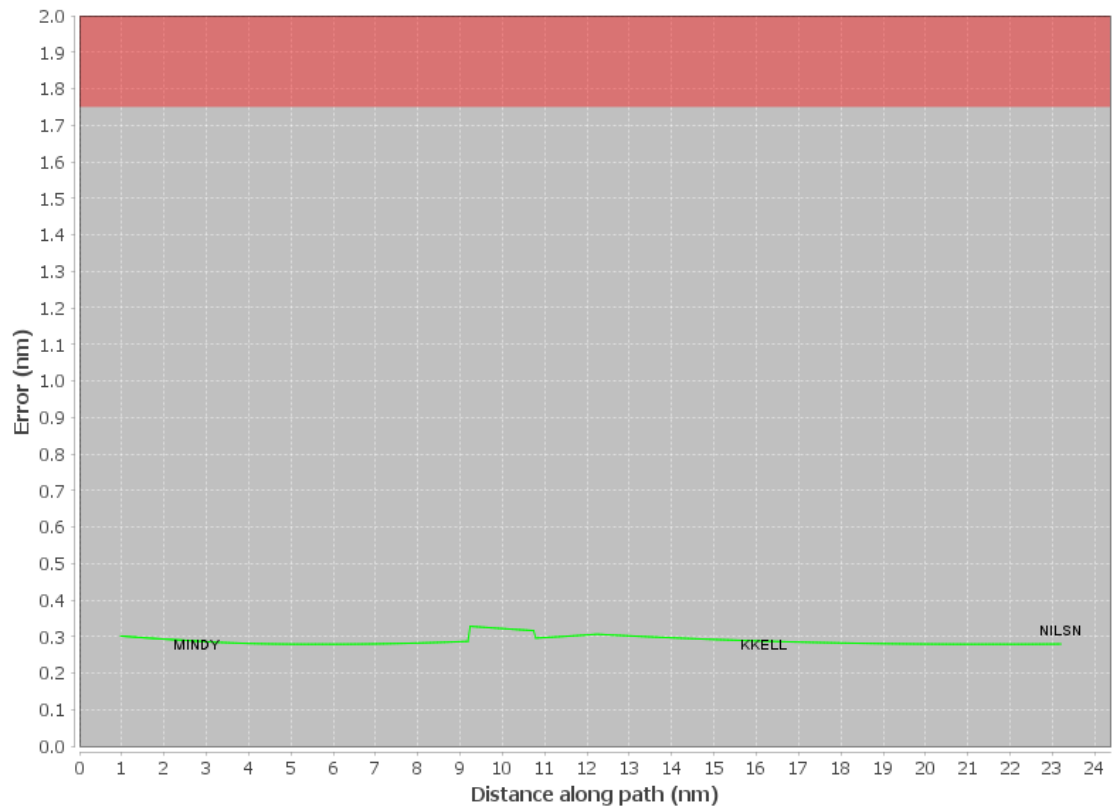
<b>Available DMEs by Waypoints</b>			
Waypoint Before	Waypoint After	DME List	Suggested DMEs
KDTW:RW04L:DER	MINDY	SVM, CRL	
MINDY	KKELL	PSI, DXO, SVM, CRL	
KKELL	NILSN	PSI, DXO, SVM, CRL	

**DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN**

<b>User Data Files</b>								
#	File Name							
1	UserDMEsKDTW [IFPA] ZETTR4 SID_20230126_0745 CST.udt							
<b>User DMEs</b>								
#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ASP FAA 941131-3 ASP [IFPA]	N44° 26' 56.8613", W083° 23' 39.4201"	-0.0 E	130	625.1	null	ASP FAA 941131-3	
	ESV:	Bearing [True]: 77.0° to 171.0° Bearing [Mag]: 77.0° to 171.0°				Arc Distance: Out to 106.0 NM Altitude: 8600.0 to 20000.0 ft		
2	FNT FAA 691869-026 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-026	
	ESV:	Bearing [True]: 68.0° to 91.0° Bearing [Mag]: 74.0° to 97.0°				Arc Distance: Out to 70.0 NM Altitude: 3000.0 to 15300.0 ft		
3	DKK FAA 712628-011 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-011	
	ESV:	Bearing [True]: 290.0° to 20.0° Bearing [Mag]: 290.0° to 20.0°				Arc Distance: Out to 113.0 NM Altitude: 9500.0 to 16000.0 ft		
4	JFN FAA 704201-29 JFN [IFPA]	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	896.3	null	JFN FAA 704201-29	
	ESV:	Bearing [True]: 354.0° to 7.0° Bearing [Mag]: 354.0° to 7.0°				Arc Distance: Out to 100.0 NM Altitude: 9000.0 to 13000.0 ft		
5	DKK FAA 712628-8 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-8	
	ESV:	Bearing [True]: 316.0° to 335.0° Bearing [Mag]: 316.0° to 335.0°				Arc Distance: Out to 133.0 NM Altitude: 13700.0 to 45000.0 ft		
6	SVM FAA 698158-031 SVM [IFPA]	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	955.6	114.3	SVM FAA 698158-031	
	ESV:	Bearing [True]: 41.0° to 62.0° Bearing [Mag]: 44.0° to 65.0°				Arc Distance: Out to 80.0 NM Altitude: 4000.0 to 19000.0 ft		
7	APN FAA 701321-11 APN [IFPA]	N45° 04' 58.0031", W083° 33' 25.2126"	7.0 W	40	675.7	108.8	APN FAA 701321-11	
	ESV:	Bearing [True]: 101.0° to 141.0° Bearing [Mag]: 108.0° to 148.0°				Arc Distance: Out to 104.0 NM Altitude: 11900.0 to 14000.0 ft		
8	CRL FAA 701373-034 CRL [IFPA]	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	628.4	115.7	CRL FAA 701373-034	
	ESV:	Bearing [True]: 24.0° to 58.0° Bearing [Mag]: 27.0° to 61.0°				Arc Distance: Out to 116.0 NM Altitude: 9000.0 to 16000.0 ft		
9	FNT FAA 691869-18 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-18	
	ESV:	Bearing [True]: 44.0° to 62.0° Bearing [Mag]: 50.0° to 68.0°				Arc Distance: Out to 123.0 NM Altitude: 11900.0 to 20000.0 ft		
10	MBS FAA 704119-29 MBS [IFPA]	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	663	112.9	MBS FAA 704119-29	
	ESV:	Bearing [True]: 105.0° to 116.0° Bearing [Mag]: 108.0° to 119.0°				Arc Distance: Out to 90.0 NM Altitude: 7000.0 to 14500.0 ft		

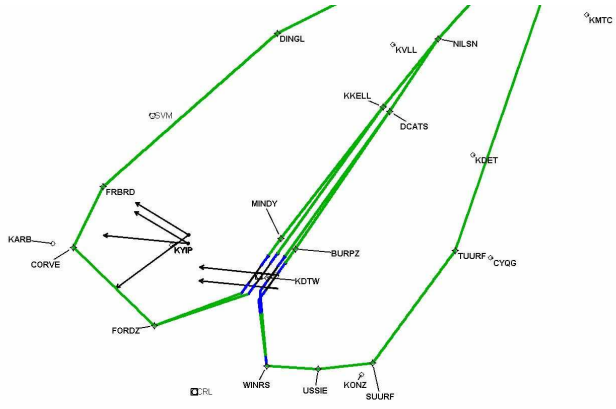
# DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN

## DME Error



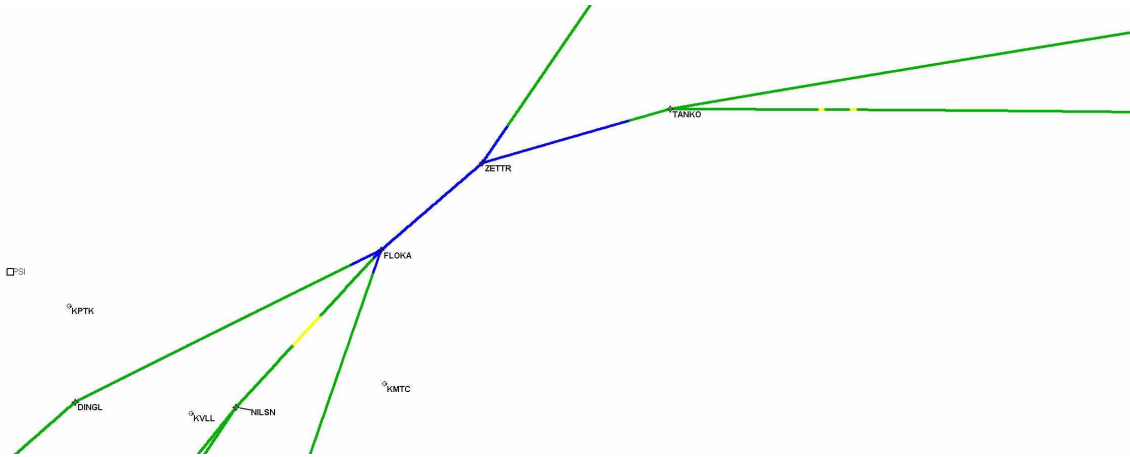
# DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN

Graphic Depiction 1



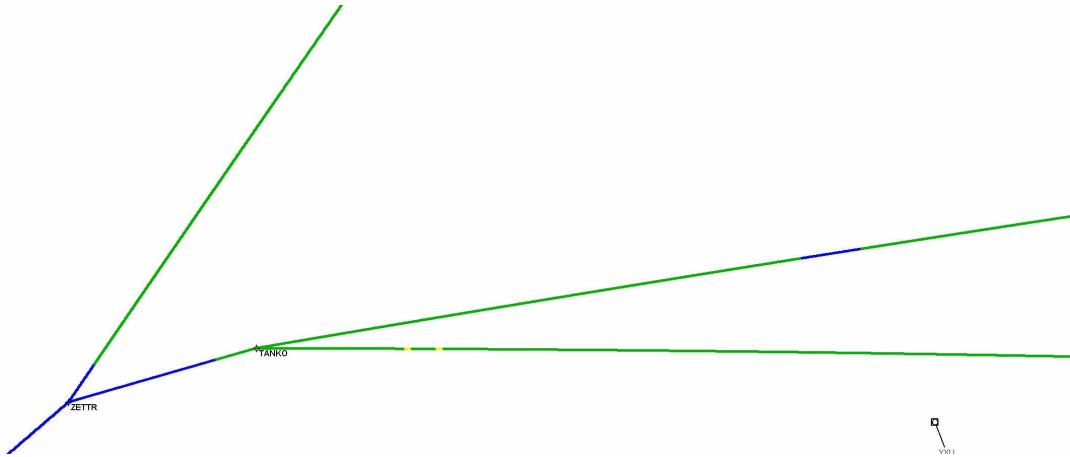
# DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN

Graphic Depiction 2



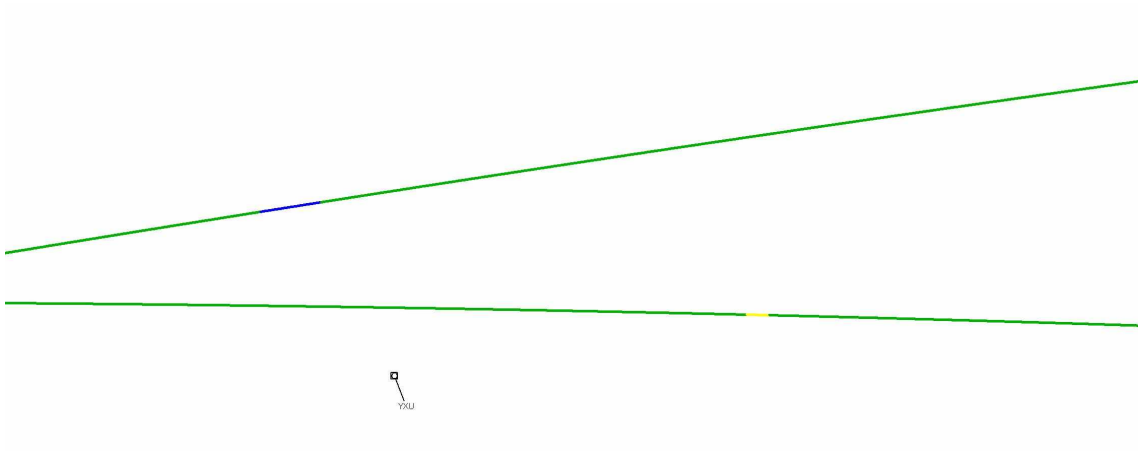
# DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN

Graphic Depiction 3



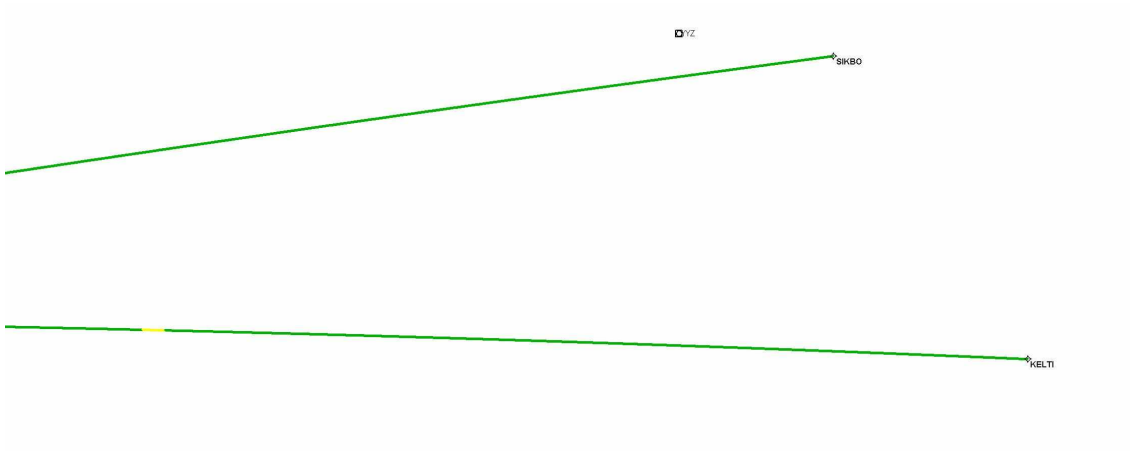
# DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN

Graphic Depiction 4



# DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN

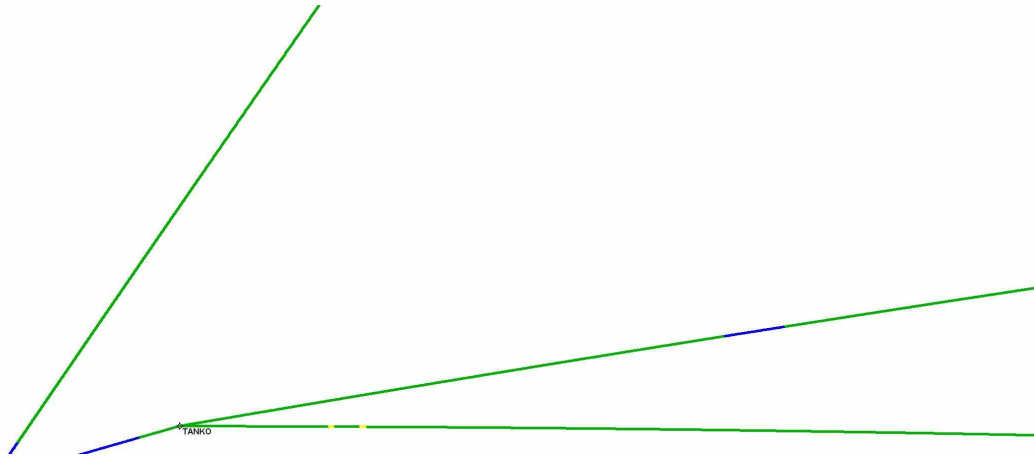
Graphic Depiction 5





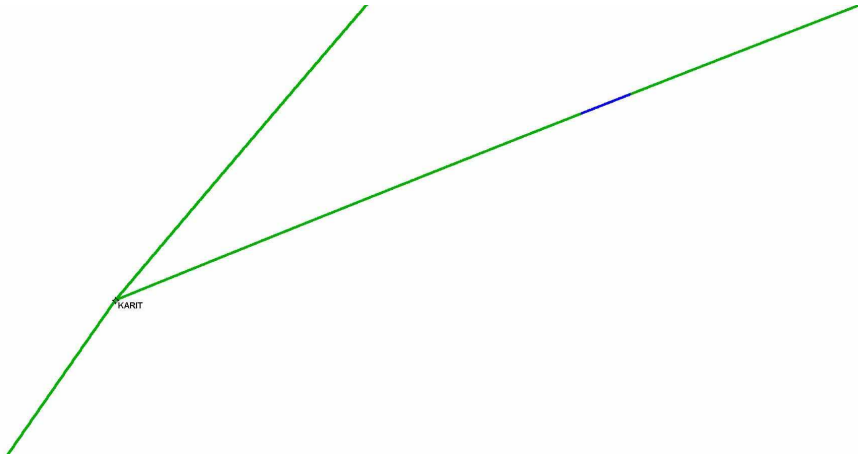
# DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN

Graphic Depiction 6



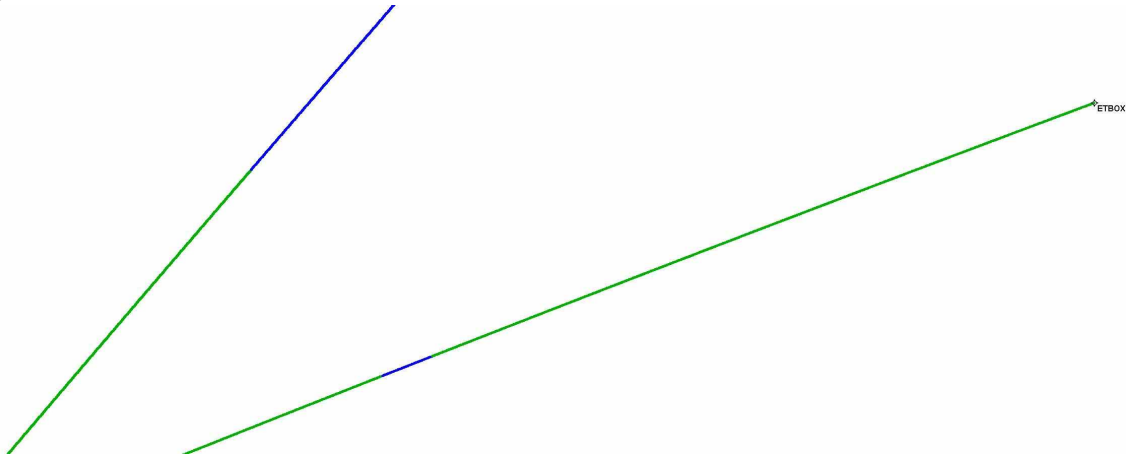
DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN

Graphic Depiction 7



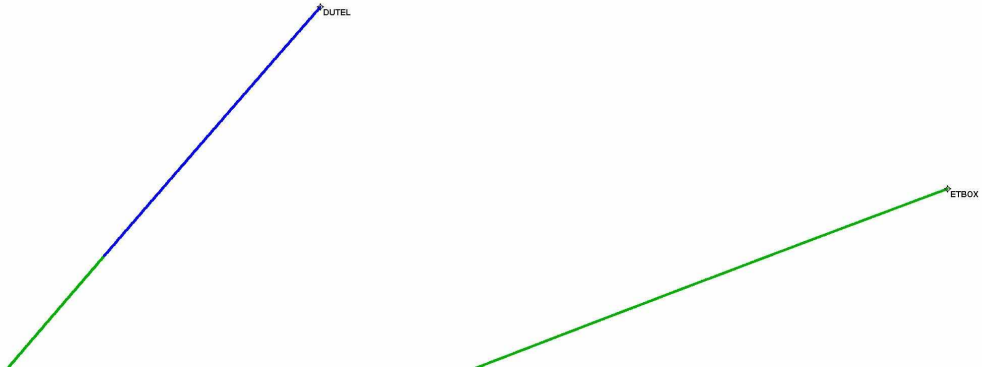
# DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN

Graphic Depiction 8



# DME DME Assessment Results for ZETTR4 path KDTW:RW04L:DER\_NILSN

Graphic Depiction 9



## DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL

### Results Summary

Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jose G-CTR Medina
Project File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW ZETTR4 DME(lower MEAs) 20240207.tgs
Output File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW [IFPA] ZETTR4 20240207_1422 CST\KDTW-RW04R- DER_KKELL\KDTW ZETTR4 SID RW04R KKELL 20240207_1422 CST.pdf
Procedure Name:	ZETTR4
Software: DmeDmePlugin:	7.2.1
Date/Time:	02/07/2024 14:22 CST
Databases:	DTED LEVEL 0 MAX

### Failures

No Failures

### Warnings

No Warnings

### Informational

No Informational

### Notes For Flight Check

None

### Flight Plan

Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
KDTW:RW04R:DER	WP	N42° 13' 52.3644", W083° 20' 59.9655"	635.8	VNAV	130	FLY_OVER	TF
KKELL	WP	N42° 27' 30.4800", W083° 10' 53.3400"	4000	VNAV	200	FLY_BY	TF

Climb Gradient:  
500.0 ft/NM up to 1146.0 ft MSL  
200.0 ft/NM

### Flyability

Flight Type:	SID
Selected Airport:	KDTW [IFPA]
Climb Gradient:	500.0 ft/NM up to 1146.0 ft MSL 200.0 ft/NM
Speeds:	130 at the Runway DER 145 at the end of the VA or VI leg 200 Ground Speed to 11000 FT 240 Ground Speed to 18000 FT 260 Ground Speed to 24000 FT 340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

**DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL**

<b>DME/DME</b>	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

<b>DME/DME (Continued)</b>										
<b>DMEs Used</b>										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	PSI	N42° 42' 03.0947", W083° 31' 57.9835"	-0.0 E	40	L	IFPA	NO	Enabled	75.5 %	76.6 %
2	DXO	N42° 12' 47.2904", W083° 21' 59.9878"	6.0 W	130	H	IFPA	NO	Enabled	73.7 %	74.8 %
3	CRL	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	DH	IFPA	NO	Enabled	93 %	93.7 %
4	SVM	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	L	IFPA	NO	Enabled	55.8 %	57.5 %

<b>Flight Check DME Selection</b>					
Distance [NM]	Selected DMEs				Alternate
0.0					
1.0	CRL	SVM			
2.1	SVM	DXO	CRL		
3.6	SVM	DXO	CRL	PSI	
6.3	PSI	CRL			
8.1	PSI	DXO	CRL		
11.9	PSI	DXO	CRL	SVM	

<b>Inertial Drift Segments</b>			
#	Start Location	End Location	Length [NM]
1	N42° 13' 54.2167", W083° 20' 58.6004"	N42° 14' 44.2257", W083° 20' 21.7343"	0.95

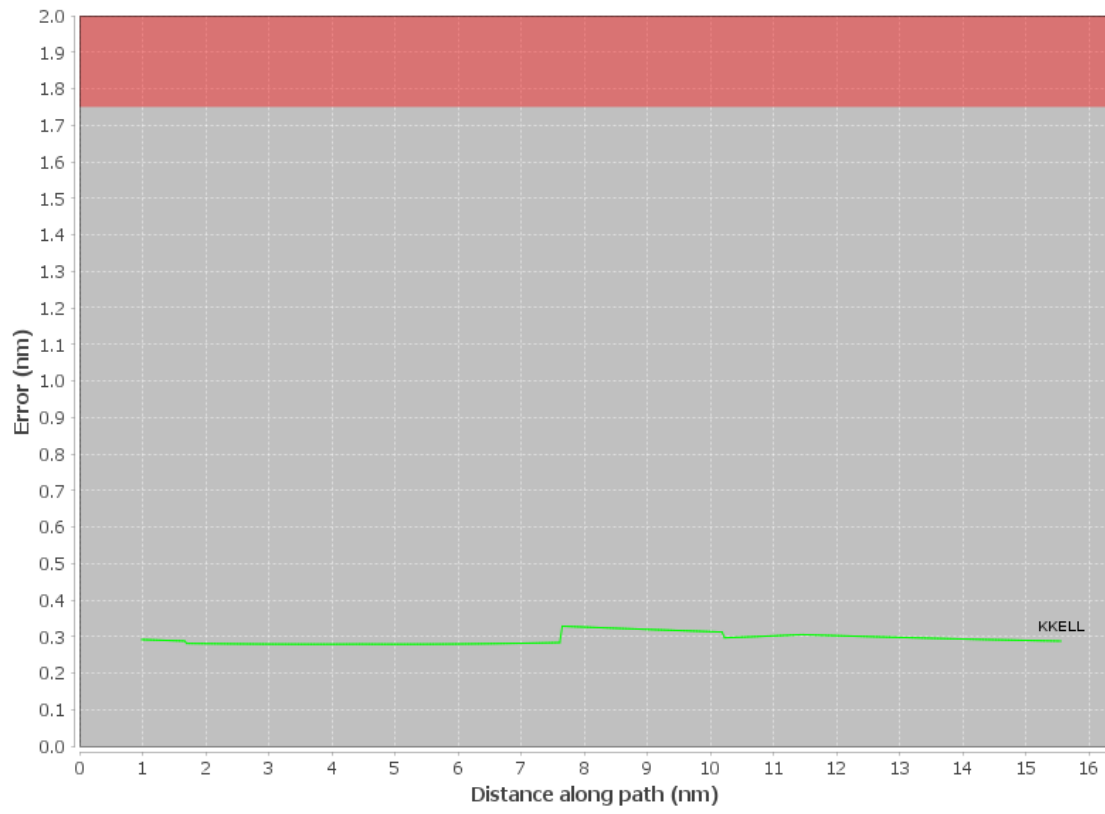
<b>Available DMEs by Waypoints</b>			
Waypoint Before	Waypoint After	DME List	Suggested DMEs
KDTW:RW04R:DER	KKELL	PSI, DXO, SVM, CRL	

**DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL**

<b>User Data Files</b>								
#	File Name							
1	UserDMEsKDTW [IFPA] ZETTR4 SID_20230126_0745 CST.udt							
<b>User DMEs</b>								
#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ASP FAA 941131-3 ASP [IFPA]	N44° 26' 56.8613", W083° 23' 39.4201"	-0.0 E	130	625.1	null	ASP FAA 941131-3	
	ESV:	Bearing [True]: 77.0° to 171.0° Bearing [Mag]: 77.0° to 171.0°				Arc Distance: Out to 106.0 NM Altitude: 8600.0 to 20000.0 ft		
2	FNT FAA 691869-026 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-026	
	ESV:	Bearing [True]: 68.0° to 91.0° Bearing [Mag]: 74.0° to 97.0°				Arc Distance: Out to 70.0 NM Altitude: 3000.0 to 15300.0 ft		
3	DKK FAA 712628-011 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-011	
	ESV:	Bearing [True]: 290.0° to 20.0° Bearing [Mag]: 290.0° to 20.0°				Arc Distance: Out to 113.0 NM Altitude: 9500.0 to 16000.0 ft		
4	JFN FAA 704201-29 JFN [IFPA]	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	896.3	null	JFN FAA 704201-29	
	ESV:	Bearing [True]: 354.0° to 7.0° Bearing [Mag]: 354.0° to 7.0°				Arc Distance: Out to 100.0 NM Altitude: 9000.0 to 13000.0 ft		
5	DKK FAA 712628-8 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-8	
	ESV:	Bearing [True]: 316.0° to 335.0° Bearing [Mag]: 316.0° to 335.0°				Arc Distance: Out to 133.0 NM Altitude: 13700.0 to 45000.0 ft		
6	SVM FAA 698158-031 SVM [IFPA]	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	955.6	114.3	SVM FAA 698158-031	
	ESV:	Bearing [True]: 41.0° to 62.0° Bearing [Mag]: 44.0° to 65.0°				Arc Distance: Out to 80.0 NM Altitude: 4000.0 to 19000.0 ft		
7	APN FAA 701321-11 APN [IFPA]	N45° 04' 58.0031", W083° 33' 25.2126"	7.0 W	40	675.7	108.8	APN FAA 701321-11	
	ESV:	Bearing [True]: 101.0° to 141.0° Bearing [Mag]: 108.0° to 148.0°				Arc Distance: Out to 104.0 NM Altitude: 11900.0 to 14000.0 ft		
8	CRL FAA 701373-034 CRL [IFPA]	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	628.4	115.7	CRL FAA 701373-034	
	ESV:	Bearing [True]: 24.0° to 58.0° Bearing [Mag]: 27.0° to 61.0°				Arc Distance: Out to 116.0 NM Altitude: 9000.0 to 16000.0 ft		
9	FNT FAA 691869-18 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-18	
	ESV:	Bearing [True]: 44.0° to 62.0° Bearing [Mag]: 50.0° to 68.0°				Arc Distance: Out to 123.0 NM Altitude: 11900.0 to 20000.0 ft		
10	MBS FAA 704119-29 MBS [IFPA]	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	663	112.9	MBS FAA 704119-29	
	ESV:	Bearing [True]: 105.0° to 116.0° Bearing [Mag]: 108.0° to 119.0°				Arc Distance: Out to 90.0 NM Altitude: 7000.0 to 14500.0 ft		

# DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL

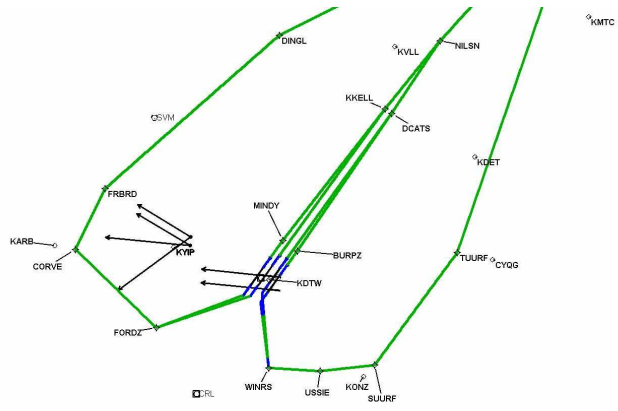
## DME Error





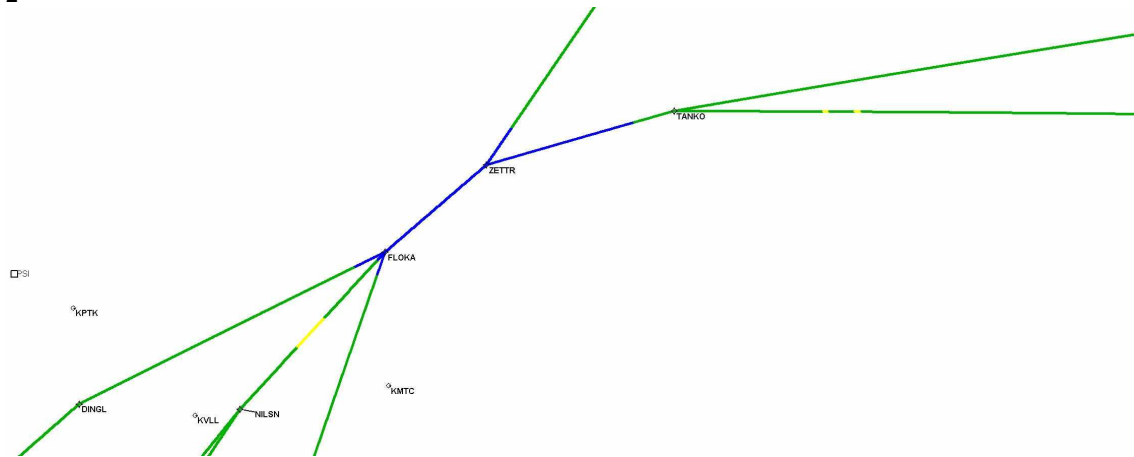
# DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL

Graphic Depiction 1



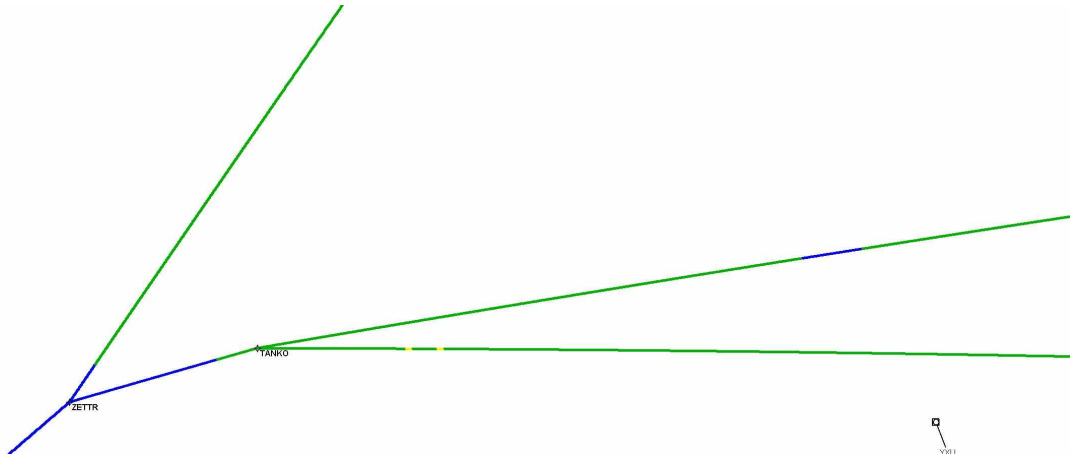
# DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL

Graphic Depiction 2



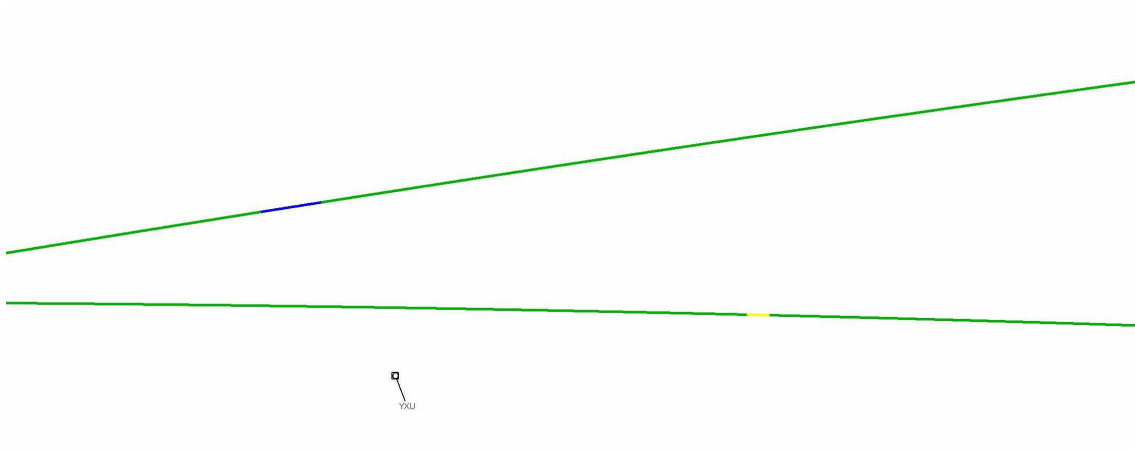
# DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL

Graphic Depiction 3



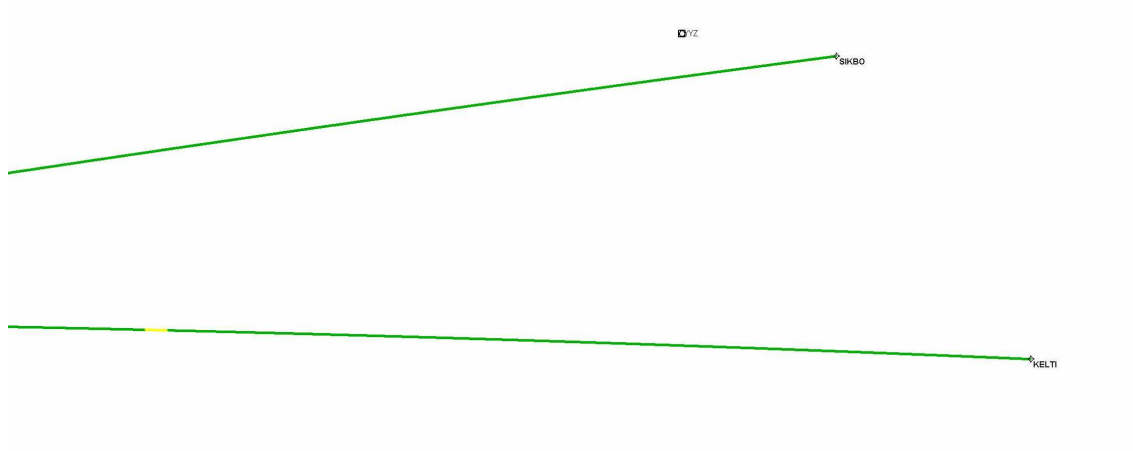
# DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL

Graphic Depiction 4



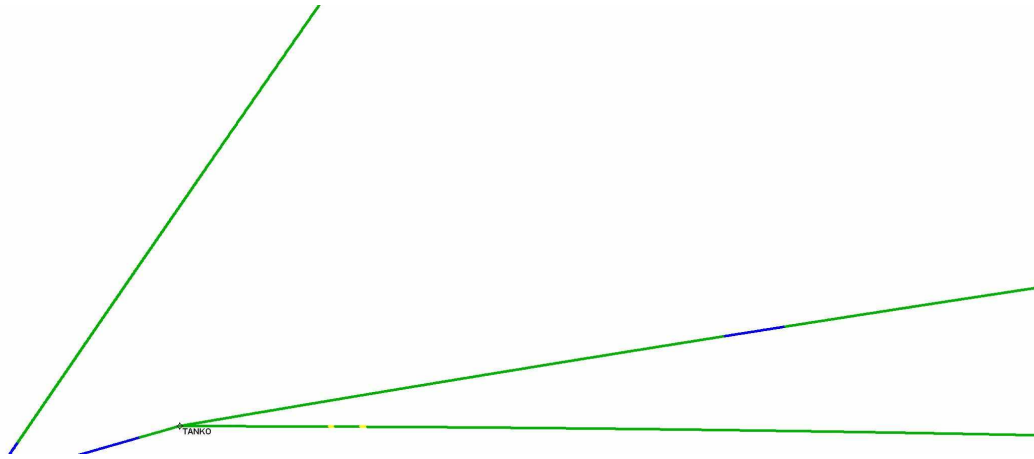
# DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL

Graphic Depiction 5



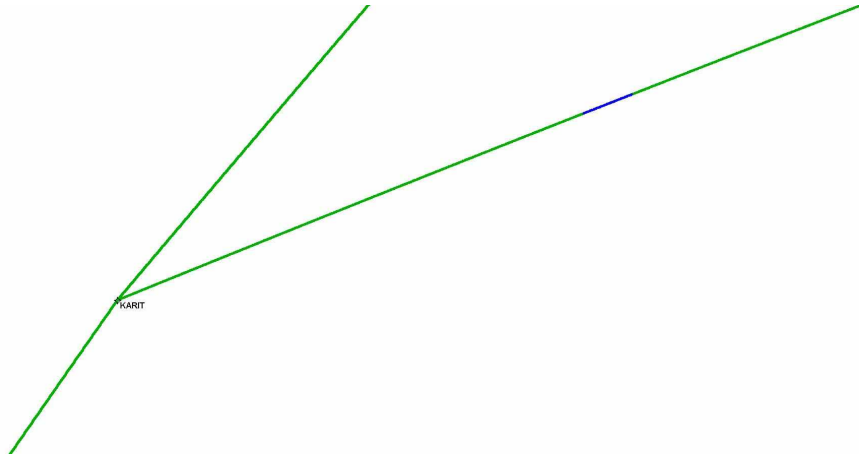
# DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL

Graphic Depiction 6



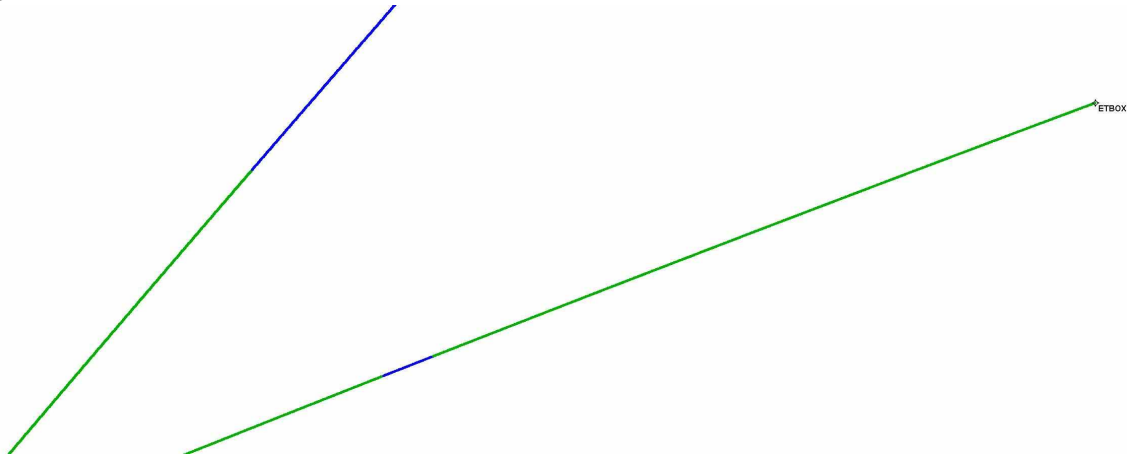
# DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL

Graphic Depiction 7



# DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL

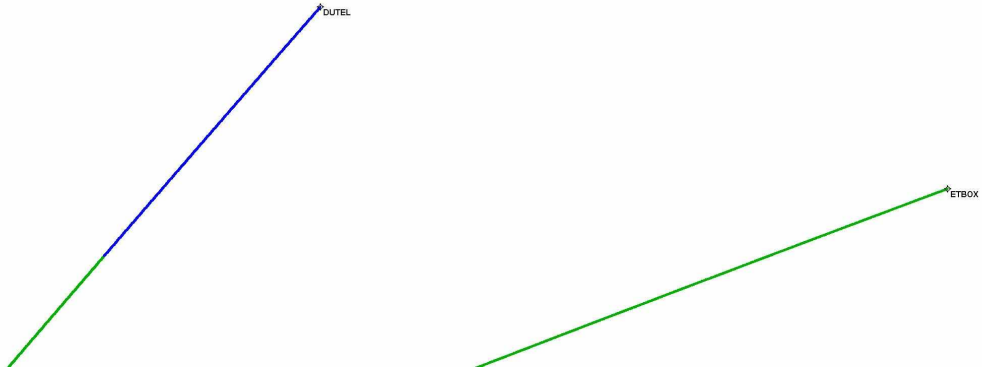
Graphic Depiction 8





# DME DME Assessment Results for ZETTR4 path KDTW:RW04R:DER\_KKELL

Graphic Depiction 9



## DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL

Results Summary	
Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jose G-CTR Medina
Project File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW ZETTR4 DME(lower MEAs) 20240207.tgs
Output File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW [IFPA] ZETTR4 20240207_1422 CST\KDTW-RW21L- DER_DUTEL\KDTW ZETTR4 SID RW21L DUTEL 20240207_1422 CST.pdf
Procedure Name:	ZETTR4
Software: DmeDmePlugin:	7.2.1
Date/Time:	02/07/2024 14:22 CST
Databases:	DTED LEVEL 0 MAX

Failures
No Failures

Warnings
No Warnings

Informational
No Informational

Notes For Flight Check
None

Flight Plan							
Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
KDTW:RW21L:DER	WP	N42° 11' 44.2115", W083° 21' 06.4868"	632.8	VNAV	130	FLY_BY	TF
WINRS	WP	N42° 05' 42.0200", W083° 20' 02.3900"	2500	VNAV	230	FLY_BY	TF
USSIE	WP	N42° 05' 56.3400", W083° 14' 27.7400"	4000	VNAV	230	FLY_BY	TF
SUURF	WP	N42° 06' 57.5100", W083° 08' 37.7600"	4000	VNAV	230	FLY_BY	TF
TUURF	WP	N42° 16' 44.4000", W083° 01' 13.2800"	4000	VNAV	230	FLY_BY	TF
FLOKA	WP	N42° 47' 27.1300", W082° 52' 18.9200"	3100	VNAV	200	FLY_BY	TF
ZETTR	WP	N42° 55' 23.5900", W082° 42' 33.7100"	4000	VNAV	200	FLY_BY	TF
KARIT	WP	N43° 43' 23.0000", W082° 08' 40.0000"	12000	VNAV	240	FLY_BY	TF
DUTEL	WP	N44° 39' 59.0000", W081° 17' 47.0000"	12000	VNAV	240	FLY_BY	TF
Climb Gradient: 500.0 ft/NM up to 1146.0 ft MSL 200.0 ft/NM							

**DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL**

<b>Flyability</b>	
Flight Type:	SID
Selected Airport:	KDTW [IFPA]
Climb Gradient:	500.0 ft/NM up to 1146.0 ft MSL 200.0 ft/NM
Speeds:	130 at the Runway DER 145 at the end of the VA or VI leg 200 Ground Speed to 11000 FT 240 Ground Speed to 18000 FT 260 Ground Speed to 24000 FT 340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

<b>DME/DME</b>	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

<b>DME/DME (Continued)</b>										
<b>DMEs Used</b>										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	PSI	N42° 42' 03.0947", W083° 31' 57.9835"	-0.0 E	40	L	IFPA	NO	Enabled	18.6 %	18.9 %
2	DXO	N42° 12' 47.2904", W083° 21' 59.9878"	6.0 W	130	H	IFPA	NO	Enabled	25.3 %	25.7 %
3	CRL	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	DH	IFPA	NO	Enabled	57.5 %	57 %
4	MBS	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	L	IFPA	NO	Enabled	2.2 %	2 %
5	JXN	N42° 15' 33.2631", W084° 27' 30.7776"	0.0 E	130	DH	IFPA	NO	Enabled	0.6 %	0.6 %
6	SVM	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	L	IFPA	NO	Enabled	29.3 %	28.2 %
7	FNT	N42° 58' 00.3594", W083° 44' 49.1561"	6.0 W	130	H	IFPA	NO	Enabled	33.4 %	33.3 %
8	ASP	N44° 26' 56.8613", W083° 23' 39.4201"	0.0 E	130	DH	IFPA	NO	Enabled	40.8 %	41.9 %
9	APN	N45° 04' 58.0031", W083° 33' 25.2126"	7.0 W	40	L	IFPA	NO	Enabled	17.9 %	19.1 %

**DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL**

<b>Flight Check DME Selection</b>						
<b>Distance [NM]</b>	<b>Selected DMEs</b>					<b>Alternate</b>
0.0						
2.1	CRL	DXO				
2.6	CRL	SVM				
5.1	CRL	SVM	PSI			
5.5						
6.4	CRL	SVM	DXO			
10.1	CRL	DXO	SVM	JXN		
11.3	CRL	SVM	DXO			
20.1	PSI	CRL	SVM	DXO		
23.3	PSI	CRL	DXO			
31.6	PSI	CRL	DXO	SVM		
48.4	PSI	CRL	DXO			
54.8	PSI	CRL				
55.6						
71.9	FNT	CRL	SVM			
83.3	MBS	CRL	SVM	FNT		
83.8	MBS	CRL	FNT	ASP	SVM	
87.0	FNT	ASP	SVM	CRL		
88.9	FNT	ASP	CRL			
92.8	CRL	ASP				
121.0	FNT	ASP	CRL			
127.1	FNT	ASP	APN	CRL		
127.4	FNT	ASP	APN			
163.3						

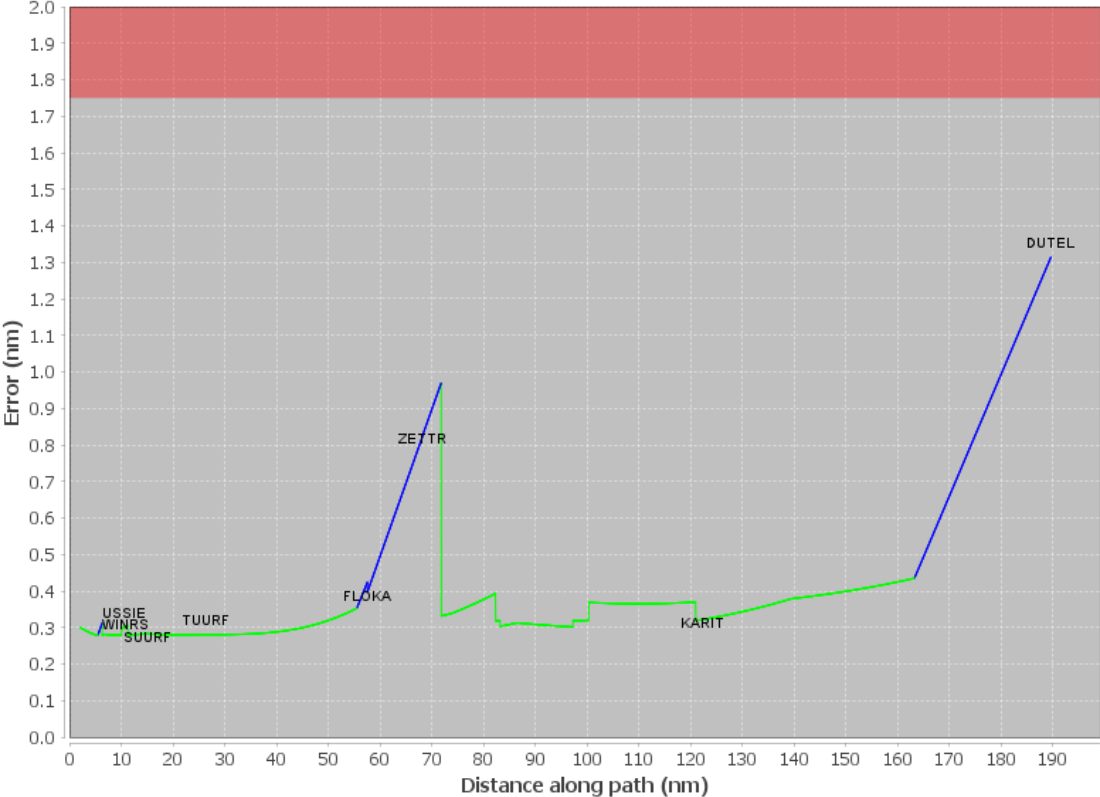
<b>Inertial Drift Segments</b>			
<b>#</b>	<b>Start Location</b>	<b>End Location</b>	<b>Length [NM]</b>
1	N42° 11' 42.3483", W083° 21' 07.8589"	N42° 09' 45.9768", W083° 21' 24.6038"	2.0934
2	N42° 06' 26.9609", W083° 20' 17.5215"	N42° 05' 42.0200", W083° 20' 02.3900"	0.7721
3	N42° 45' 31.0484", W082° 52' 52.8479"	N42° 58' 36.5227", W082° 40' 19.3246"	16.2768
4	N44° 17' 56.2560", W081° 37' 50.2504"	N44° 39' 59.0000", W081° 17' 47.0000"	26.3088

<b>Available DMEs by Waypoints</b>			
<b>Waypoint Before</b>	<b>Waypoint After</b>	<b>DME List</b>	<b>Suggested DMEs</b>
KDTW:RW21L:DER	WINRS	PSI, DXO, SVM, CRL	
WINRS	USSIE	JXN, DXO, SVM, CRL	
USSIE	SUURF	JXN, DXO, SVM, CRL	
SUURF	TUURF	PSI, DXO, SVM, CRL	
TUURF	FLOKA	PSI, DXO, SVM, CRL	
FLOKA	ZETTR		
ZETTR	KARIT	SVM, CRL, FNT, ASP, MBS	
KARIT	DUTEL	CRL, FNT, ASP, APN	

**DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL**

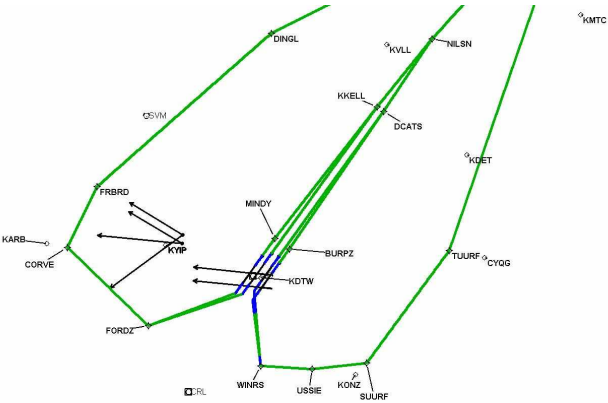
<b>User Data Files</b>								
#	File Name							
1	UserDMESKDTW [IFPA] ZETTR4 SID_20230126_0745 CST.udt							
<b>User DMEs</b>								
#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ASP FAA 941131-3 ASP [IFPA]	N44° 26' 56.8613", W083° 23' 39.4201"	-0.0 E	130	625.1	null	ASP FAA 941131-3	
	ESV:	Bearing [True]: 77.0° to 171.0° Bearing [Mag]: 77.0° to 171.0°				Arc Distance: Out to 106.0 NM Altitude: 8600.0 to 20000.0 ft		
2	FNT FAA 691869-026 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-026	
	ESV:	Bearing [True]: 68.0° to 91.0° Bearing [Mag]: 74.0° to 97.0°				Arc Distance: Out to 70.0 NM Altitude: 3000.0 to 15300.0 ft		
3	DKK FAA 712628-011 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-011	
	ESV:	Bearing [True]: 290.0° to 20.0° Bearing [Mag]: 290.0° to 20.0°				Arc Distance: Out to 113.0 NM Altitude: 9500.0 to 16000.0 ft		
4	JFN FAA 704201-29 JFN [IFPA]	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	896.3	null	JFN FAA 704201-29	
	ESV:	Bearing [True]: 354.0° to 7.0° Bearing [Mag]: 354.0° to 7.0°				Arc Distance: Out to 100.0 NM Altitude: 9000.0 to 13000.0 ft		
5	DKK FAA 712628-8 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-8	
	ESV:	Bearing [True]: 316.0° to 335.0° Bearing [Mag]: 316.0° to 335.0°				Arc Distance: Out to 133.0 NM Altitude: 13700.0 to 45000.0 ft		
6	SVM FAA 698158-031 SVM [IFPA]	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	955.6	114.3	SVM FAA 698158-031	
	ESV:	Bearing [True]: 41.0° to 62.0° Bearing [Mag]: 44.0° to 65.0°				Arc Distance: Out to 80.0 NM Altitude: 4000.0 to 19000.0 ft		
7	APN FAA 701321-11 APN [IFPA]	N45° 04' 58.0031", W083° 33' 25.2126"	7.0 W	40	675.7	108.8	APN FAA 701321-11	
	ESV:	Bearing [True]: 101.0° to 141.0° Bearing [Mag]: 108.0° to 148.0°				Arc Distance: Out to 104.0 NM Altitude: 11900.0 to 14000.0 ft		
8	CRL FAA 701373-034 CRL [IFPA]	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	628.4	115.7	CRL FAA 701373-034	
	ESV:	Bearing [True]: 24.0° to 58.0° Bearing [Mag]: 27.0° to 61.0°				Arc Distance: Out to 116.0 NM Altitude: 9000.0 to 16000.0 ft		
9	FNT FAA 691869-18 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-18	
	ESV:	Bearing [True]: 44.0° to 62.0° Bearing [Mag]: 50.0° to 68.0°				Arc Distance: Out to 123.0 NM Altitude: 11900.0 to 20000.0 ft		
10	MBS FAA 704119-29 MBS [IFPA]	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	663	112.9	MBS FAA 704119-29	
	ESV:	Bearing [True]: 105.0° to 116.0° Bearing [Mag]: 108.0° to 119.0°				Arc Distance: Out to 90.0 NM Altitude: 7000.0 to 14500.0 ft		

### DME Error



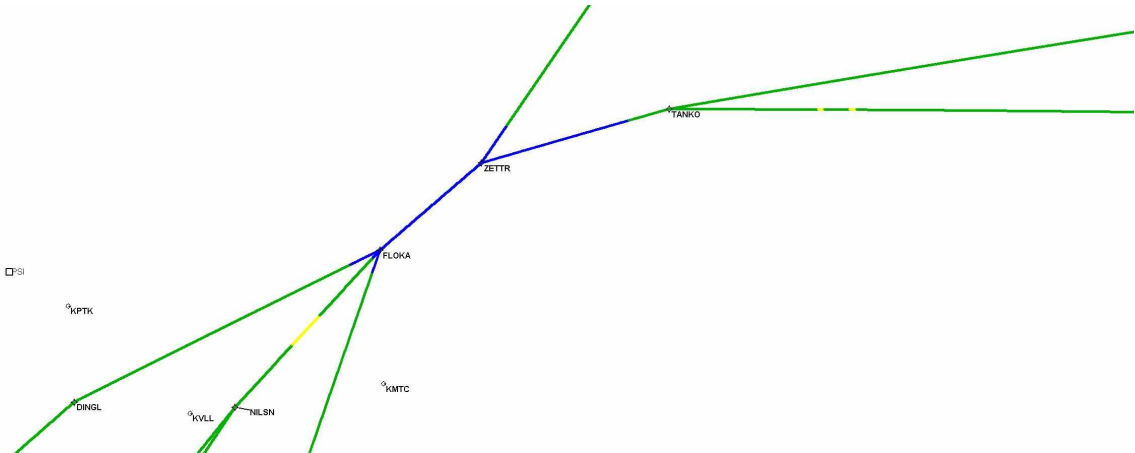
DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL

Graphic Depiction 1



DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL

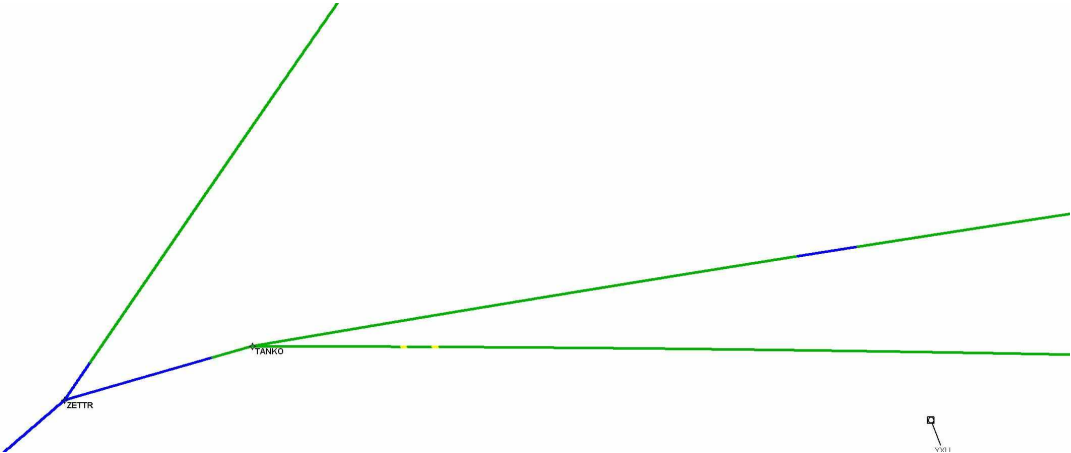
Graphic Depiction 2





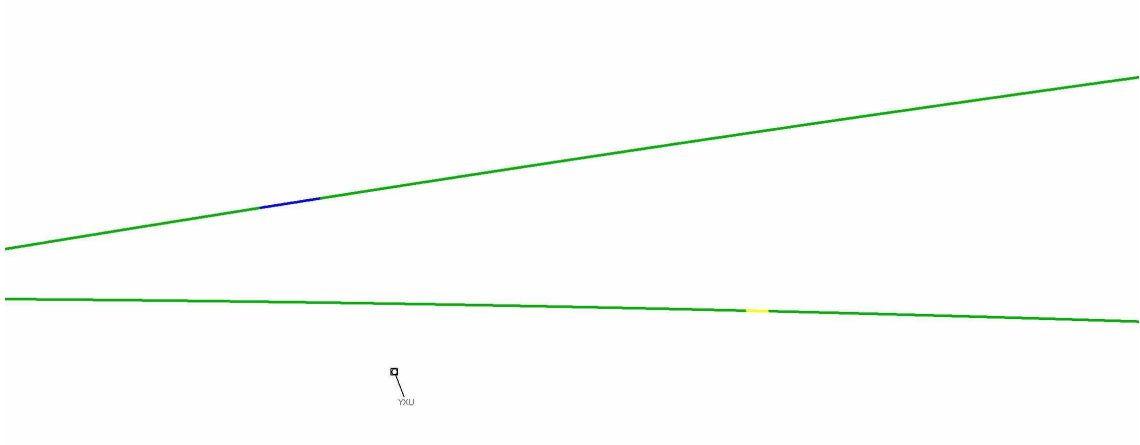
DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL

Graphic Depiction 3



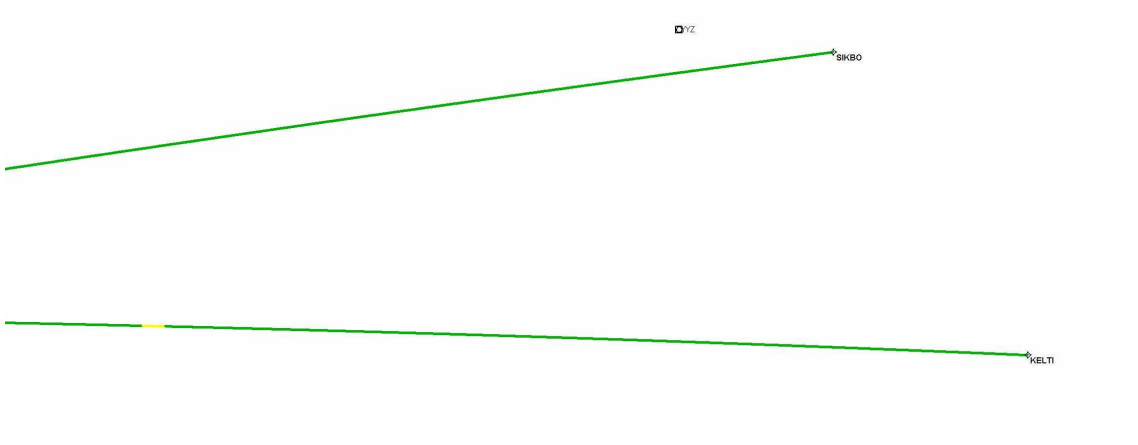
DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL

Graphic Depiction 4



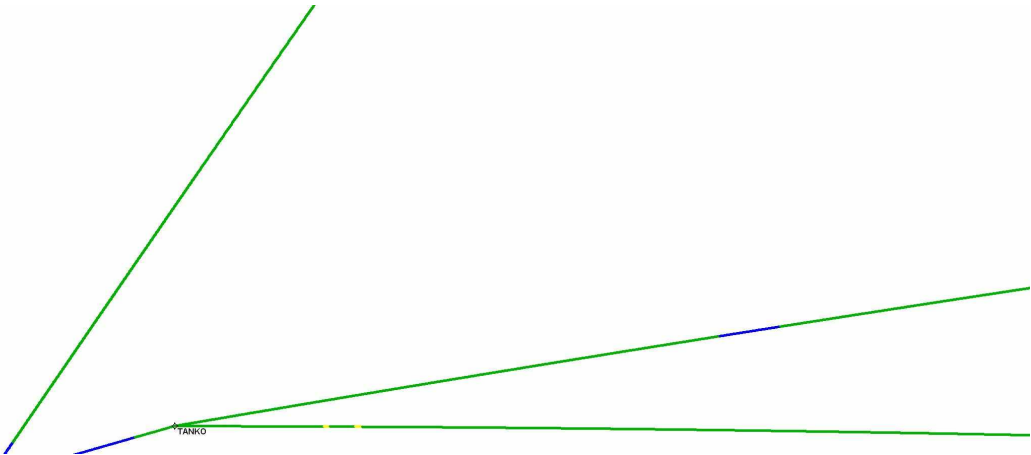
DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL

Graphic Depiction 5



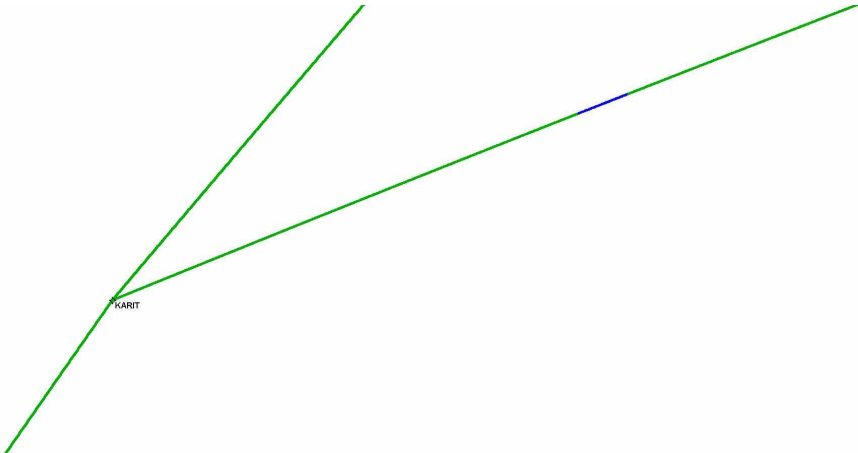
DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL

Graphic Depiction 6



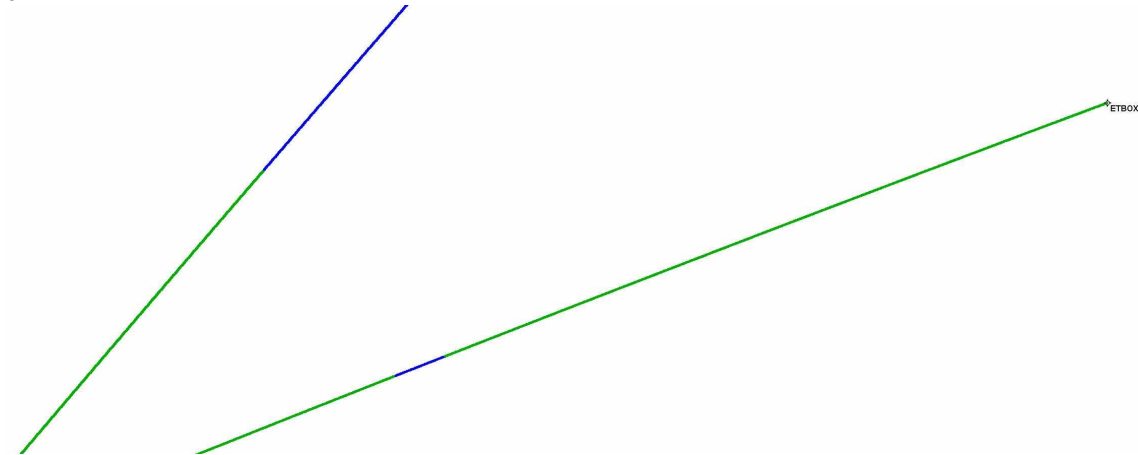
DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL

Graphic Depiction 7



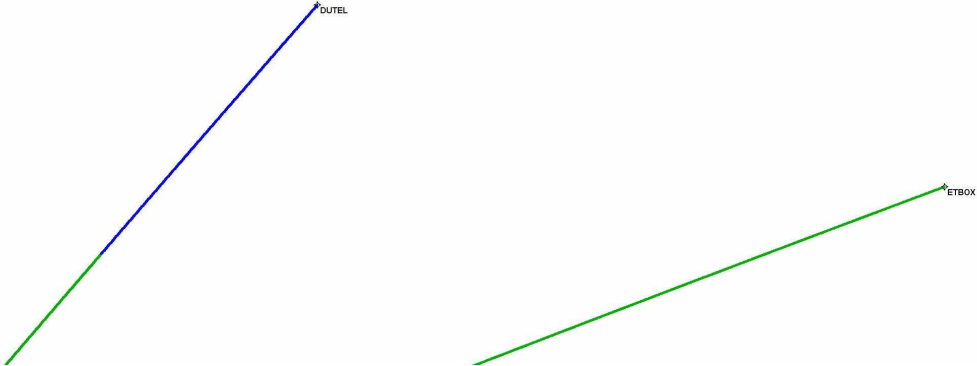
DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL

Graphic Depiction 8



DME DME Assessment Results for ZETTR4 path KDTW:RW21L:DER\_DUTEL

Graphic Depiction 9



## DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS

Results Summary	
Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jose G-CTR Medina
Project File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW ZETTR4 DME(lower MEAs) 20240207.tgs
Output File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW [IFPA] ZETTR4 20240207_1422 CST\KDTW-RW21R-DER_WINRS\KDTW ZETTR4 SID RW21R WINRS 20240207_1422 CST.pdf
Procedure Name:	ZETTR4
Software: DmeDmePlugin:	7.2.1
Date/Time:	02/07/2024 14:22 CST
Databases:	DTED LEVEL 0 MAX

Failures
No Failures

Warnings
No Warnings

Informational
No Informational

Notes For Flight Check
None

Flight Plan							
Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
KDTW:RW21R:DER	WP	N42° 12' 28.2081", W083° 21' 04.3881"	636.5	VNAV	130	FLY_BY	TF
WINRS	WP	N42° 05' 42.0200", W083° 20' 02.3900"	2500	VNAV	230	FLY_BY	TF
Climb Gradient: 500.0 ft/NM up to 1146.0 ft MSL 200.0 ft/NM							

Flyability	
Flight Type:	SID
Selected Airport:	KDTW [IFPA]
Climb Gradient:	500.0 ft/NM up to 1146.0 ft MSL 200.0 ft/NM
Speeds:	130 at the Runway DER
	145 at the end of the VA or VI leg
	200 Ground Speed to 11000 FT
	240 Ground Speed to 18000 FT
	260 Ground Speed to 24000 FT
	340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan



## DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS

DME/DME	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

DME/DME (Continued)										
DMEs Used										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	PSI	N42° 42' 03.0947", W083° 31' 57.9835"	-0.0 E	40	L	IFPA	NO	Enabled	6.2 %	8 %
2	DXO	N42° 12' 47.2904", W083° 21' 59.9878"	6.0 W	130	H	IFPA	NO	Enabled	5.6 %	5.1 %
3	CRL	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	DH	IFPA	NO	Enabled	46.8 %	50.7 %
4	SVM	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	L	IFPA	NO	Enabled	46.8 %	50.7 %

Flight Check DME Selection						
Distance [NM]	Selected DMEs					Alternate
0.0						
2.8	CRL	SVM				
2.8	CRL	SVM	DXO			
3.2	CRL	SVM				
5.8	CRL	SVM	PSI			
6.4						

Inertial Drift Segments			
#	Start Location	End Location	Length [NM]
1	N42° 12' 26.3583", W083° 21' 05.7509"	N42° 09' 51.0956", W083° 21' 14.1329"	2.7467
2	N42° 06' 19.6173", W083° 20' 13.2091"	N42° 05' 42.0200", W083° 20' 02.3900"	0.6406

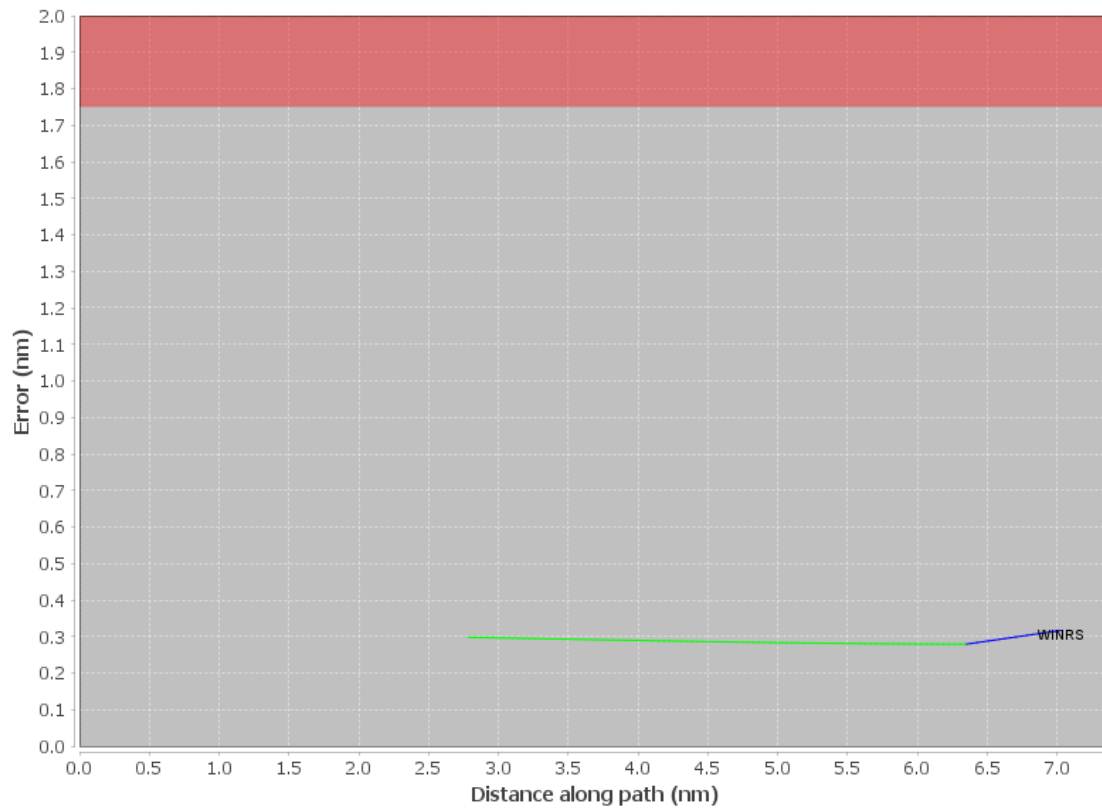
Available DMEs by Waypoints			
Waypoint Before	Waypoint After	DME List	Suggested DMEs
KDTW:RW21R:DER	WINRS	PSI, DXO, SVM, CRL	

**DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS**

<b>User Data Files</b>								
#	File Name							
1	UserDMEsKDTW [IFPA] ZETTR4 SID_20230126_0745 CST.udt							
<b>User DMEs</b>								
#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ASP FAA 941131-3 ASP [IFPA]	N44° 26' 56.8613", W083° 23' 39.4201"	-0.0 E	130	625.1	null	ASP FAA 941131-3	
	ESV:	Bearing [True]: 77.0° to 171.0° Bearing [Mag]: 77.0° to 171.0°				Arc Distance: Out to 106.0 NM Altitude: 8600.0 to 20000.0 ft		
2	FNT FAA 691869-026 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-026	
	ESV:	Bearing [True]: 68.0° to 91.0° Bearing [Mag]: 74.0° to 97.0°				Arc Distance: Out to 70.0 NM Altitude: 3000.0 to 15300.0 ft		
3	DKK FAA 712628-011 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-011	
	ESV:	Bearing [True]: 290.0° to 20.0° Bearing [Mag]: 290.0° to 20.0°				Arc Distance: Out to 113.0 NM Altitude: 9500.0 to 16000.0 ft		
4	JFN FAA 704201-29 JFN [IFPA]	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	896.3	null	JFN FAA 704201-29	
	ESV:	Bearing [True]: 354.0° to 7.0° Bearing [Mag]: 354.0° to 7.0°				Arc Distance: Out to 100.0 NM Altitude: 9000.0 to 13000.0 ft		
5	DKK FAA 712628-8 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-8	
	ESV:	Bearing [True]: 316.0° to 335.0° Bearing [Mag]: 316.0° to 335.0°				Arc Distance: Out to 133.0 NM Altitude: 13700.0 to 45000.0 ft		
6	SVM FAA 698158-031 SVM [IFPA]	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	955.6	114.3	SVM FAA 698158-031	
	ESV:	Bearing [True]: 41.0° to 62.0° Bearing [Mag]: 44.0° to 65.0°				Arc Distance: Out to 80.0 NM Altitude: 4000.0 to 19000.0 ft		
7	APN FAA 701321-11 APN [IFPA]	N45° 04' 58.0031", W083° 33' 25.2126"	7.0 W	40	675.7	108.8	APN FAA 701321-11	
	ESV:	Bearing [True]: 101.0° to 141.0° Bearing [Mag]: 108.0° to 148.0°				Arc Distance: Out to 104.0 NM Altitude: 11900.0 to 14000.0 ft		
8	CRL FAA 701373-034 CRL [IFPA]	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	628.4	115.7	CRL FAA 701373-034	
	ESV:	Bearing [True]: 24.0° to 58.0° Bearing [Mag]: 27.0° to 61.0°				Arc Distance: Out to 116.0 NM Altitude: 9000.0 to 16000.0 ft		
9	FNT FAA 691869-18 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-18	
	ESV:	Bearing [True]: 44.0° to 62.0° Bearing [Mag]: 50.0° to 68.0°				Arc Distance: Out to 123.0 NM Altitude: 11900.0 to 20000.0 ft		
10	MBS FAA 704119-29 MBS [IFPA]	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	663	112.9	MBS FAA 704119-29	
	ESV:	Bearing [True]: 105.0° to 116.0° Bearing [Mag]: 108.0° to 119.0°				Arc Distance: Out to 90.0 NM Altitude: 7000.0 to 14500.0 ft		

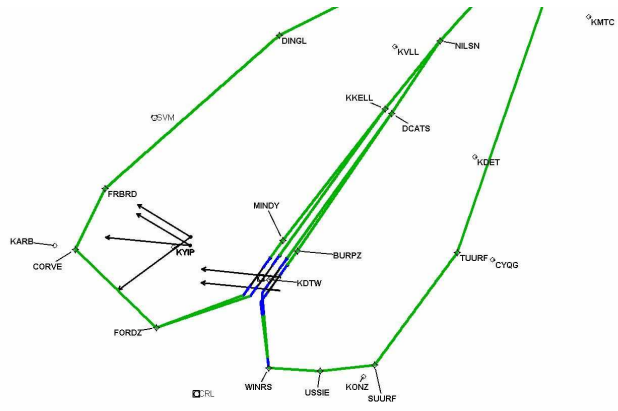
# DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS

## DME Error



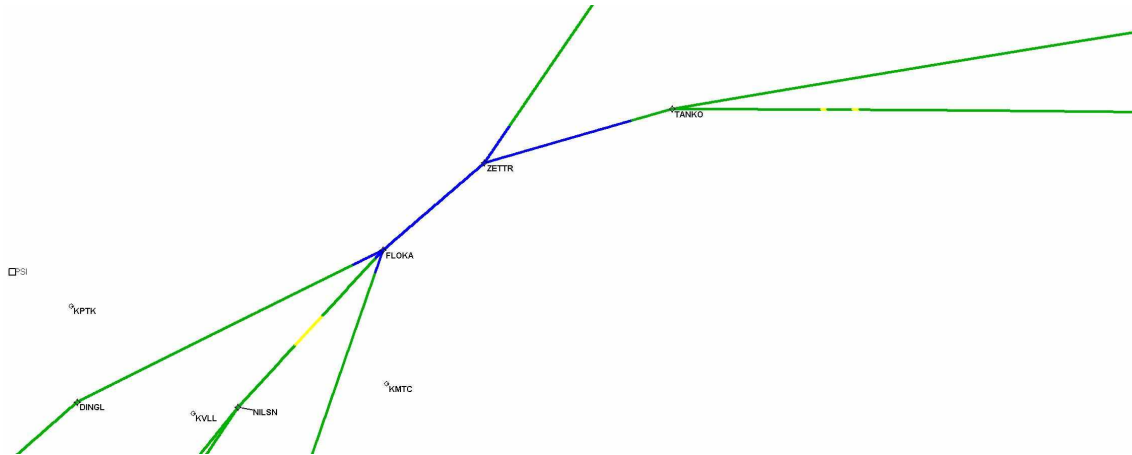
# DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS

Graphic Depiction 1



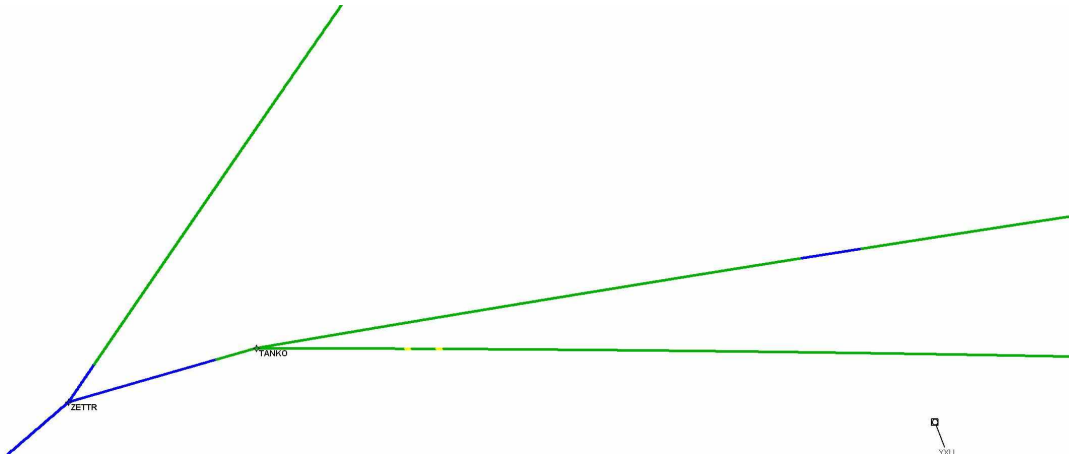
# DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS

Graphic Depiction 2



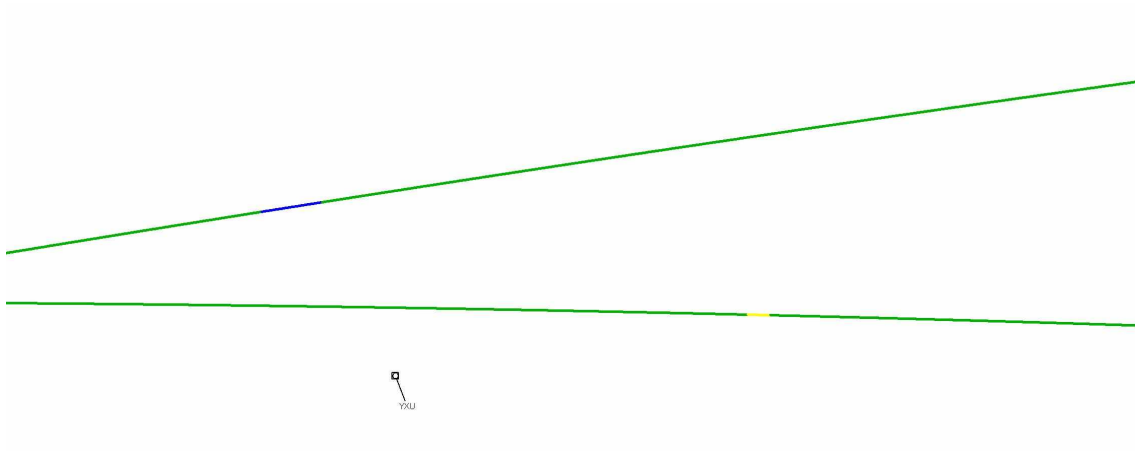
# DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS

Graphic Depiction 3



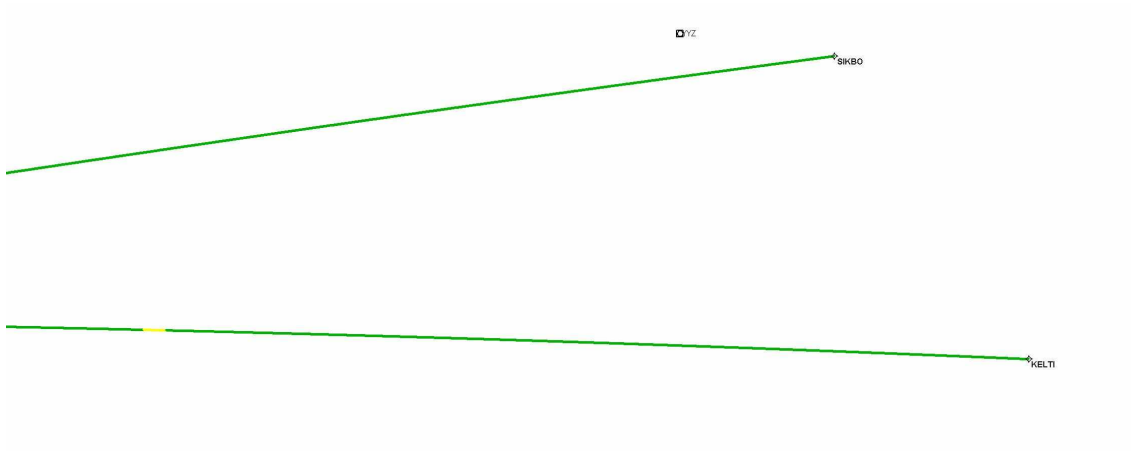
# DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS

Graphic Depiction 4



# DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS

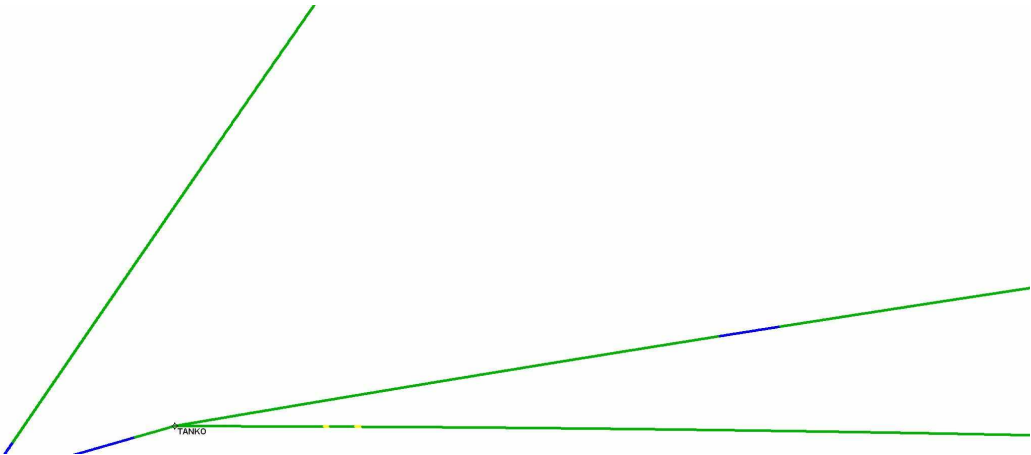
Graphic Depiction 5





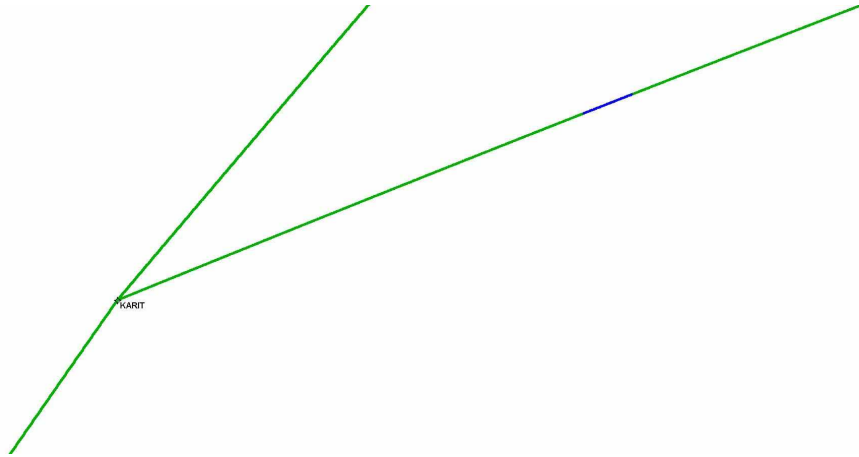
DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS

Graphic Depiction 6



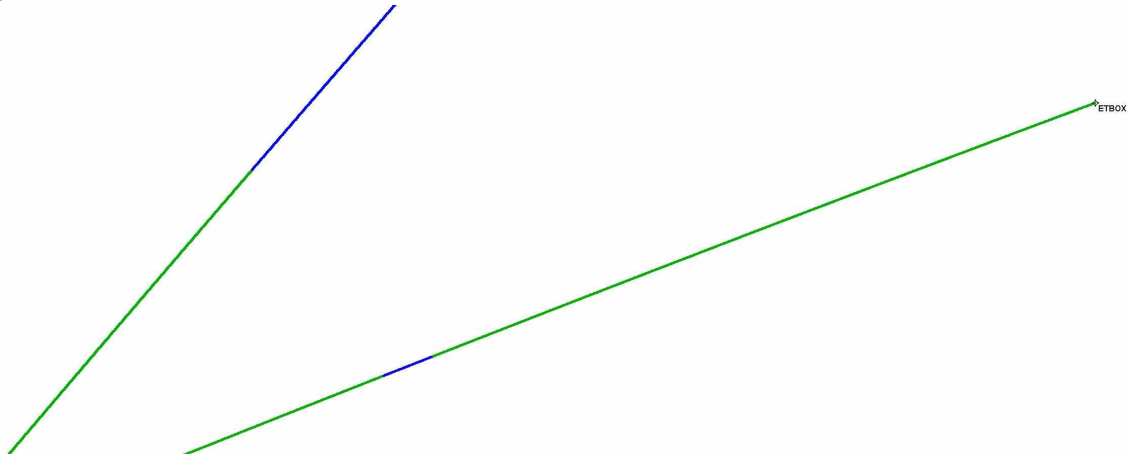
# DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS

Graphic Depiction 7



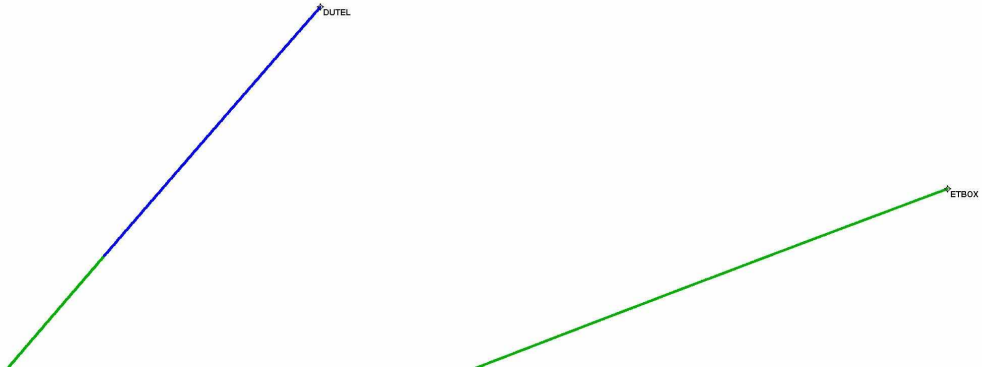
# DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS

Graphic Depiction 8



# DME DME Assessment Results for ZETTR4 path KDTW:RW21R:DER\_WINRS

Graphic Depiction 9



## DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA

Results Summary	
Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jose G-CTR Medina
Project File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW ZETTR4 DME(lower MEAs) 20240207.tgs
Output File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW [IFPA] ZETTR4 20240207_1422 CST\KDTW-RW22L- DER_FLOKA\KDTW ZETTR4 SID RW22L FLOKA 20240207_1422 CST.pdf
Procedure Name:	ZETTR4
Software: DmeDmePlugin:	7.2.1
Date/Time:	02/07/2024 14:22 CST
Databases:	DTED LEVEL 0 MAX

Failures
No Failures

Warnings
No Warnings

Informational
No Informational

Notes For Flight Check
None

Flight Plan							
Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
KDTW:RW22L:DER	WP	N42° 12' 08.3656", W083° 22' 16.5697"	637.5	VNAV	130	FLY_BY	TF
FORDZ	WP	N42° 07' 47.3300", W083° 32' 40.3400"	4000	VNAV	200	FLY_BY	TF
CORVE	WP	N42° 13' 15.7100", W083° 42' 24.9700"	4000	VNAV	200	FLY_BY	TF
FRBRD	WP	N42° 18' 24.1400", W083° 40' 00.6600"	4000	VNAV	200	FLY_BY	TF
DINGL	WP	N42° 32' 19.3800", W083° 23' 17.3100"	4000	VNAV	200	FLY_BY	TF
FLOKA	WP	N42° 47' 27.1300", W082° 52' 18.9200"	3100	VNAV	200	FLY_BY	TF
Climb Gradient: 500.0 ft/NM up to 1146.0 ft MSL 200.0 ft/NM							

Flyability	
Flight Type:	SID
Selected Airport:	KDTW [IFPA]
Climb Gradient:	500.0 ft/NM up to 1146.0 ft MSL 200.0 ft/NM
Speeds:	130 at the Runway DER 145 at the end of the VA or VI leg 200 Ground Speed to 11000 FT 240 Ground Speed to 18000 FT 260 Ground Speed to 24000 FT 340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

**DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA**

<b>DME/DME</b>	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

<b>DME/DME (Continued)</b>										
<b>DMEs Used</b>										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	PSI	N42° 42' 03.0947", W083° 31' 57.9835"	-0.0 E	40	L	IFPA	NO	Enabled	85.5 %	88 %
2	DXO	N42° 12' 47.2904", W083° 21' 59.9878"	6.0 W	130	H	IFPA	NO	Enabled	90.5 %	91.6 %
3	CRL	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	DH	IFPA	NO	Enabled	83.7 %	86.1 %
4	JXN	N42° 15' 33.2631", W084° 27' 30.7776"	0.0 E	130	DH	IFPA	NO	Enabled	51 %	52.6 %
5	SVM	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	L	IFPA	NO	Enabled	83.2 %	83.2 %
6	FNT	N42° 58' 00.3594", W083° 44' 49.1561"	6.0 W	130	H	IFPA	NO	Enabled	49.8 %	51.9 %

<b>Flight Check DME Selection</b>						
Distance [NM]	Selected DMEs					Alternate
0.0						
1.1	CRL	SVM				
2.5	SVM	DXO	CRL			
3.3	SVM	DXO				
5.6	SVM	DXO	PSI			
6.4	PSI	JXN	SVM	DXO		
9.1	CRL	DXO	PSI	JXN	SVM	
27.6	CRL	JXN	PSI	DXO		
28.2	JXN	FNT	CRL	PSI	DXO	
43.1	PSI	SVM	FNT	DXO	CRL	
64.3	PSI	CRL	DXO			
66.4	PSI	CRL				
66.9						

**DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA**

<b>Inertial Drift Segments</b>			
#	Start Location	End Location	Length [NM]
1	N42° 12' 06.5192", W083° 22' 17.9291"	N42° 11' 13.7320", W083° 22' 58.9436"	1.0227
2	N42° 45' 57.4668", W082° 55' 23.9260"	N42° 47' 27.1300", W082° 52' 18.9200"	2.7181

<b>Available DMEs by Waypoints</b>			
Waypoint Before	Waypoint After	DME List	Suggested DMEs
KDTW:RW22L:DER	FORDZ	JXN, PSI, DXO, SVM, CRL	
FORDZ	CORVE	JXN, PSI, DXO, SVM, CRL	
CORVE	FRBRD	JXN, PSI, DXO, SVM, CRL	
FRBRD	DINGL	JXN, PSI, DXO, SVM, CRL, FNT	
DINGL	FLOKA	JXN, PSI, DXO, SVM, CRL, FNT	

**User Data Files**

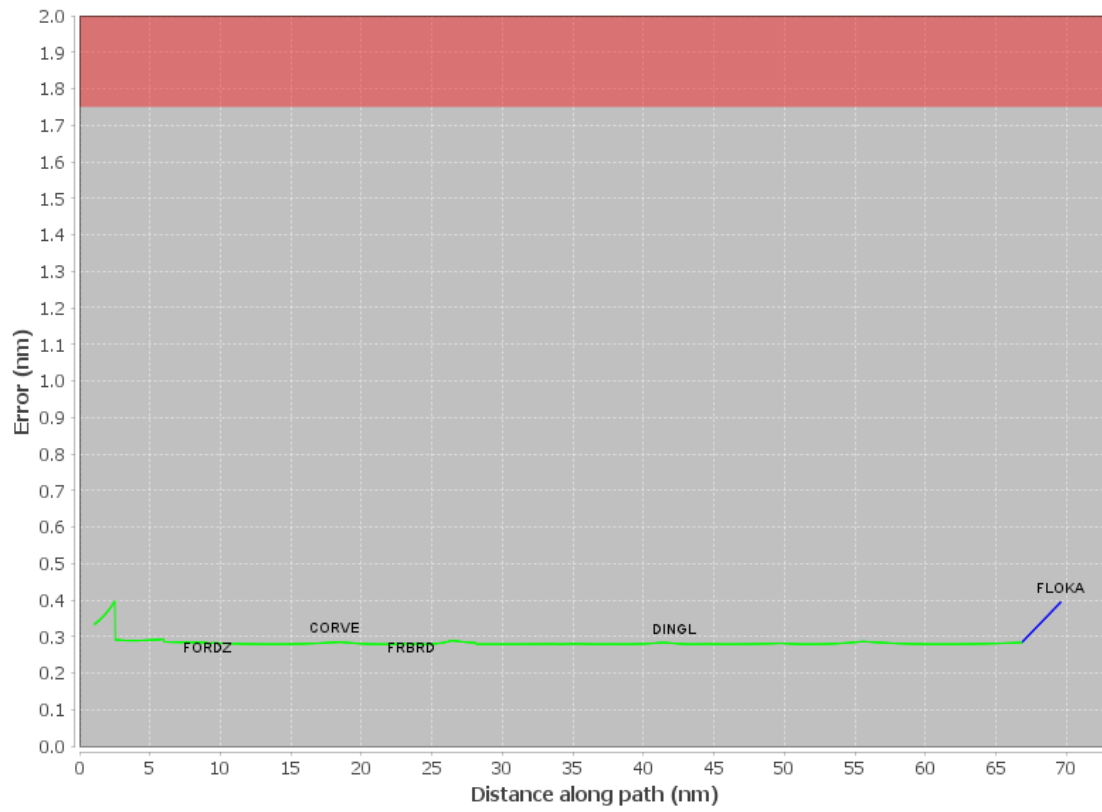
#	File Name
1	UserDMEsKDTW [IFPA] ZETTR4 SID_20230126_0745 CST.udt

**User DMEs**

#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ASP FAA 941131-3 ASP [IFPA]	N44° 26' 56.8613", W083° 23' 39.4201"	-0.0 E	130	625.1	null	ASP FAA 941131-3	
	ESV:	Bearing [True]: 77.0° to 171.0° Bearing [Mag]: 77.0° to 171.0°				Arc Distance: Out to 106.0 NM Altitude: 8600.0 to 20000.0 ft		
2	FNT FAA 691869-026 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-026	
	ESV:	Bearing [True]: 68.0° to 91.0° Bearing [Mag]: 74.0° to 97.0°				Arc Distance: Out to 70.0 NM Altitude: 3000.0 to 15300.0 ft		
3	DKK FAA 712628-011 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-011	
	ESV:	Bearing [True]: 290.0° to 20.0° Bearing [Mag]: 290.0° to 20.0°				Arc Distance: Out to 113.0 NM Altitude: 9500.0 to 16000.0 ft		
4	JFN FAA 704201-29 JFN [IFPA]	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	896.3	null	JFN FAA 704201-29	
	ESV:	Bearing [True]: 354.0° to 7.0° Bearing [Mag]: 354.0° to 7.0°				Arc Distance: Out to 100.0 NM Altitude: 9000.0 to 13000.0 ft		
5	DKK FAA 712628-8 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-8	
	ESV:	Bearing [True]: 316.0° to 335.0° Bearing [Mag]: 316.0° to 335.0°				Arc Distance: Out to 133.0 NM Altitude: 13700.0 to 45000.0 ft		
6	SVM FAA 698158-031 SVM [IFPA]	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	955.6	114.3	SVM FAA 698158-031	
	ESV:	Bearing [True]: 41.0° to 62.0° Bearing [Mag]: 44.0° to 65.0°				Arc Distance: Out to 80.0 NM Altitude: 4000.0 to 19000.0 ft		
7	APN FAA 701321-11 APN [IFPA]	N45° 04' 58.0031", W083° 33' 25.2126"	7.0 W	40	675.7	108.8	APN FAA 701321-11	
	ESV:	Bearing [True]: 101.0° to 141.0° Bearing [Mag]: 108.0° to 148.0°				Arc Distance: Out to 104.0 NM Altitude: 11900.0 to 14000.0 ft		
8	CRL FAA 701373-034 CRL [IFPA]	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	628.4	115.7	CRL FAA 701373-034	
	ESV:	Bearing [True]: 24.0° to 58.0° Bearing [Mag]: 27.0° to 61.0°				Arc Distance: Out to 116.0 NM Altitude: 9000.0 to 16000.0 ft		
9	FNT FAA 691869-18 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-18	
	ESV:	Bearing [True]: 44.0° to 62.0° Bearing [Mag]: 50.0° to 68.0°				Arc Distance: Out to 123.0 NM Altitude: 11900.0 to 20000.0 ft		
10	MBS FAA 704119-29 MBS [IFPA]	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	663	112.9	MBS FAA 704119-29	
	ESV:	Bearing [True]: 105.0° to 116.0° Bearing [Mag]: 108.0° to 119.0°				Arc Distance: Out to 90.0 NM Altitude: 7000.0 to 14500.0 ft		

# DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA

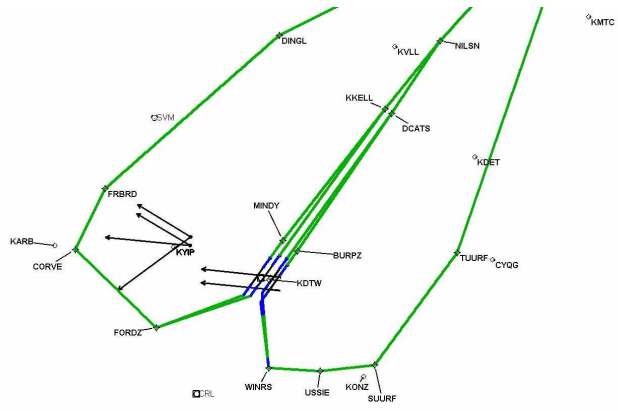
## DME Error





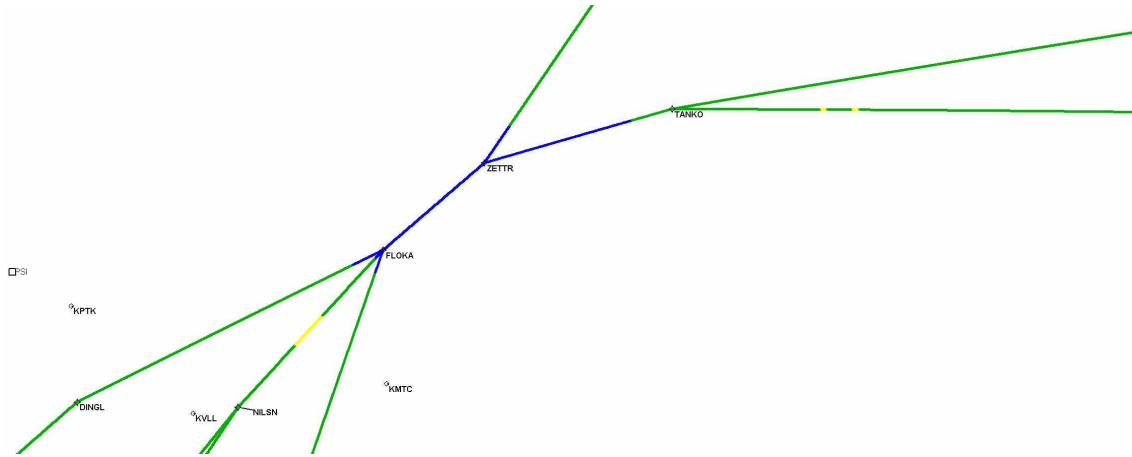
# DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA

Graphic Depiction 1



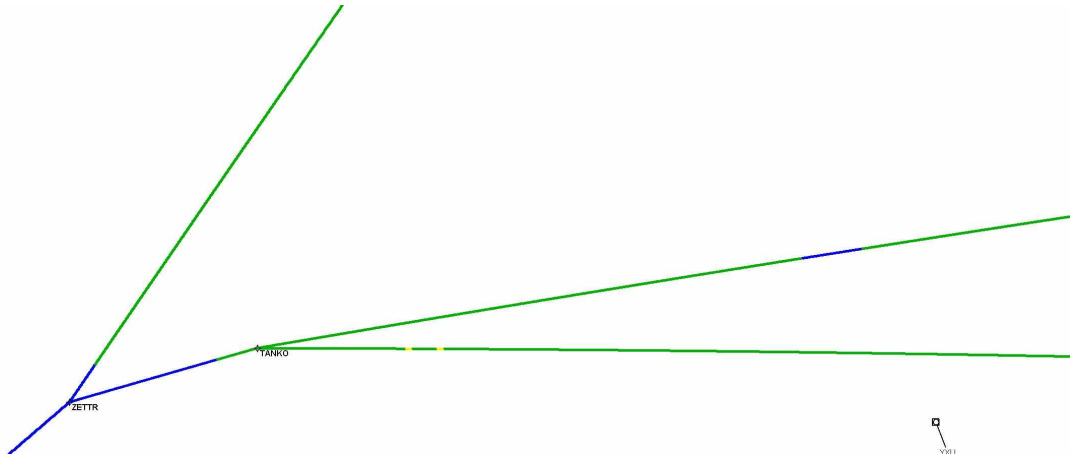
# DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA

Graphic Depiction 2



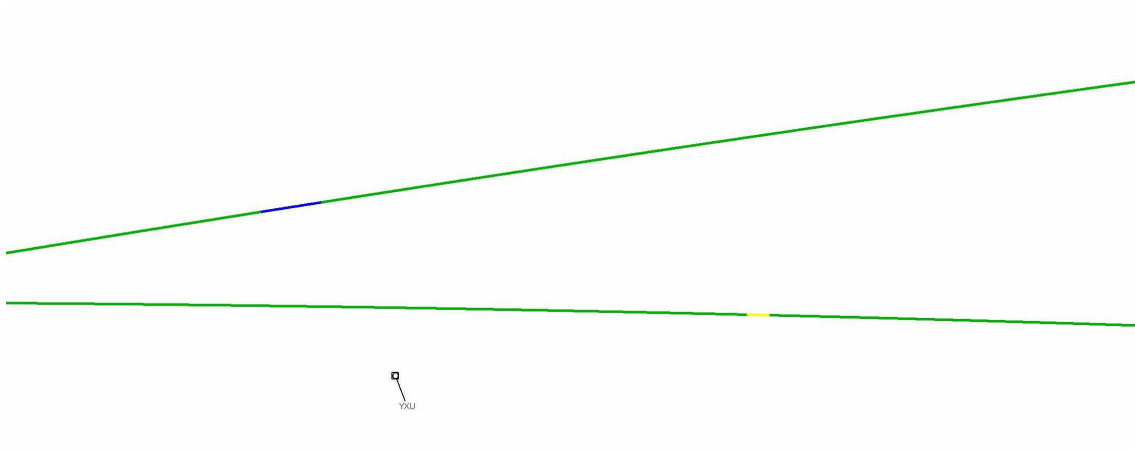
# DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA

Graphic Depiction 3



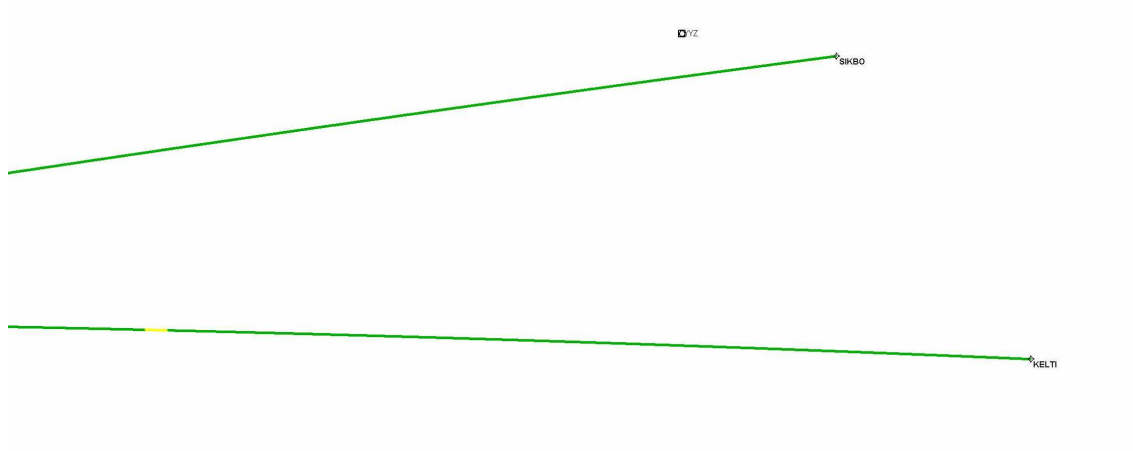
# DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA

Graphic Depiction 4



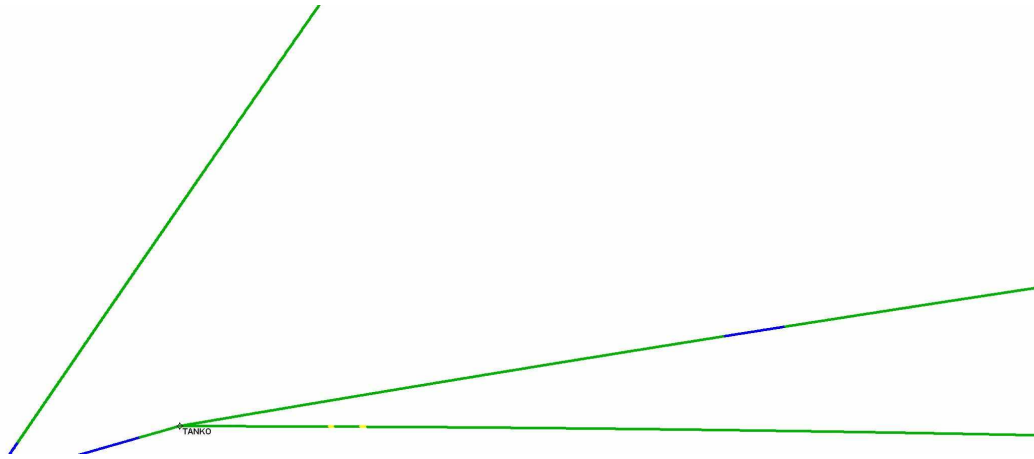
# DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA

Graphic Depiction 5



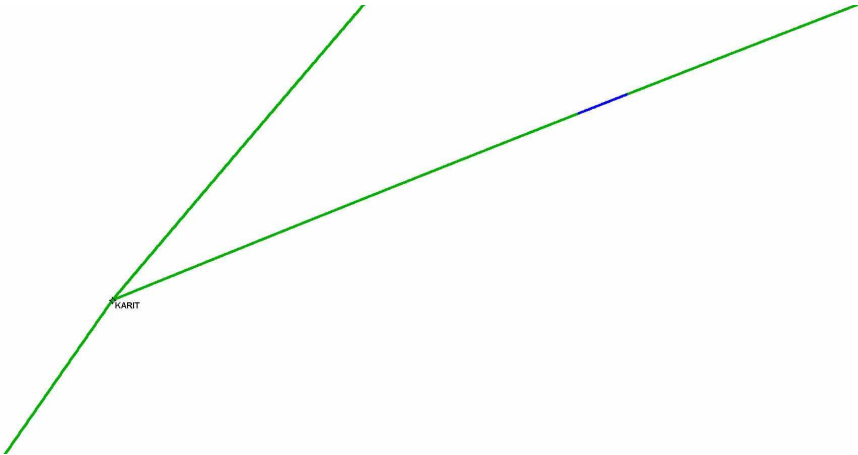
# DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA

Graphic Depiction 6



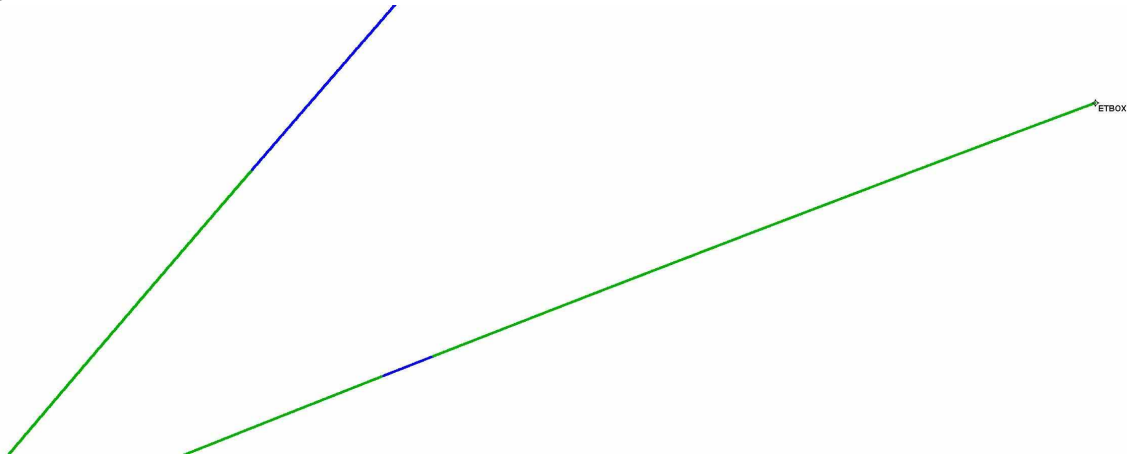
DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA

Graphic Depiction 7



# DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA

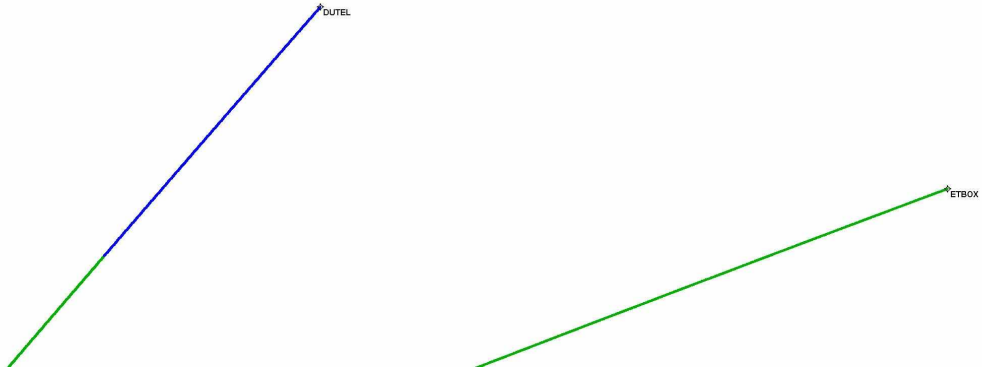
Graphic Depiction 8





# DME DME Assessment Results for ZETTR4 path KDTW:RW22L:DER\_FLOKA

Graphic Depiction 9



## DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ

### Results Summary

Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jose G-CTR Medina
Project File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW ZETTR4 DME(lower MEAs) 20240207.tgs
Output File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW [IFPA] ZETTR4 20240207_1422 CST\KDTW-RW22R- DER_FORDZ\KDTW ZETTR4 SID RW22R FORDZ 20240207_1422 CST.pdf
Procedure Name:	ZETTR4
Software: DmeDmePlugin:	7.2.1
Date/Time:	02/07/2024 14:22 CST
Databases:	DTED LEVEL 0 MAX

### Failures

No Failures

### Warnings

No Warnings

### Informational

No Informational

### Notes For Flight Check

None

### Flight Plan

Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
KDTW:RW22R:DER	WP	N42° 12' 07.8216", W083° 23' 02.4003"	645.2	VNAV	130	FLY_BY	TF
FORDZ	WP	N42° 07' 47.3300", W083° 32' 40.3400"	4000	VNAV	200	FLY_BY	TF

Climb Gradient:  
500.0 ft/NM up to 1146.0 ft MSL  
200.0 ft/NM

### Flyability

Flight Type:	SID
Selected Airport:	KDTW [IFPA]
Climb Gradient:	500.0 ft/NM up to 1146.0 ft MSL 200.0 ft/NM
Speeds:	130 at the Runway DER 145 at the end of the VA or VI leg 200 Ground Speed to 11000 FT 240 Ground Speed to 18000 FT 260 Ground Speed to 24000 FT 340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

**DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ**

<b>DME/DME</b>	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

<b>DME/DME (Continued)</b>										
<b>DMEs Used</b>										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	PSI	N42° 42' 03.0947", W083° 31' 57.9835"	-0.0 E	40	L	IFPA	NO	Enabled	39.3 %	41.5 %
2	DXO	N42° 12' 47.2904", W083° 21' 59.9878"	6.0 W	130	H	IFPA	NO	Enabled	71.3 %	75.3 %
3	CRL	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	DH	IFPA	NO	Enabled	17.2 %	18.2 %
4	JXN	N42° 15' 33.2631", W084° 27' 30.7776"	0.0 E	130	DH	IFPA	NO	Enabled	27 %	28.5 %
5	SVM	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	L	IFPA	NO	Enabled	82.9 %	87.6 %

<b>Flight Check DME Selection</b>						
Distance [NM]	Selected DMEs					Alternate
0.0						
1.1	CRL	SVM				
2.1	SVM	DXO	CRL			
2.7	SVM	DXO				
5.0	SVM	DXO	PSI			
6.1	PSI	JXN	SVM	DXO		

<b>Inertial Drift Segments</b>			
#	Start Location	End Location	Length [NM]
1	N42° 12' 05.9380", W083° 23' 03.7862"	N42° 11' 13.5530", W083° 23' 45.1668"	1.0208

<b>Available DMEs by Waypoints</b>			
Waypoint Before	Waypoint After	DME List	Suggested DMEs
KDTW:RW22R:DER	FORDZ	JXN, PSI, DXO, SVM, CRL	

**DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ**

**User Data Files**

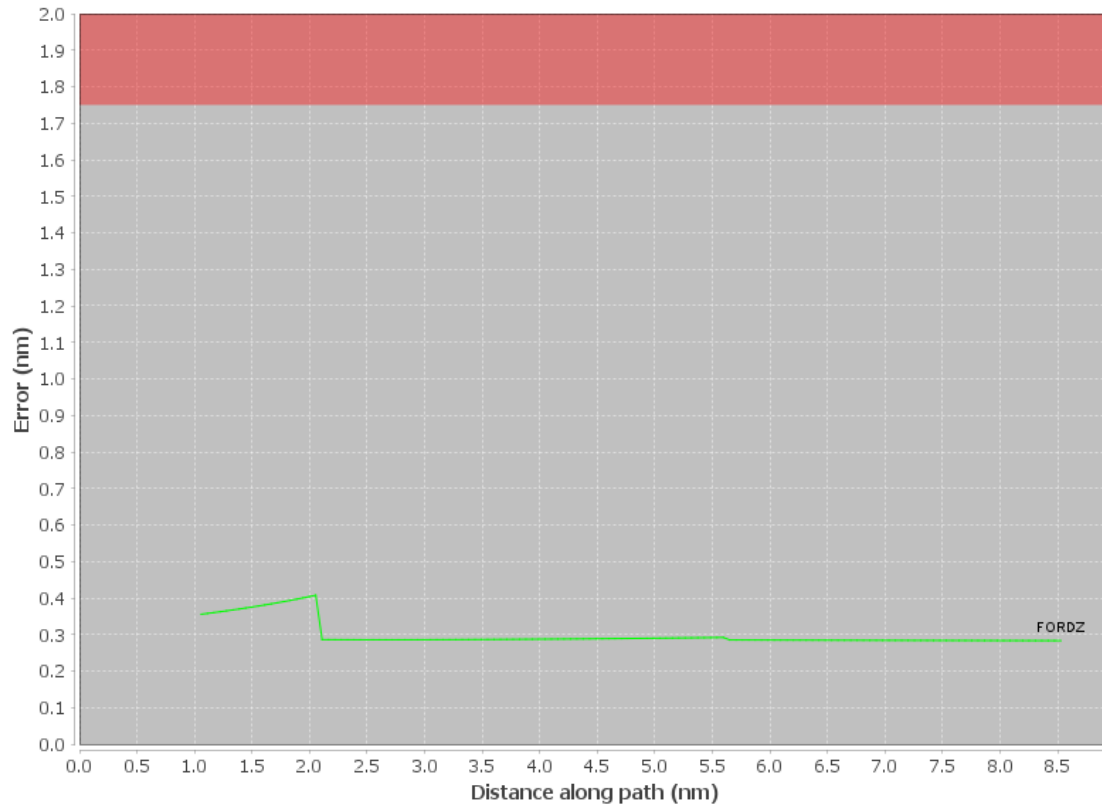
#	File Name
1	UserDMesKDTW [IFPA] ZETTR4 SID_20230126_0745 CST.udt

**User DMEs**

#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ASP FAA 941131-3 ASP [IFPA]	N44° 26' 56.8613", W083° 23' 39.4201"	-0.0 E	130	625.1	null	ASP FAA 941131-3	
	ESV:	Bearing [True]: 77.0° to 171.0° Bearing [Mag]: 77.0° to 171.0°				Arc Distance: Out to 106.0 NM Altitude: 8600.0 to 20000.0 ft		
2	FNT FAA 691869-026 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-026	
	ESV:	Bearing [True]: 68.0° to 91.0° Bearing [Mag]: 74.0° to 97.0°				Arc Distance: Out to 70.0 NM Altitude: 3000.0 to 15300.0 ft		
3	DKK FAA 712628-011 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-011	
	ESV:	Bearing [True]: 290.0° to 20.0° Bearing [Mag]: 290.0° to 20.0°				Arc Distance: Out to 113.0 NM Altitude: 9500.0 to 16000.0 ft		
4	JFN FAA 704201-29 JFN [IFPA]	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	896.3	null	JFN FAA 704201-29	
	ESV:	Bearing [True]: 354.0° to 7.0° Bearing [Mag]: 354.0° to 7.0°				Arc Distance: Out to 100.0 NM Altitude: 9000.0 to 13000.0 ft		
5	DKK FAA 712628-8 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-8	
	ESV:	Bearing [True]: 316.0° to 335.0° Bearing [Mag]: 316.0° to 335.0°				Arc Distance: Out to 133.0 NM Altitude: 13700.0 to 45000.0 ft		
6	SVM FAA 698158-031 SVM [IFPA]	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	955.6	114.3	SVM FAA 698158-031	
	ESV:	Bearing [True]: 41.0° to 62.0° Bearing [Mag]: 44.0° to 65.0°				Arc Distance: Out to 80.0 NM Altitude: 4000.0 to 19000.0 ft		
7	APN FAA 701321-11 APN [IFPA]	N45° 04' 58.0031", W083° 33' 25.2126"	7.0 W	40	675.7	108.8	APN FAA 701321-11	
	ESV:	Bearing [True]: 101.0° to 141.0° Bearing [Mag]: 108.0° to 148.0°				Arc Distance: Out to 104.0 NM Altitude: 11900.0 to 14000.0 ft		
8	CRL FAA 701373-034 CRL [IFPA]	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	628.4	115.7	CRL FAA 701373-034	
	ESV:	Bearing [True]: 24.0° to 58.0° Bearing [Mag]: 27.0° to 61.0°				Arc Distance: Out to 116.0 NM Altitude: 9000.0 to 16000.0 ft		
9	FNT FAA 691869-18 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-18	
	ESV:	Bearing [True]: 44.0° to 62.0° Bearing [Mag]: 50.0° to 68.0°				Arc Distance: Out to 123.0 NM Altitude: 11900.0 to 20000.0 ft		
10	MBS FAA 704119-29 MBS [IFPA]	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	663	112.9	MBS FAA 704119-29	
	ESV:	Bearing [True]: 105.0° to 116.0° Bearing [Mag]: 108.0° to 119.0°				Arc Distance: Out to 90.0 NM Altitude: 7000.0 to 14500.0 ft		

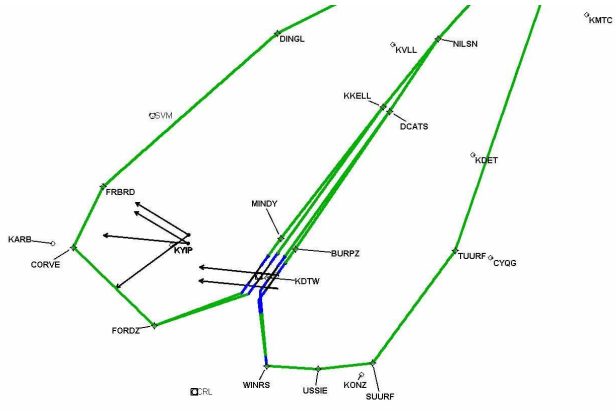
# DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ

## DME Error



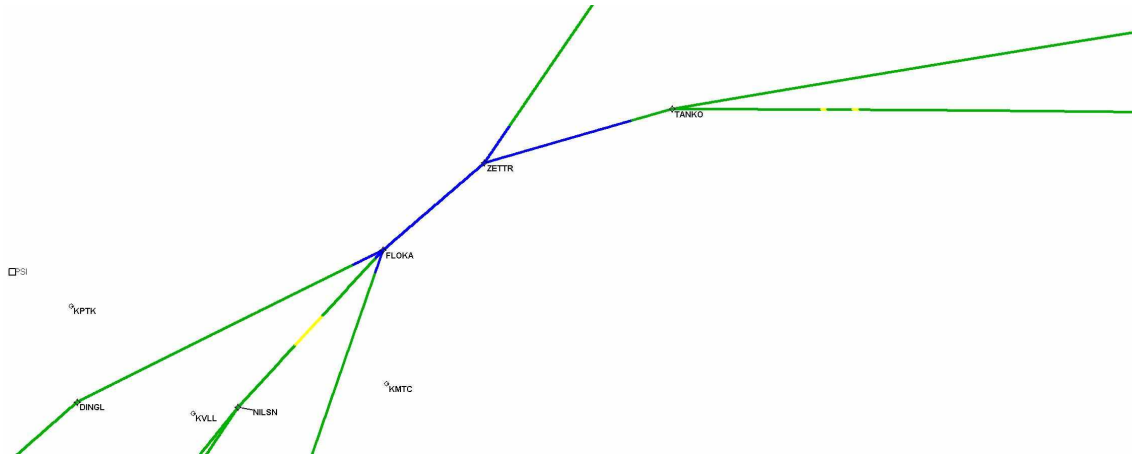
# DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ

Graphic Depiction 1



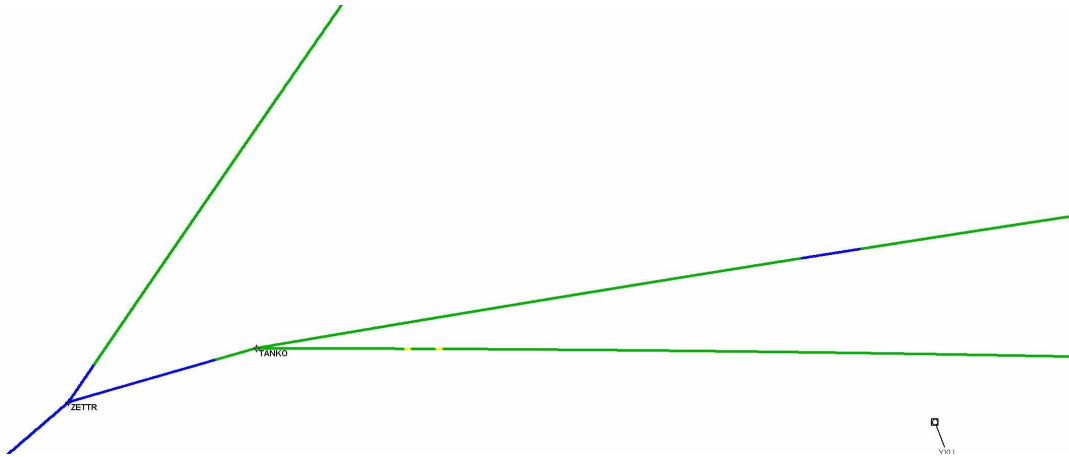
# DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ

Graphic Depiction 2



# DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ

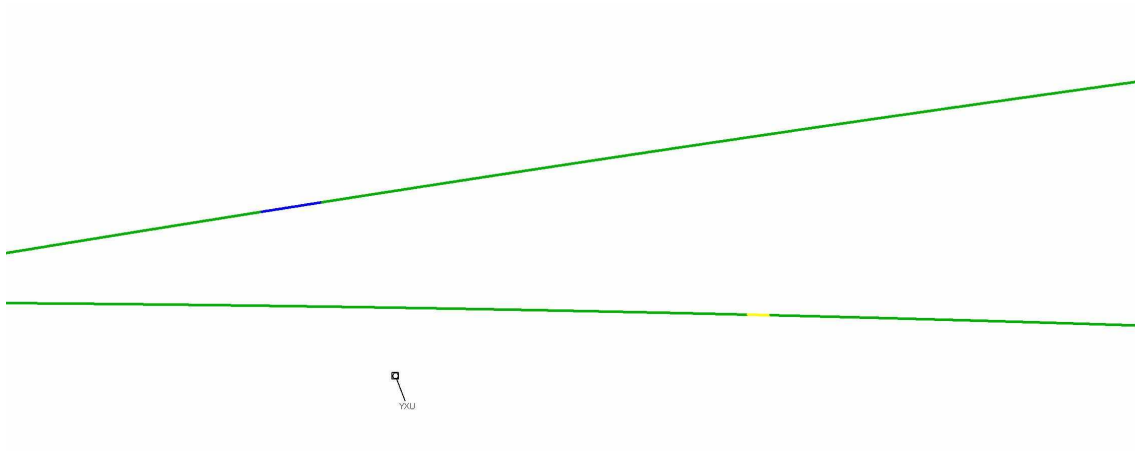
Graphic Depiction 3





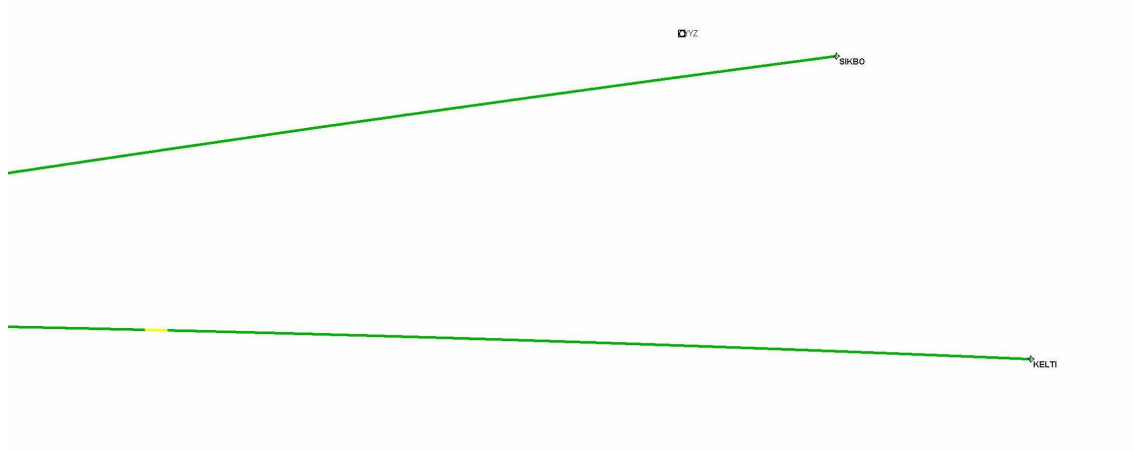
# DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ

Graphic Depiction 4



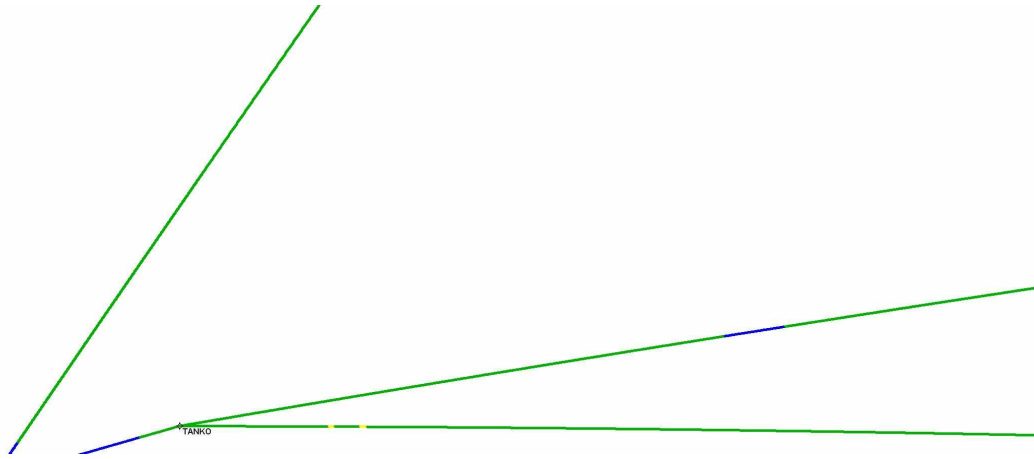
# DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ

Graphic Depiction 5



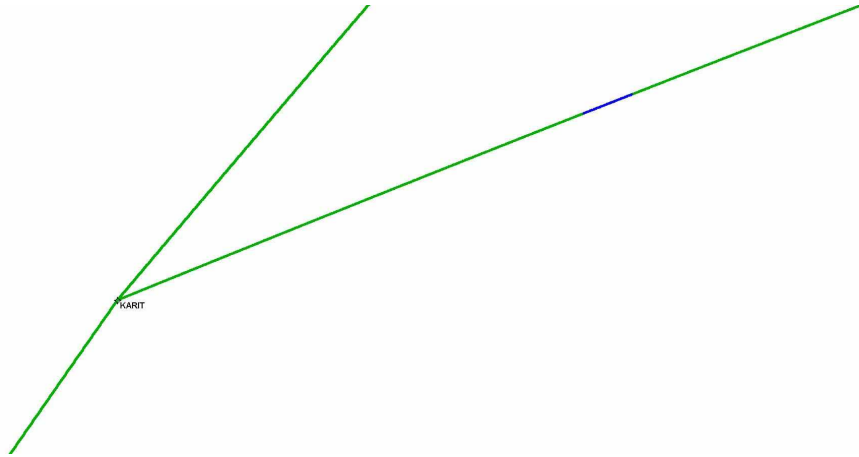
# DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ

Graphic Depiction 6



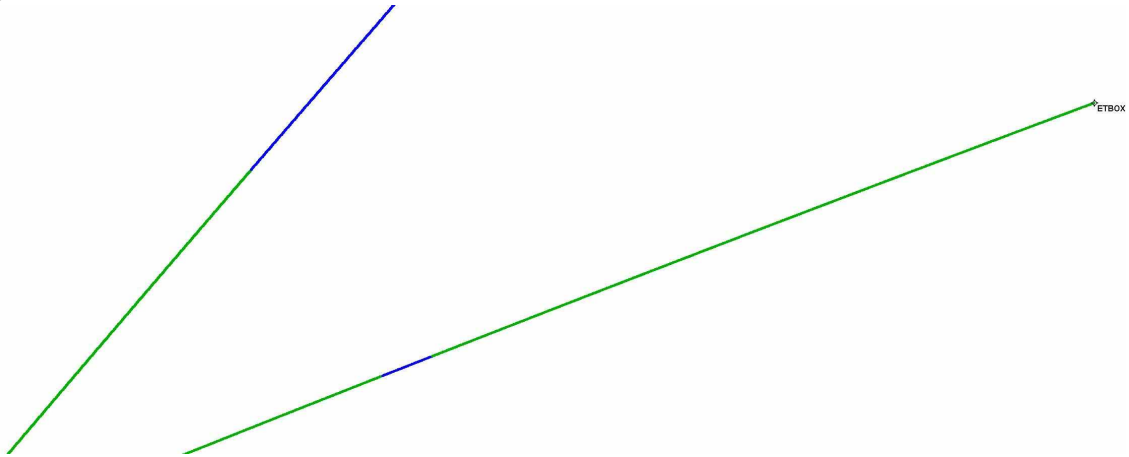
# DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ

Graphic Depiction 7



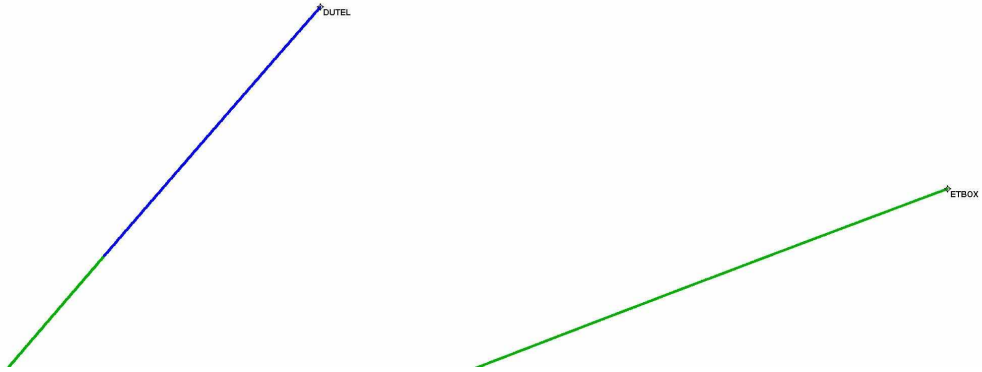
# DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ

Graphic Depiction 8



# DME DME Assessment Results for ZETTR4 path KDTW:RW22R:DER\_FORDZ

Graphic Depiction 9



## DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO

### Results Summary

Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jose G-CTR Medina
Project File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW ZETTR4 DME(lower MEAs) 20240207.tgs
Output File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW [IFPA] ZETTR4 20240207_1422 CST\TANKO_SIKBO\KDTW ZETTR4 SID TANKO SIKBO 20240207_1422 CST.pdf
Procedure Name:	ZETTR4
Software: DmeDmePlugin:	7.2.1
Date/Time:	02/07/2024 14:22 CST
Databases:	DTED LEVEL 0 MAX

### Failures

No Failures

### Warnings

No Warnings

### Informational

No Informational

### Notes For Flight Check

None

### Flight Plan

Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
TANKO	WP	N43° 01' 32.4800", W082° 23' 02.3800"	7118.8	VNAV	200	FLY_BY	TF
SIKBO	WP	N43° 39' 13.0000", W079° 20' 57.0000"	10000	VNAV	200	FLY_BY	TF

### Flyability

Flight Type:	SID
Selected Airport:	KDTW [IFPA]
Climb Gradient:	None assigned
Speeds:	130 at the Runway DER
	145 at the end of the VA or VI leg
	200 Ground Speed to 11000 FT
	240 Ground Speed to 18000 FT
	260 Ground Speed to 24000 FT
	340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

**DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO**

<b>DME/DME</b>	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

<b>DME/DME (Continued)</b>										
<b>DMEs Used</b>										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	JFN	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	L	IFPA	NO	Enabled	4.5 %	4.5 %
2	BUF	N42° 55' 44.3694", W078° 38' 46.8581"	0.0 E	130	DH	IFPA	NO	Enabled	54.8 %	54.8 %
3	CRL	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	DH	IFPA	NO	Enabled	31.7 %	31.7 %
4	MBS	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	L	IFPA	NO	Enabled	7 %	7 %
5	YXU	N43° 02' 16.4780", W081° 08' 56.1466"	8.0 W	130	H	IFPA	NO	Enabled	47.8 %	47.8 %
6	SVM	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	L	IFPA	NO	Enabled	10.6 %	10.6 %
7	YYZ	N43° 39' 28.8735", W079° 37' 53.1527"	10.0 W	130	H	IFPA	NO	Enabled	32.5 %	32.5 %
8	DKK	N42° 29' 25.4400", W079° 16' 26.7700"	0.0 E	130	DH	IFPA	NO	Enabled	70.1 %	70.1 %
9	FNT	N42° 58' 00.3594", W083° 44' 49.1561"	6.0 W	130	H	IFPA	NO	Enabled	6.8 %	6.8 %
10	ASP	N44° 26' 56.8613", W083° 23' 39.4201"	0.0 E	130	DH	IFPA	NO	Enabled	16.8 %	16.8 %



**DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO**

<b>Flight Check DME Selection</b>						
<b>Distance [NM]</b>	<b>Selected DMEs</b>					<b>Alternate</b>
0.0	MBS	CRL	SVM	FNT		
7.4	ASP	SVM	MBS	CRL	FNT	
9.4	SVM	ASP	CRL	MBS		
9.8	SVM	ASP	CRL			
14.6	CRL	ASP				
16.9	CRL	ASP	YXU			
30.7	YXU	CRL				
36.3	YXU	CRL	DKK			
43.9						
48.7	YXU	DKK				
62.4	YXU	DKK	BUF			
65.2	YXU	DKK	BUF	JFN		
71.6	YXU	DKK	BUF			
86.9	YXU	DKK	YYZ	BUF		
87.8	YYZ	DKK	BUF			
123.4	BUF	DKK				
129.7	YYZ	DKK	BUF			

<b>Inertial Drift Segments</b>			
<b>#</b>	<b>Start Location</b>	<b>End Location</b>	<b>Length [NM]</b>
1	N43° 14' 02.4234", W081° 25' 34.0061"	N43° 15' 23.2049", W081° 19' 12.9948"	4.8325

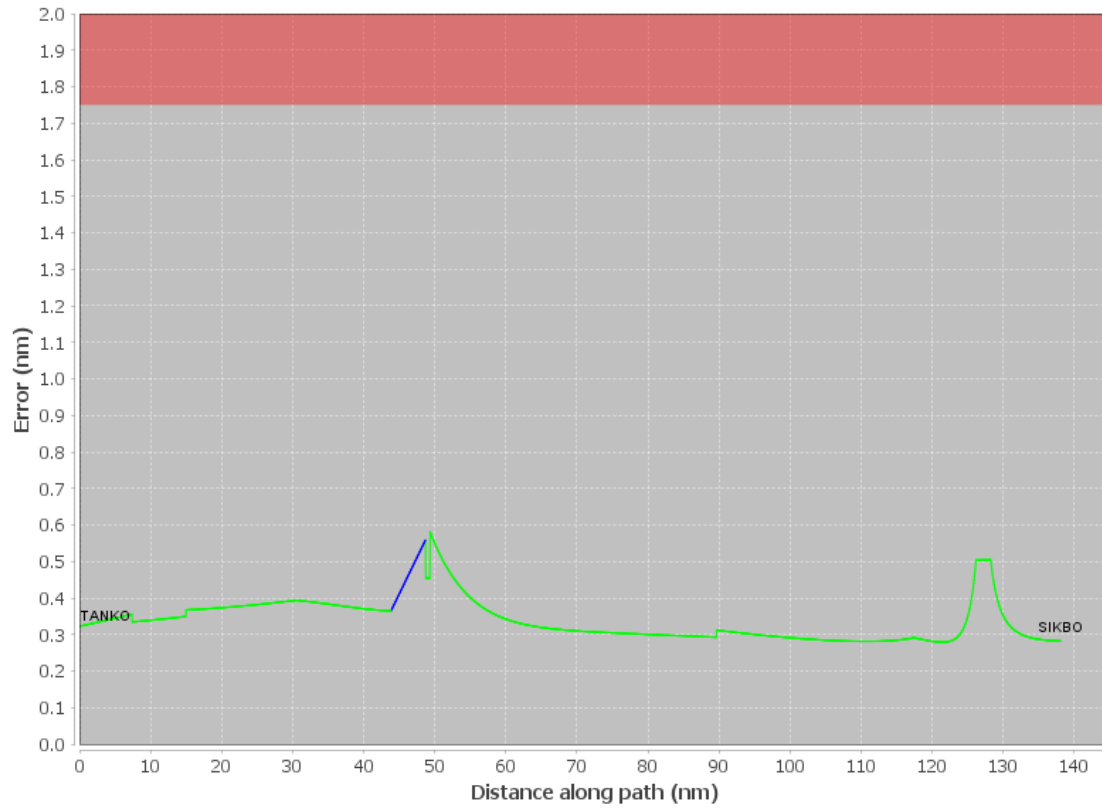
<b>Available DMEs by Waypoints</b>			
<b>Waypoint Before</b>	<b>Waypoint After</b>	<b>DME List</b>	<b>Suggested DMEs</b>
TANKO	SIKBO	BUF, JFN, DKK, YXU, SVM, YYZ, CRL, FNT, ASP, MBS	

**DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO**

<b>User Data Files</b>								
#	File Name							
1	UserDMEsKDTW [IFPA] ZETTR4 SID_20230126_0745 CST.udt							
<b>User DMEs</b>								
#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ASP FAA 941131-3 ASP [IFPA]	N44° 26' 56.8613", W083° 23' 39.4201"	-0.0 E	130	625.1	null	ASP FAA 941131-3	
	ESV:	Bearing [True]: 77.0° to 171.0° Bearing [Mag]: 77.0° to 171.0°				Arc Distance: Out to 106.0 NM Altitude: 8600.0 to 20000.0 ft		
2	FNT FAA 691869-026 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-026	
	ESV:	Bearing [True]: 68.0° to 91.0° Bearing [Mag]: 74.0° to 97.0°				Arc Distance: Out to 70.0 NM Altitude: 3000.0 to 15300.0 ft		
3	DKK FAA 712628-011 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-011	
	ESV:	Bearing [True]: 290.0° to 20.0° Bearing [Mag]: 290.0° to 20.0°				Arc Distance: Out to 113.0 NM Altitude: 9500.0 to 16000.0 ft		
4	JFN FAA 704201-29 JFN [IFPA]	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	896.3	null	JFN FAA 704201-29	
	ESV:	Bearing [True]: 354.0° to 7.0° Bearing [Mag]: 354.0° to 7.0°				Arc Distance: Out to 100.0 NM Altitude: 9000.0 to 13000.0 ft		
5	DKK FAA 712628-8 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-8	
	ESV:	Bearing [True]: 316.0° to 335.0° Bearing [Mag]: 316.0° to 335.0°				Arc Distance: Out to 133.0 NM Altitude: 13700.0 to 45000.0 ft		
6	SVM FAA 698158-031 SVM [IFPA]	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	955.6	114.3	SVM FAA 698158-031	
	ESV:	Bearing [True]: 41.0° to 62.0° Bearing [Mag]: 44.0° to 65.0°				Arc Distance: Out to 80.0 NM Altitude: 4000.0 to 19000.0 ft		
7	APN FAA 701321-11 APN [IFPA]	N45° 04' 58.0031", W083° 33' 25.2126"	7.0 W	40	675.7	108.8	APN FAA 701321-11	
	ESV:	Bearing [True]: 101.0° to 141.0° Bearing [Mag]: 108.0° to 148.0°				Arc Distance: Out to 104.0 NM Altitude: 11900.0 to 14000.0 ft		
8	CRL FAA 701373-034 CRL [IFPA]	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	628.4	115.7	CRL FAA 701373-034	
	ESV:	Bearing [True]: 24.0° to 58.0° Bearing [Mag]: 27.0° to 61.0°				Arc Distance: Out to 116.0 NM Altitude: 9000.0 to 16000.0 ft		
9	FNT FAA 691869-18 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-18	
	ESV:	Bearing [True]: 44.0° to 62.0° Bearing [Mag]: 50.0° to 68.0°				Arc Distance: Out to 123.0 NM Altitude: 11900.0 to 20000.0 ft		
10	MBS FAA 704119-29 MBS [IFPA]	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	663	112.9	MBS FAA 704119-29	
	ESV:	Bearing [True]: 105.0° to 116.0° Bearing [Mag]: 108.0° to 119.0°				Arc Distance: Out to 90.0 NM Altitude: 7000.0 to 14500.0 ft		

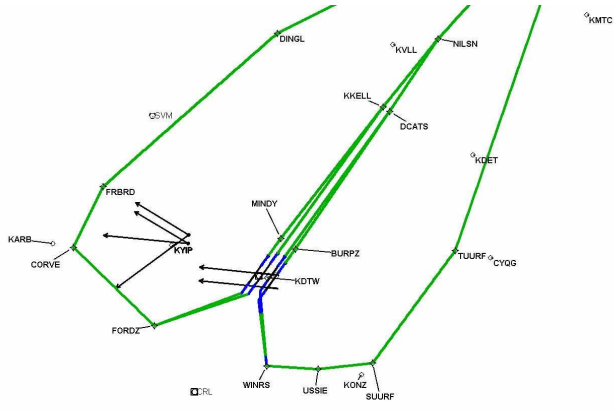
# DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO

## DME Error



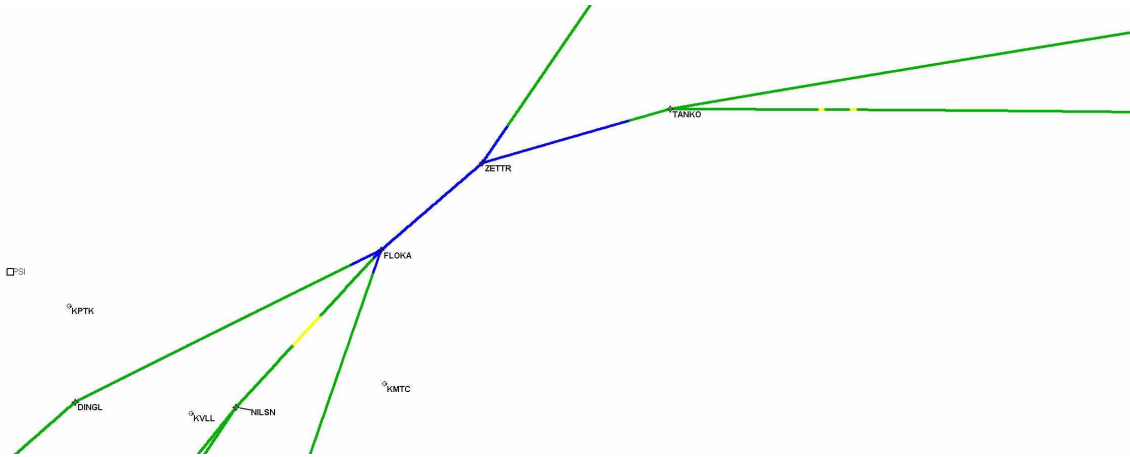
# DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO

Graphic Depiction 1



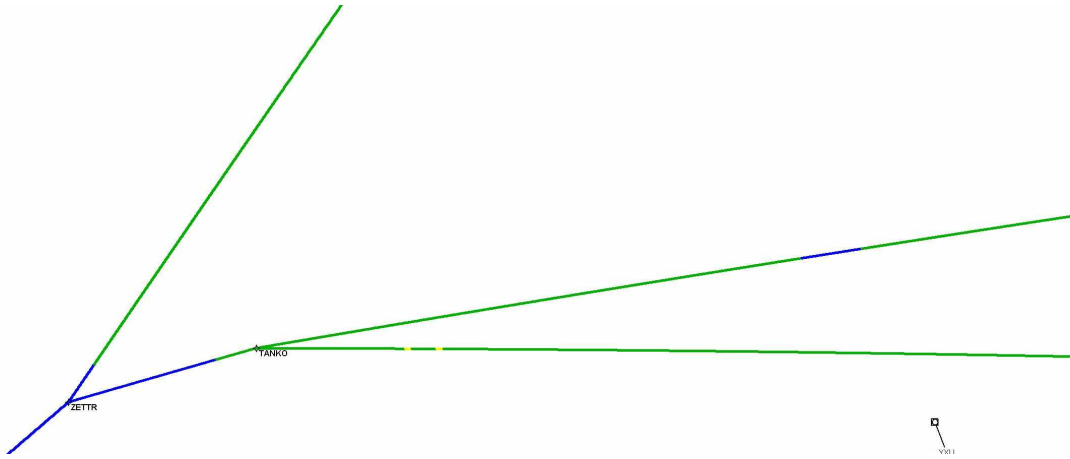
# DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO

Graphic Depiction 2



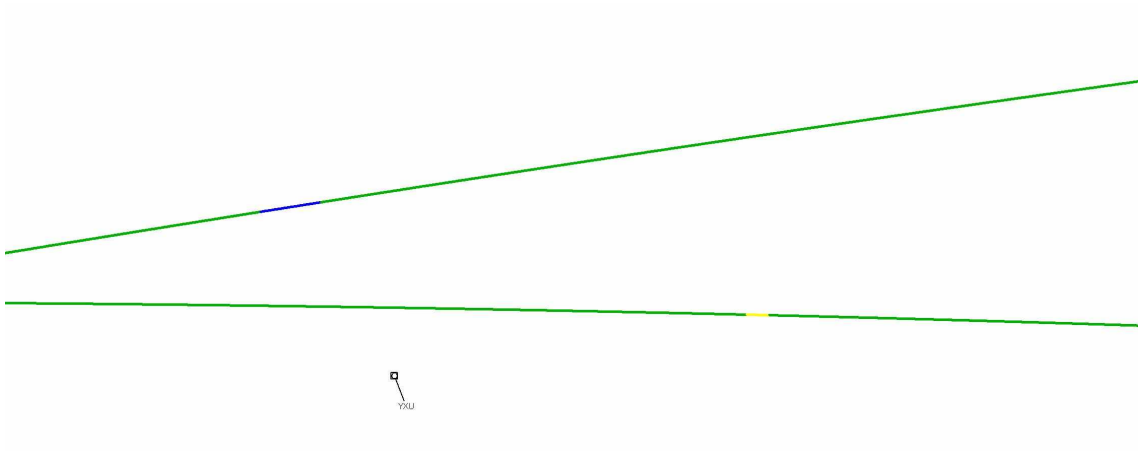
# DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO

Graphic Depiction 3



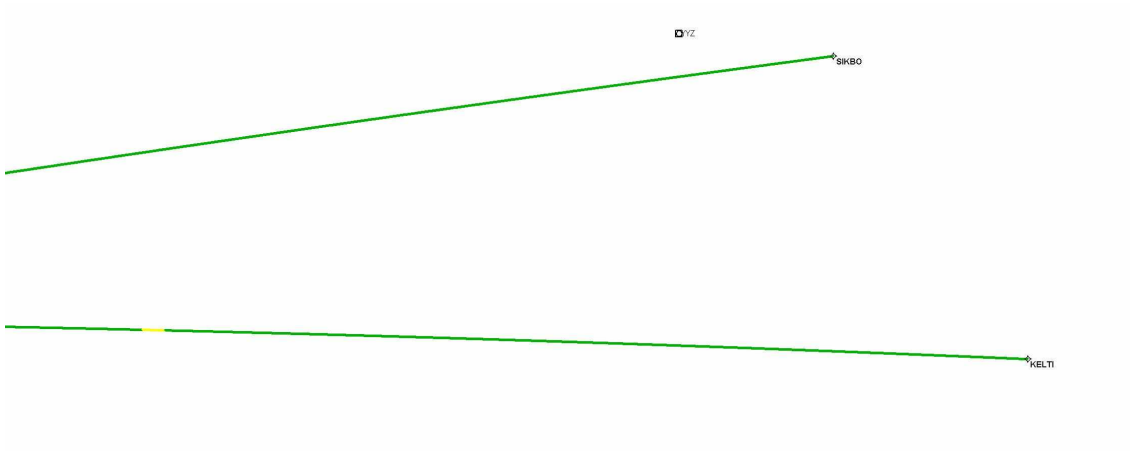
# DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO

Graphic Depiction 4



# DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO

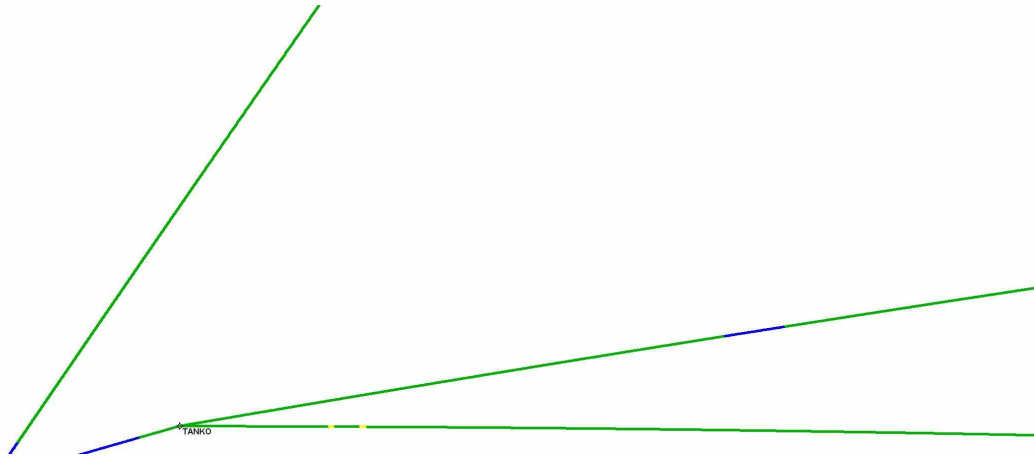
Graphic Depiction 5





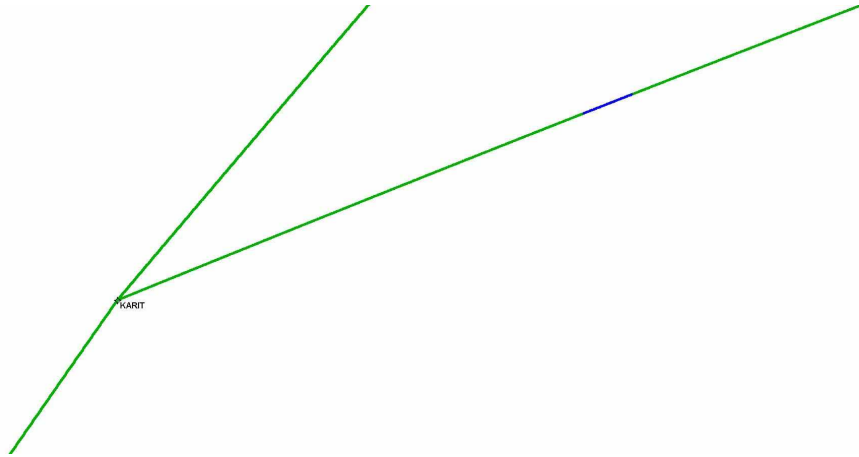
# DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO

Graphic Depiction 6



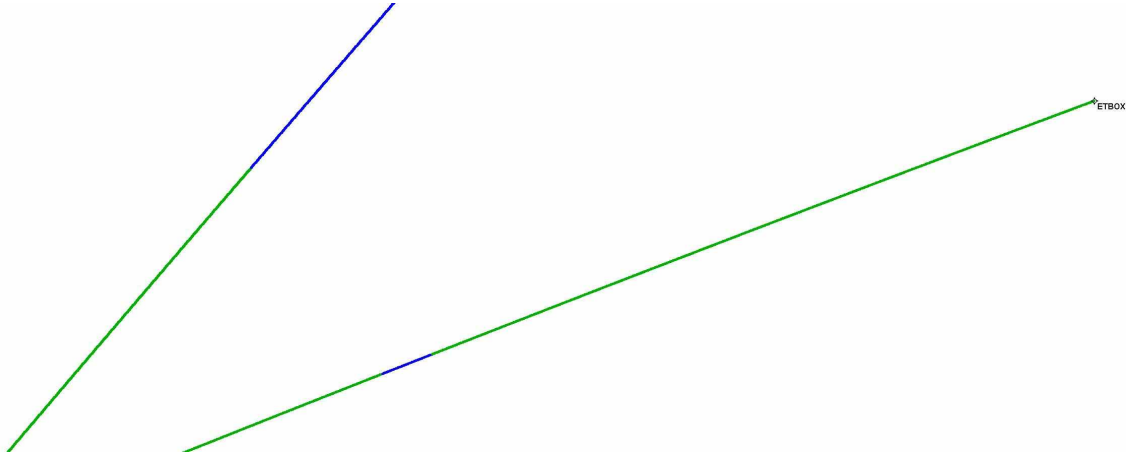
# DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO

Graphic Depiction 7



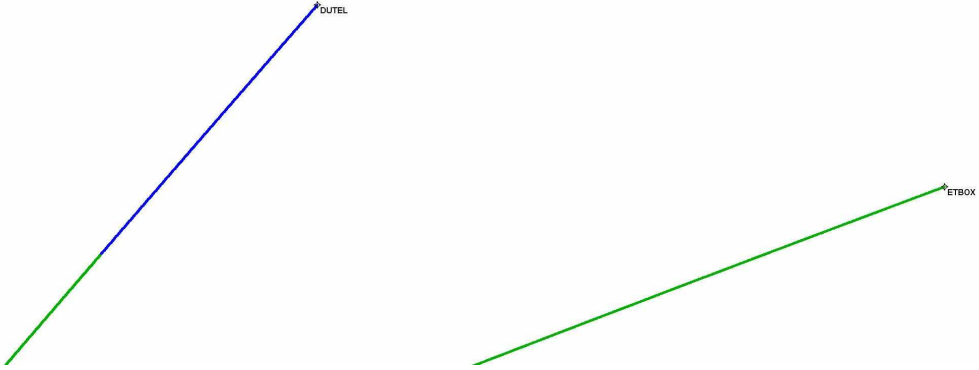
DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO

Graphic Depiction 8



# DME DME Assessment Results for ZETTR4 path TANKO\_SIKBO

Graphic Depiction 9



## DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI

Results Summary	
Flyability:	Completed
DME/DME:	Completed - No Critical DMEs
Name:	Jose G-CTR Medina
Project File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW ZETTR4 DME(lower MEAs) 20240207.tgs
Output File:	C:\Users\Jose G-CTR Medina\OneDrive - Federal Aviation Administration\Documents\01. Projects\DME EVALUATIONS\KDTW 20230125\DME Screens\Submitted\New DMEs\Possible solutions\KDTW ZETTR DME\KDTW [IFPA] ZETTR4 20240207_1422 CST\ZETTR_KELTI\KDTW ZETTR4 SID ZETTR KELTI 20240207_1422 CST.pdf
Procedure Name:	ZETTR4
Software: DmeDmePlugin:	7.2.1
Date/Time:	02/07/2024 14:22 CST
Databases:	DTED LEVEL 0 MAX

Failures
No Failures

Warnings
No Warnings

Informational
No Informational

Notes For Flight Check
None

Flight Plan							
Name	Type	Lat/Lon	Altitude (ft)	VNAV Mode	Ground Speed (kts)	Turn Type	Leg Type
ZETTR	WP	N42° 55' 23.5900", W082° 42' 33.7100"	4000	VNAV	200	FLY_BY	TF
TANKO	WP	N43° 01' 32.4800", W082° 23' 02.3800"	7118.8	VNAV	200	FLY_BY	TF
KELTI	WP	N43° 16' 57.0000", W078° 56' 00.0000"	10000	VNAV	200	FLY_BY	TF

Flyability	
Flight Type:	SID
Selected Airport:	KDTW [IFPA]
Climb Gradient:	None assigned
Speeds:	130 at the Runway DER
	145 at the end of the VA or VI leg
	200 Ground Speed to 11000 FT
	240 Ground Speed to 18000 FT
	260 Ground Speed to 24000 FT
	340 Ground Speed above 24000 FT
Descent During a Turn:	Allowed
VNAV Mode:	Flight Plan

**DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI**

<b>DME/DME</b>	
RNP:	RNP 2
Flight Mode:	Manual
Line of Sight (DTED Level 0 Max):	Evaluated
Inertial Drift:	Enabled
Initial Drift:	0.558 NM
INS Drift Rate:	8.0 NM/Hour
Range Mode:	OSV
RNP Edges:	Evaluated
Min DME Range:	3.0 NM
DME Types:	DME, VOR-DME, VORTAC
DME Include Angles:	30 to 150
Critical DMEs:	Allowed
DoD Facilities:	Not included
Foreign Facilities:	Included
High DMEs:	Included
Low DMEs:	Included
Terminal DMEs:	Included
Flight Check DMEs:	Not selected
Higher Altitudes:	Not Evaluated
Near Maximum Altitude:	Not Evaluated
Automatic ESVs:	Not enabled
Disabled DMEs:	None

<b>DME/DME (Continued)</b>										
<b>DMEs Used</b>										
#	Name	Lat/Lon	MAGVAR	Range	Type	Source	Critical	Status	Time	Distance
1	JFN	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	L	IFPA	NO	Enabled	4.5 %	4.5 %
2	BUF	N42° 55' 44.3694", W078° 38' 46.8581"	0.0 E	130	DH	IFPA	NO	Enabled	51.7 %	51.7 %
3	CXR	N41° 31' 00.9405", W081° 09' 47.4692"	5.0 W	130	DH	IFPA	NO	Enabled	37.1 %	37.1 %
4	CRL	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	DH	IFPA	NO	Enabled	30 %	30 %
5	MBS	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	L	IFPA	NO	Enabled	5.8 %	5.8 %
6	YXU	N43° 02' 16.4780", W081° 08' 56.1466"	8.0 W	130	H	IFPA	NO	Enabled	42.2 %	42.2 %
7	SVM	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	L	IFPA	NO	Enabled	9.3 %	9.3 %
8	YYZ	N43° 39' 28.8735", W079° 37' 53.1527"	10.0 W	130	H	IFPA	NO	Enabled	29.4 %	29.4 %
9	DKK	N42° 29' 25.4400", W079° 16' 26.7700"	0.0 E	130	DH	IFPA	NO	Enabled	69 %	69 %
10	FNT	N42° 58' 00.3594", W083° 44' 49.1561"	6.0 W	130	H	IFPA	NO	Enabled	7.8 %	7.8 %
11	ASP	N44° 26' 56.8613", W083° 23' 39.4201"	0.0 E	130	DH	IFPA	NO	Enabled	9.1 %	9.1 %

**DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI**

<b>Flight Check DME Selection</b>						
<b>Distance [NM]</b>	<b>Selected DMEs</b>					<b>Alternate</b>
0.0						
12.2	FNT	CRL	SVM			
15.0	MBS	CRL	SVM	FNT		
23.0	ASP	SVM	MBS	CRL	FNT	
24.9	ASP	SVM	CRL	FNT		
25.4	ASP	SVM	CRL			
27.5	SVM	ASP	CXR	CRL		
27.9	CRL	ASP				
29.8	CRL	ASP	CXR			
29.9	CRL	ASP	YXU	CXR		
30.5	CRL	ASP	CXR			
30.7	YXU	CXR	CRL	ASP		
38.3	YXU	CXR	CRL			
52.1	YXU	CXR	CRL	DKK		
62.7	YXU	CXR	DKK			
64.9	CXR	DKK				
72.3	YXU	DKK	CXR			
73.1	YXU	DKK	BUF	CXR		
90.0	JFN	YXU	BUF	DKK		
97.6	YXU	DKK	BUF	CXR		
99.4	YXU	DKK				
107.4	YXU	DKK	BUF			
108.7	BUF	DKK				
111.9	YYZ	DKK	BUF			
147.1	BUF	DKK				
152.9	BUF	DKK	YYZ			
167.1	BUF	DKK				

<b>Inertial Drift Segments</b>			
<b>#</b>	<b>Start Location</b>	<b>End Location</b>	<b>Length [NM]</b>
1	N42° 55' 23.5900", W082° 42' 33.7100"	N43° 00' 12.6844", W082° 27' 16.9849"	12.2088

<b>Available DMEs by Waypoints</b>			
<b>Waypoint Before</b>	<b>Waypoint After</b>	<b>DME List</b>	<b>Suggested DMEs</b>
ZETTR	TANKO	SVM, CRL, FNT, MBS	
TANKO	KELTI	BUF, JFN, DKK, YXU, SVM, YYZ, CRL, CXR, FNT, ASP, MBS	

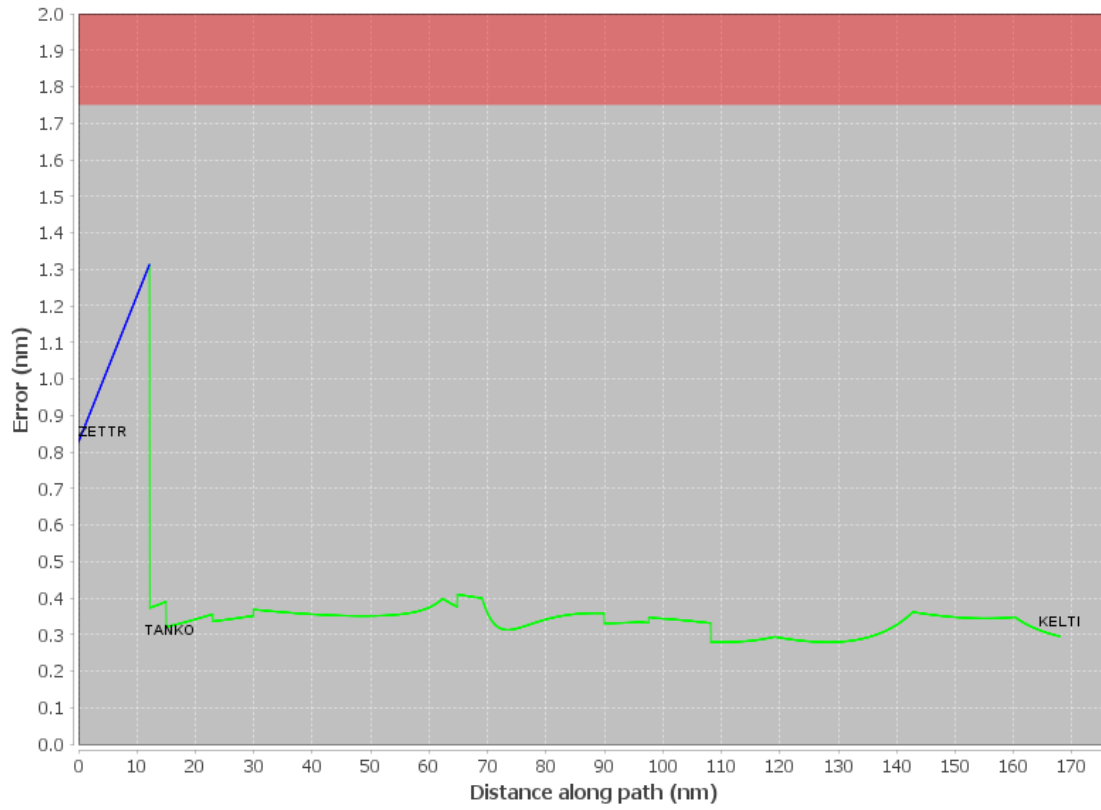
**DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI**

<b>User Data Files</b>								
#	File Name							
1	UserDMEsKDTW [IFPA] ZETTR4 SID_20230126_0745 CST.udt							
<b>User DMEs</b>								
#	Name	Lat/Lon	MAGVAR	Range	Elevation [ft]	Frequency	Replaces	Status
1	ASP FAA 941131-3 ASP [IFPA]	N44° 26' 56.8613", W083° 23' 39.4201"	-0.0 E	130	625.1	null	ASP FAA 941131-3	
	ESV:	Bearing [True]: 77.0° to 171.0° Bearing [Mag]: 77.0° to 171.0°				Arc Distance: Out to 106.0 NM Altitude: 8600.0 to 20000.0 ft		
2	FNT FAA 691869-026 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-026	
	ESV:	Bearing [True]: 68.0° to 91.0° Bearing [Mag]: 74.0° to 97.0°				Arc Distance: Out to 70.0 NM Altitude: 3000.0 to 15300.0 ft		
3	DKK FAA 712628-011 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-011	
	ESV:	Bearing [True]: 290.0° to 20.0° Bearing [Mag]: 290.0° to 20.0°				Arc Distance: Out to 113.0 NM Altitude: 9500.0 to 16000.0 ft		
4	JFN FAA 704201-29 JFN [IFPA]	N41° 45' 36.4216", W080° 44' 53.2002"	0.0 E	40	896.3	null	JFN FAA 704201-29	
	ESV:	Bearing [True]: 354.0° to 7.0° Bearing [Mag]: 354.0° to 7.0°				Arc Distance: Out to 100.0 NM Altitude: 9000.0 to 13000.0 ft		
5	DKK FAA 712628-8 DKK [IFPA]	N42° 29' 25.4400", W079° 16' 26.7700"	-0.0 E	130	681	null	DKK FAA 712628-8	
	ESV:	Bearing [True]: 316.0° to 335.0° Bearing [Mag]: 316.0° to 335.0°				Arc Distance: Out to 133.0 NM Altitude: 13700.0 to 45000.0 ft		
6	SVM FAA 698158-031 SVM [IFPA]	N42° 24' 31.1055", W083° 35' 38.0455"	3.0 W	40	955.6	114.3	SVM FAA 698158-031	
	ESV:	Bearing [True]: 41.0° to 62.0° Bearing [Mag]: 44.0° to 65.0°				Arc Distance: Out to 80.0 NM Altitude: 4000.0 to 19000.0 ft		
7	APN FAA 701321-11 APN [IFPA]	N45° 04' 58.0031", W083° 33' 25.2126"	7.0 W	40	675.7	108.8	APN FAA 701321-11	
	ESV:	Bearing [True]: 101.0° to 141.0° Bearing [Mag]: 108.0° to 148.0°				Arc Distance: Out to 104.0 NM Altitude: 11900.0 to 14000.0 ft		
8	CRL FAA 701373-034 CRL [IFPA]	N42° 02' 52.8956", W083° 27' 27.2625"	3.0 W	130	628.4	115.7	CRL FAA 701373-034	
	ESV:	Bearing [True]: 24.0° to 58.0° Bearing [Mag]: 27.0° to 61.0°				Arc Distance: Out to 116.0 NM Altitude: 9000.0 to 16000.0 ft		
9	FNT FAA 691869-18 FNT [IFPA]	N42° 58' 00.3797", W083° 44' 49.0832"	6.0 W	130	771.5	116.9	FNT FAA 691869-18	
	ESV:	Bearing [True]: 44.0° to 62.0° Bearing [Mag]: 50.0° to 68.0°				Arc Distance: Out to 123.0 NM Altitude: 11900.0 to 20000.0 ft		
10	MBS FAA 704119-29 MBS [IFPA]	N43° 31' 53.9337", W084° 04' 38.2910"	3.0 W	40	663	112.9	MBS FAA 704119-29	
	ESV:	Bearing [True]: 105.0° to 116.0° Bearing [Mag]: 108.0° to 119.0°				Arc Distance: Out to 90.0 NM Altitude: 7000.0 to 14500.0 ft		



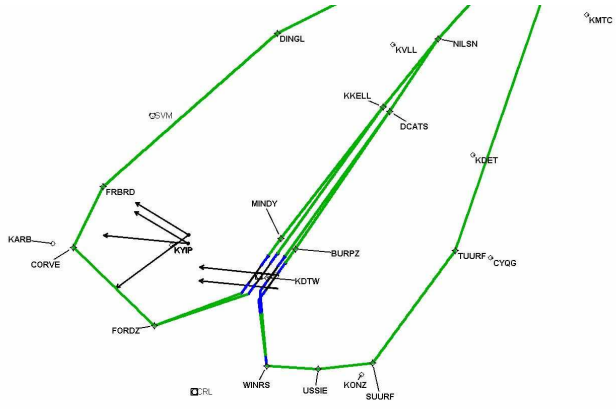
# DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI

## DME Error



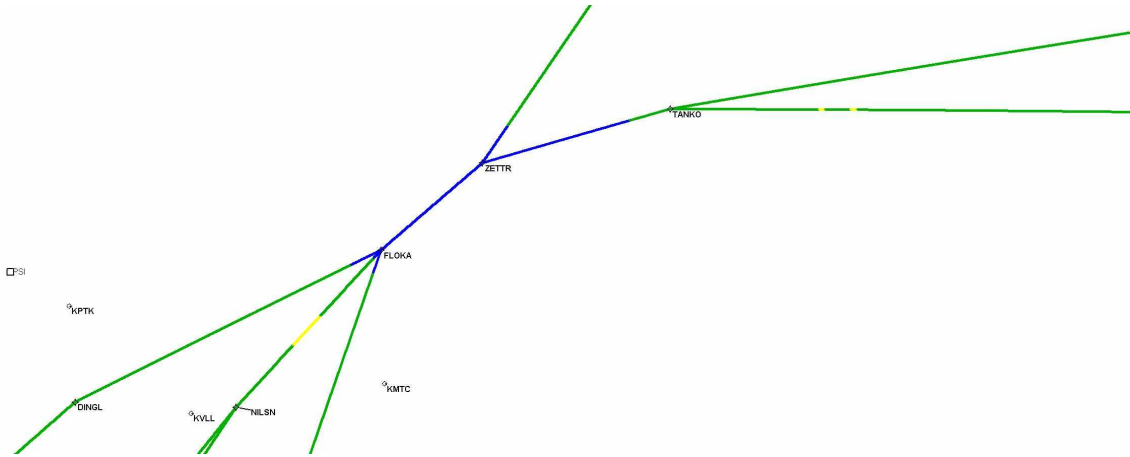
# DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI

Graphic Depiction 1



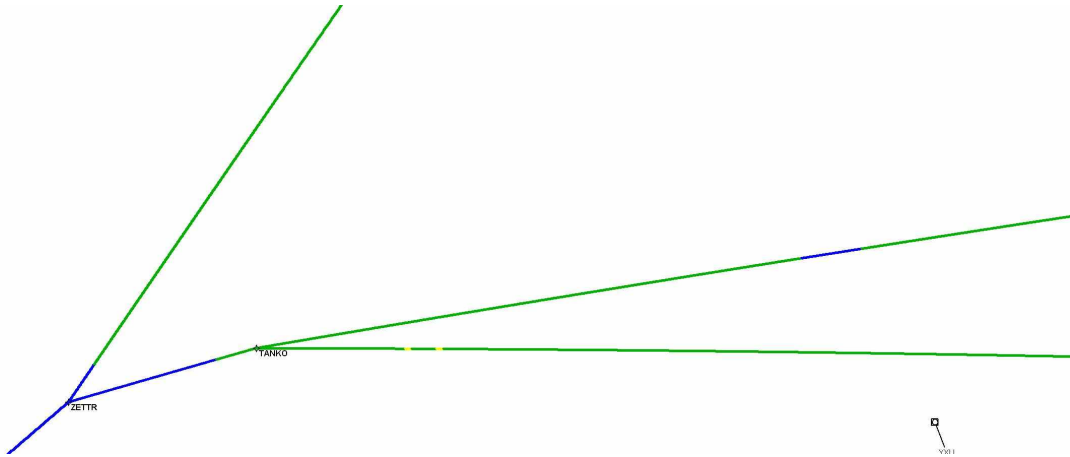
# DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI

Graphic Depiction 2



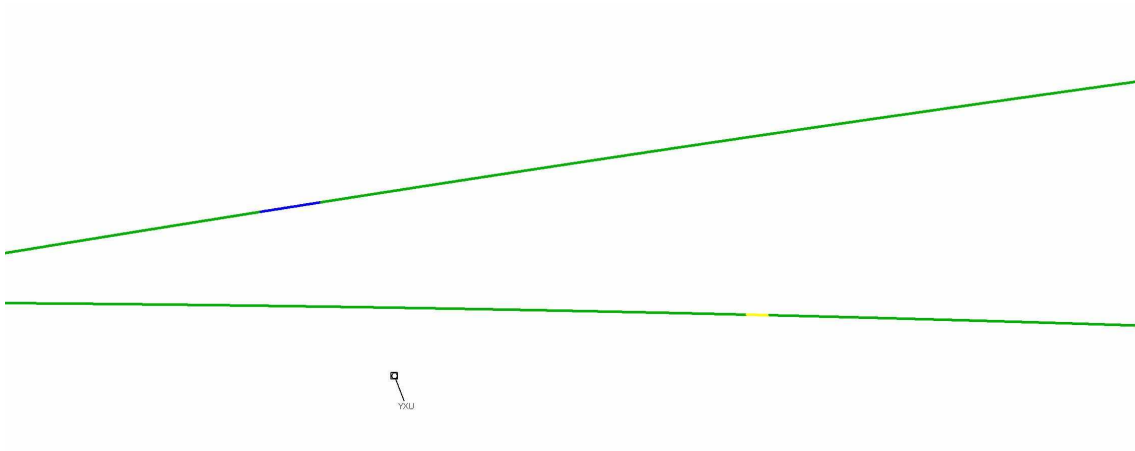
# DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI

Graphic Depiction 3



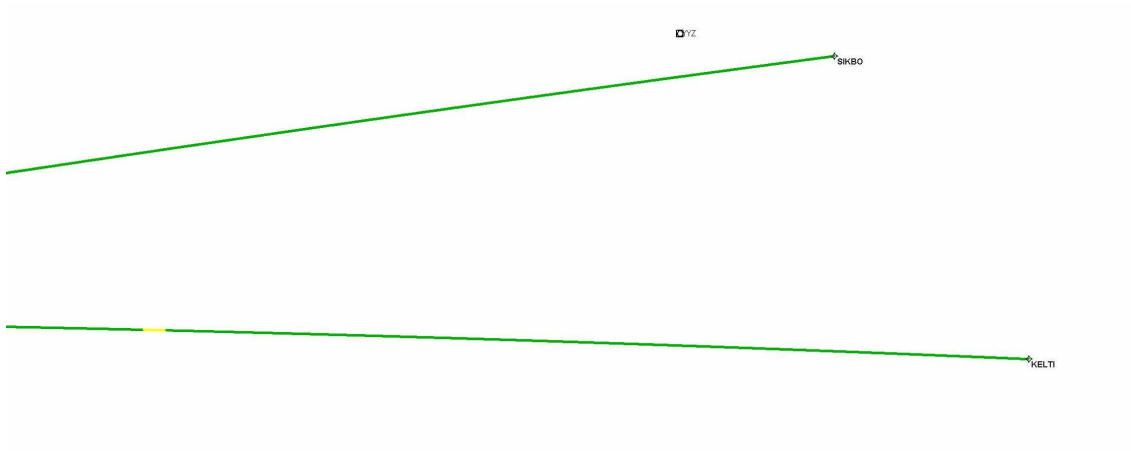
# DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI

Graphic Depiction 4



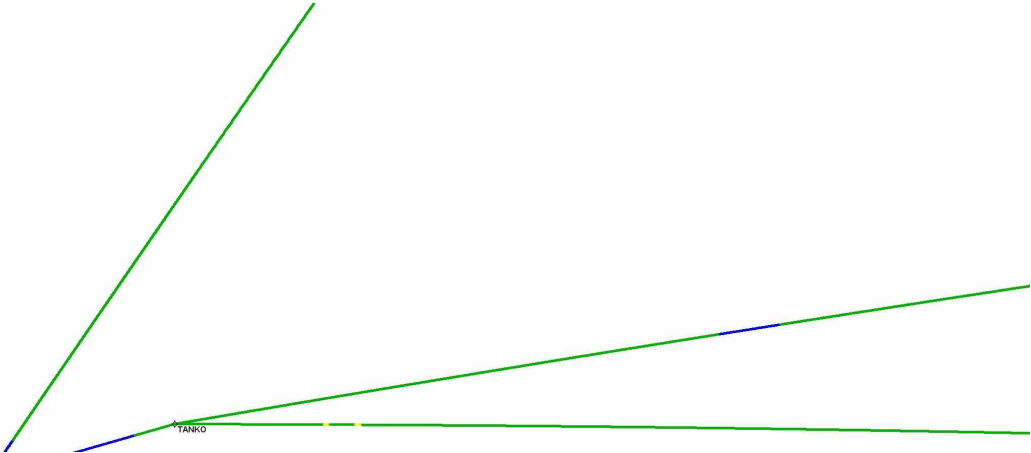
# DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI

Graphic Depiction 5



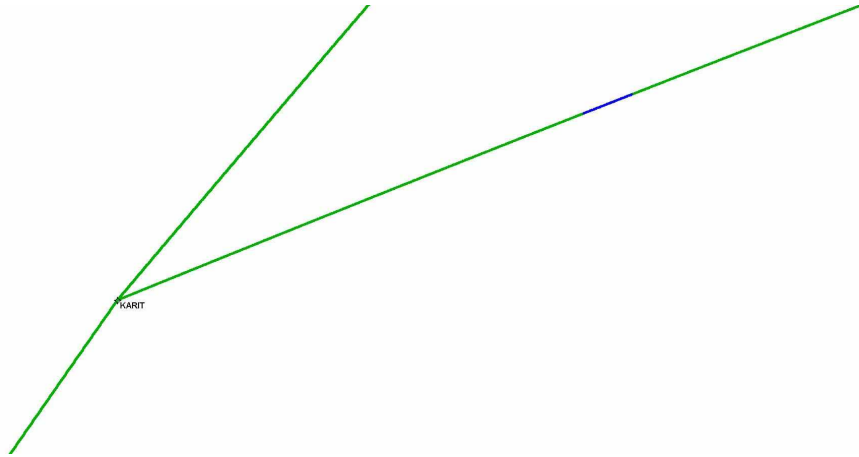
DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI

Graphic Depiction 6



# DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI

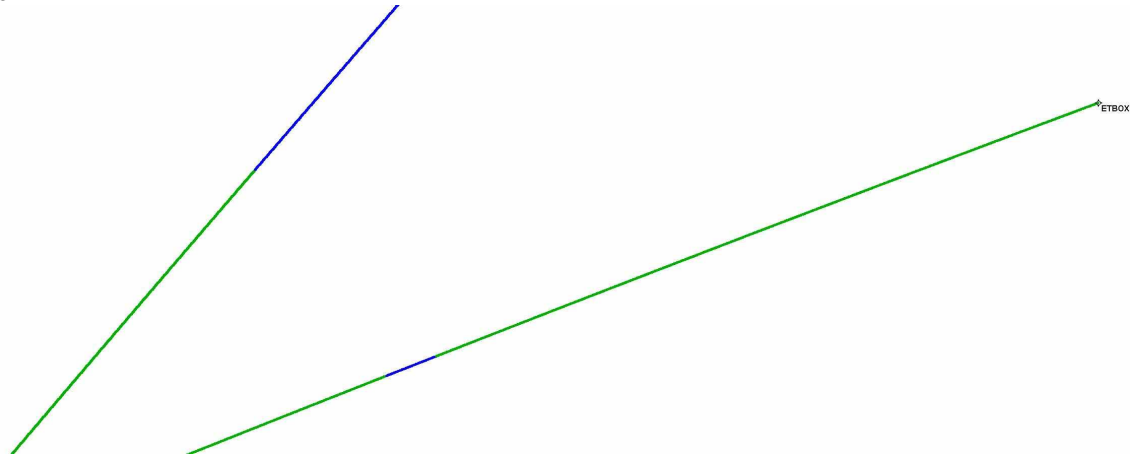
Graphic Depiction 7





DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI

Graphic Depiction 8



# DME DME Assessment Results for ZETTR4 path ZETTR\_KELTI

Graphic Depiction 9

