

# Predictive Airspace Monitoring System

Drilliant Ltd. presents a unique solution for aviation professionals to monitor and predict airspace activity with high precision

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 by Guy Soffer



# System Overview

## User-Defined Monitoring

Configure custom airspace regions for targeted missions, surveillance and analysis

## Triple Mode Operation

Real-time tracking, 30-minute predictions, and historical data analysis in one system

## Comprehensive Outputs

Load metrics, dynamic radar maps, detailed flight tables, and free time slot identification





# System Inputs



## User-Defined Air Space

Text file import of coordinate boundaries + manual editing



## Air-Traffic Maps

Integration with DOD/Jeppesen resources for comprehensive coverage. Can be edited manually for "Directs"



## Configuration Parameters

Set extension ranges, look-ahead, and look-back timeframes



## Real-Time Data

Periodic B2B EuroControl queries for flight plans and waypoints

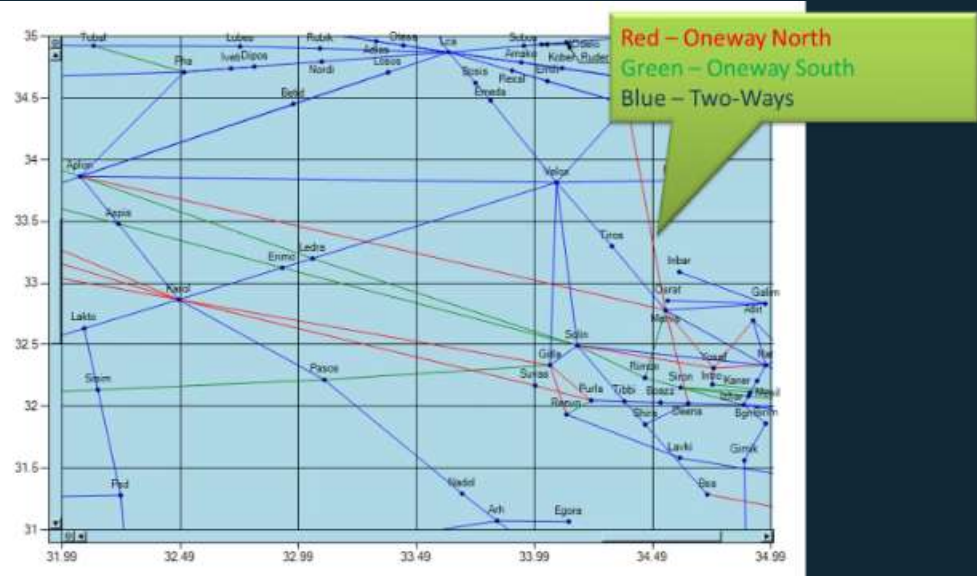
# System Flow Architecture

## EuroControl B2B

External data source providing real-time flight plans and airspace information

## Information Output

Crossing flight tables, free time slots, and visual radar displays

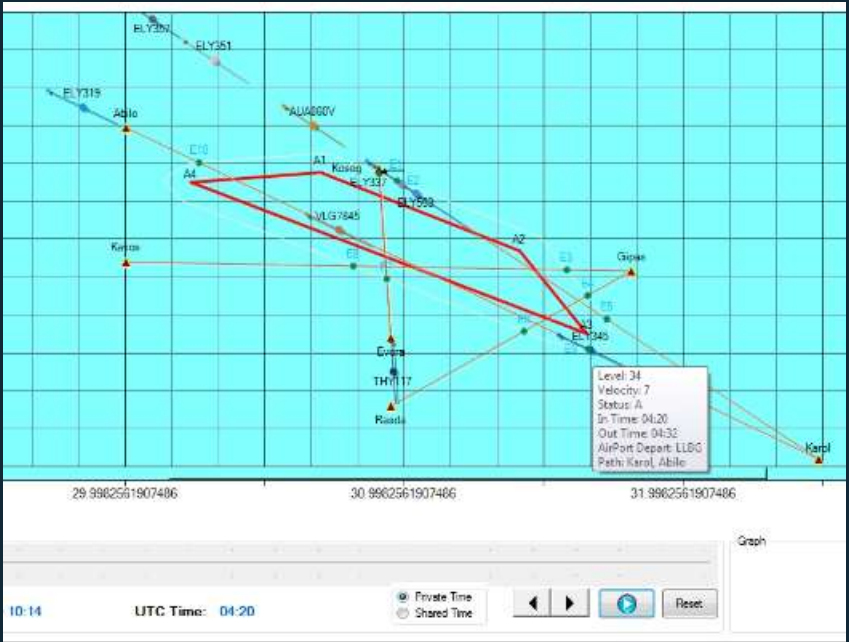


## PAMS Processing

Agent-based modeling system analyzes traffic within regions of interest

## Dynamic Mapping

Integration with DOD/Jeppesen infrastructure for visual representation



# Analysis Capabilities



## Path Analysis

2-Waypoints path intersections with ROI are identified and processed



## Waypoint Identification

System determines relevant waypoints for targeted B2B queries



## Flight Information

Comprehensive data including ARCID, velocity, Depart/Dest. Airports, Flight-Level....



## Visual Outputs

Dynamic traffic maps, Gantt charts, and  
free time-slot analysis - integrating up to 4 User-Defined Regions



# Key Features



## Intuitive Interface

User-friendly design allows for quick setup and minimal training requirements



## Rich Data Visualization

Multiple output formats including tables, timelines, and dynamic radar views



## Precision Performance

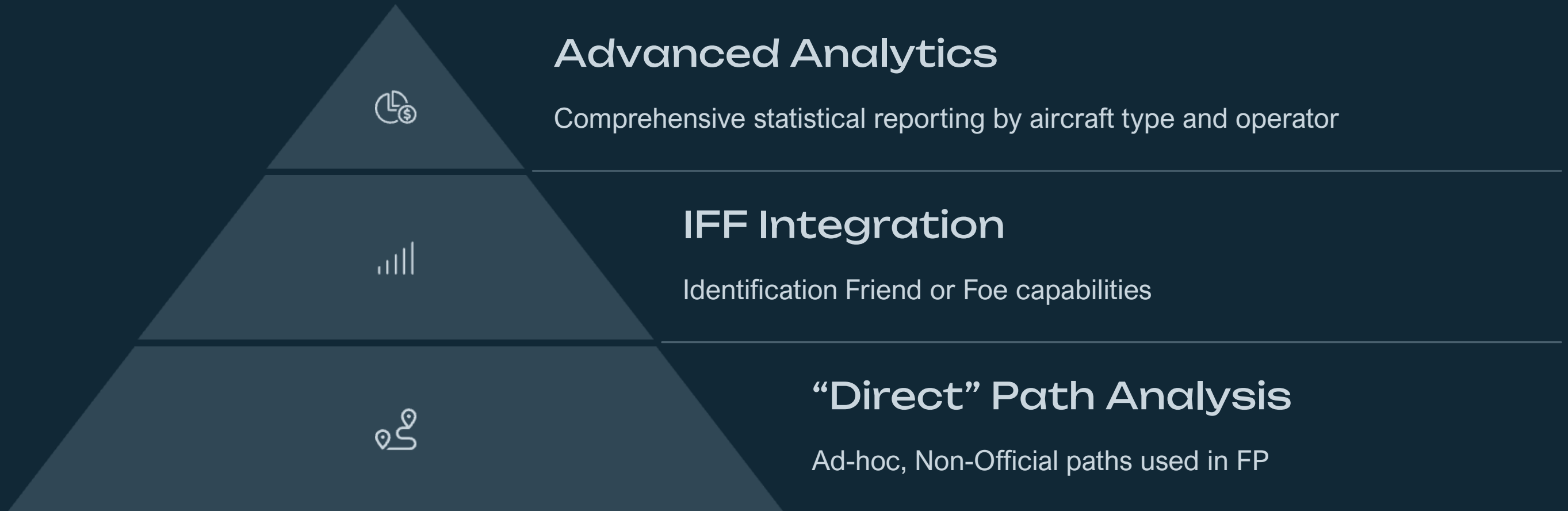
High accuracy predictions ensure reliable airspace management



## Temporal Flexibility

Seamlessly switch between predictive future and historical analysis modes

# Future Development Roadmap



Our development pipeline focuses on expanding analytical capabilities while maintaining the system's core strengths in usability and accuracy

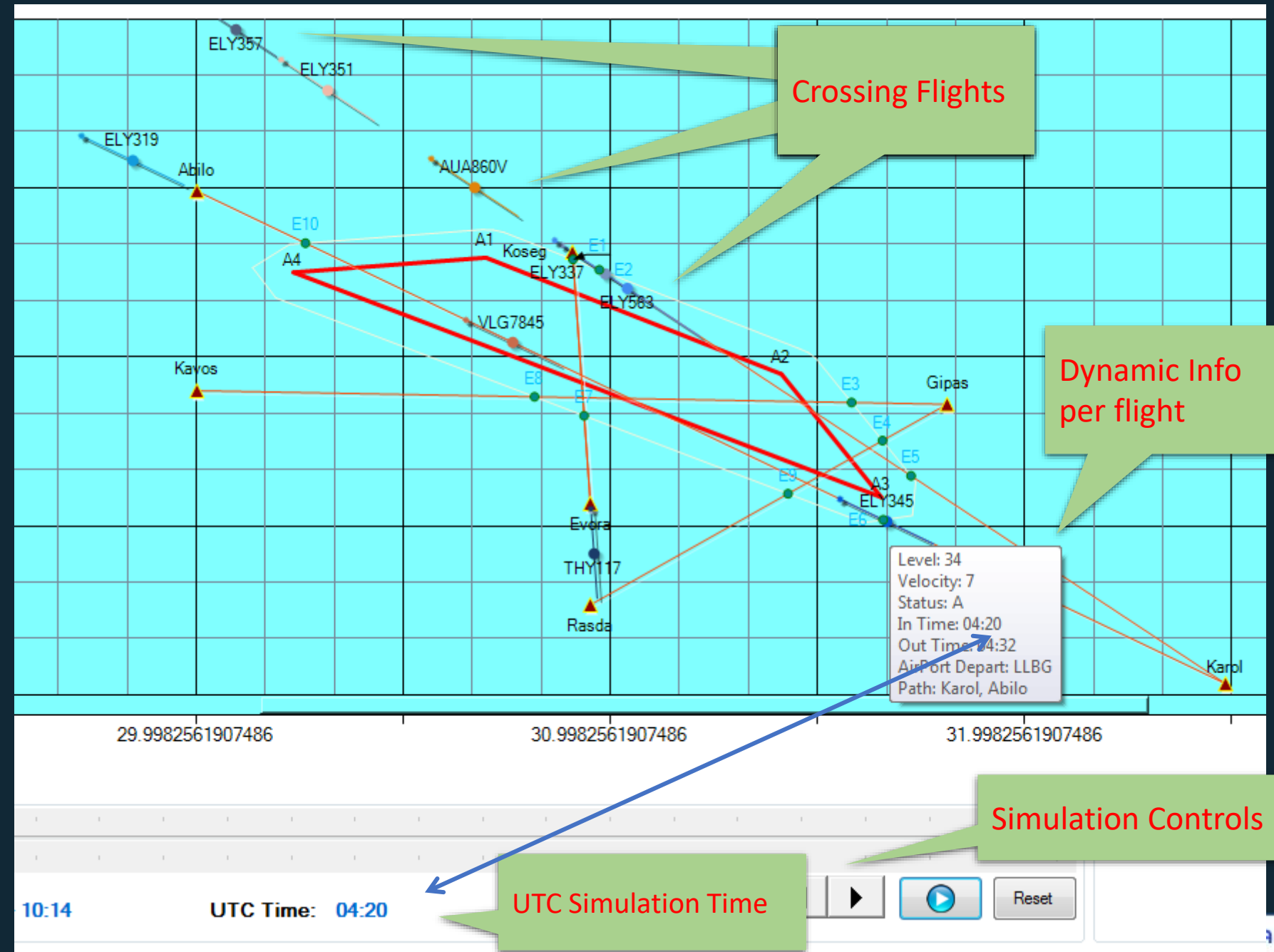
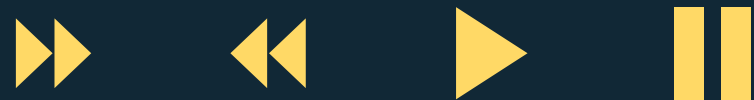
# Screenshots



# Dynamic View – “Radar”

Live Dynamic Map (Radar)

FF / REW / PLAY / PAUSE



# Crossing Flights – Data Table

ARCID

Status

Relevant  
Call Point

Enter/Depart Point  
Enter/Depart Time

Velocity

Flight  
Level

Airport  
Depart/Dest

FlightName	Ignore	Status	Tactic	Number	SortedReportedPos	EstInPos	EstInTime	EstOutP	EstOutTime	InPointN	InTime	OutPoint	OutTime	AvgVeloc	AvgRightL	ArPortDepart	ArPortDest	InPrstX	InPrstY	OutPrstX
AEA428		A	E	2	KAROL T: 05:22	Karol	05:22	Abilo	05:43	F5	05:28	F1	05:34	7.6	325	LLBG	LEBL	31 40 07	33 20 40	31 06 30
AEE529		A	E	2	KAROL T: 04:48	Karol	04:48	Abilo	05:09	F5	04:55	F1	05:00	7.6	340	LLBG	LGAV	31 40 07	33 20 40	31 06 30
AMC7829		A	E	2	KAROL T: 04:31	Karol	04:31	Gudie	05:07	F6	04:36	F11	04:54	7.3	351.333	LLBG	LMML	31 43 00	33 07 59	29 34 56
AUA864J		A	E	2	OTIKO T: 13:50L	Labna	13:54	Gudie	14:16	F8	13:55	F11	14:08	12.3	340	HECA	LOWW	30 20 46	32 25 05	29 34 56
AZA809		A	E	2	KAROL T: 03:02	Karol	03:02	Abilo	03:24	F5	03:08	F1	03:14	7.6	360	LLBG	LEBL	31 40 07	33 20 40	31 06 30
AZA821		A	E	2	KAROL T: 03:48	Karol	03:48	Abilo	04:09	F5	03:54	F1	04:00	7.6	360	LLBG	LEBL	31 40 07	33 20 40	31 06 30
BGY1709		A	E	3	KOSEG T: 06:04	Koseg	06:04	Meldo	06:21	F4	06:06	F9	06:18	7.9	350	EPPO	HEGN	30 55 45	33 45 26	31 02 12
BRU8213		A	E	3	KOSEG T: 06:08	Koseg	06:08	Meldo	06:27	F4	06:10	F9	06:24	7.0	350	UM	HEGN	30 55 45	33 45 26	31 02 12
DAZEM		A	E	2	OTIKO T: 08:42L	Labna	08:46	Gudie	09:08	F8	08:47	F11	09:00	12.3	380	HECA	EDDB	30 20 46	32 25 05	29 34 56
DLH583		A	E	2	OTIKO T: 14:28L	Labna	14:32	Gudie	14:54	F8	14:33	F11	14:46	12.3	340	HECA	EDOF	30 20 46	32 25 05	29 34 56
ELY319		A	E	2	KAROL T: 03:59	Karol	03:59	Abilo	04:19	F5	04:05	F1	04:10	8.0	376	LLBG	LFPG	31 40 07	33 20 40	31 06 30
ELY321		A	E	2	KAROL T: 04:39	Karol	04:39	Abilo	05:01	F5	04:45	F1	04:51	7.2	340	LLBG	LFML	31 40 07	33 20 40	31 06 30
ELY345		A	E	2	KAROL T: 04:13	Karol	04:13	Abilo	04:35	F5	04:19	F1	04:25	7.2	340	LLBG	LSGG	31 40 07	33 20 40	31 06 30
ELY381		A	E	2	KAROL T: 05:20	Karol	05:20	Abilo	05:41	F5	05:26	F1	05:32	7.6	370	LLBG	LIMC	31 40 07	33 20 40	31 06 30
ELY385		A	E	2	KAROL T: 05:55	Karol	05:55	Abilo	06:17	F5	06:01	F1	06:07	7.2	370	LLBG	LIRF	31 40 07	33 20 40	31 06 30
ELY393		A	E	2	KAROL T: 06:38	Karol	06:38	Abilo	06:58	F5	06:44	F1	06:49	8.0	360	LLBG	LEBL	31 40 07	33 20 40	31 06 30
ELY395		A	E	2	KAROL T: 03:09	Karol	03:09	Abilo	03:31	F5	03:15	F1	03:21	7.2	340	LLBG	LEBL	31 40 07	33 20 40	31 06 30
ELY541		A	E	2	KAROL T: 04:51	Karol	04:51	Abilo	05:13	F5	04:57	F1	05:03	7.2	340	LLBG	LGAV	31 40 07	33 20 40	31 06 30
ENT4515		A	E	3	KOSEG T: 05:42	Koseg	05:42	Meldo	06:00	F4	05:44	F9	05:57	7.5	330	EPPO	HEGN	30 55 45	33 45 26	31 02 12
EZY19ND		A	E	2	OTIKO T: 17:07L	Labna	17:12	Gudie	17:35	F8	17:12	F11	17:26	11.4	340	HESH	EGGW	30 20 46	32 25 05	29 34 56
GAF309		A	E	3	GIPAS T: 05:23R	Gipas	05:23	Meldo	05:54	F3	05:27	F9	05:49	8.0	192	LCPH	OEJN	31 30 33	33 29 07	31 02 12
IBE3319		A	E	2	KAROL T: 03:51	Karol	03:51	Abilo	04:13	F5	03:57	F1	04:03	7.2	340	LLBG	LEMD	31 40 07	33 20 40	31 06 30
IFA3413		A	E	2	OTIKO T: 09:37L	Labna	09:42	Gudie	10:08	F8	09:43	F11	09:58	10.2	400	HEGN	LOWW	30 20 46	32 25 05	29 34 56
ISF38GB		A	E	3	BLT T: 06:53ME	Meldo	06:57	Gipas	07:10	F9	06:58	F3	07:08	10.0	333.333	OAZI	LCRA	31 02 12	32 18 59	31 30 33
ISS2719		A	E	2	KAROL T: 03:14	Karol	03:14	Abilo	03:37	F5	03:21	F1	03:27	6.9	340	LLBG	LIPX	31 40 07	33 20 40	31 06 30
KNE671		A	E	2	KOSEG T: 04:43	Koseg	04:43	Meldo	05:00	F4	04:45	F9	04:57	7.9	290	LTFJ	OEJN	30 55 45	33 45 26	31 02 12
LGL148		A	E	2	OTIKO T: 13:08L	Labna	13:14	Gudie	13:37	F8	13:14	F11	13:28	11.4	380	HESH	ELLX	30 20 46	32 25 05	29 34 56
MSR725		A	E	2	OTIKO T: 09:01L	Labna	09:06	Gudie	09:28	F8	09:06	F11	09:20	11.8	340	HECA	EBBR	30 20 46	32 25 05	29 34 56
MSR731		A	E	2	OTIKO T: 09:08L	Labna	09:12	Gudie	09:34	F8	09:13	F11	09:26	12.3	344	HECA	EDDB	30 20 46	32 25 05	29 34 56

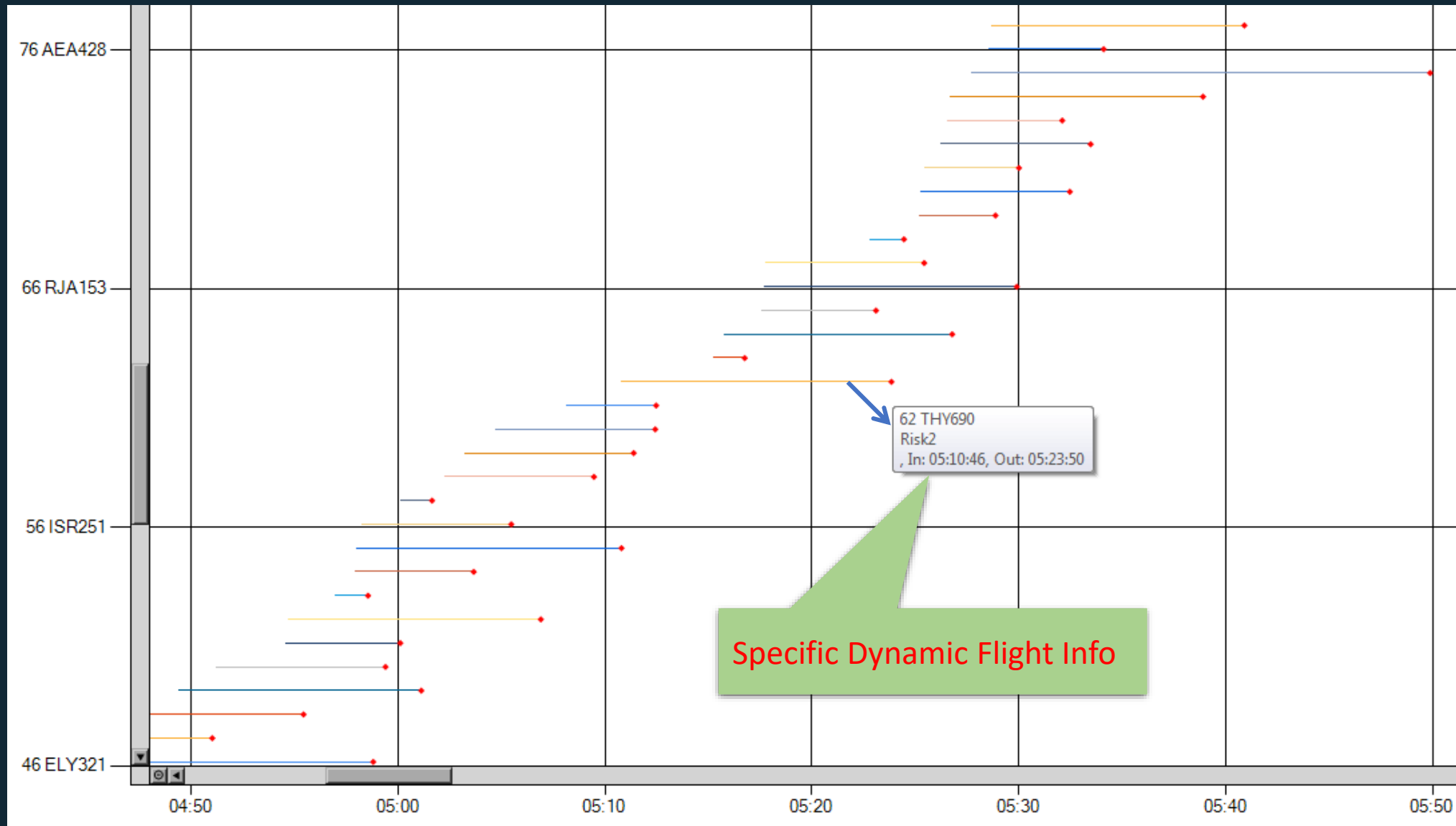
Free Sort List by any field

Velocity  
Warning

Free Sort List by any field

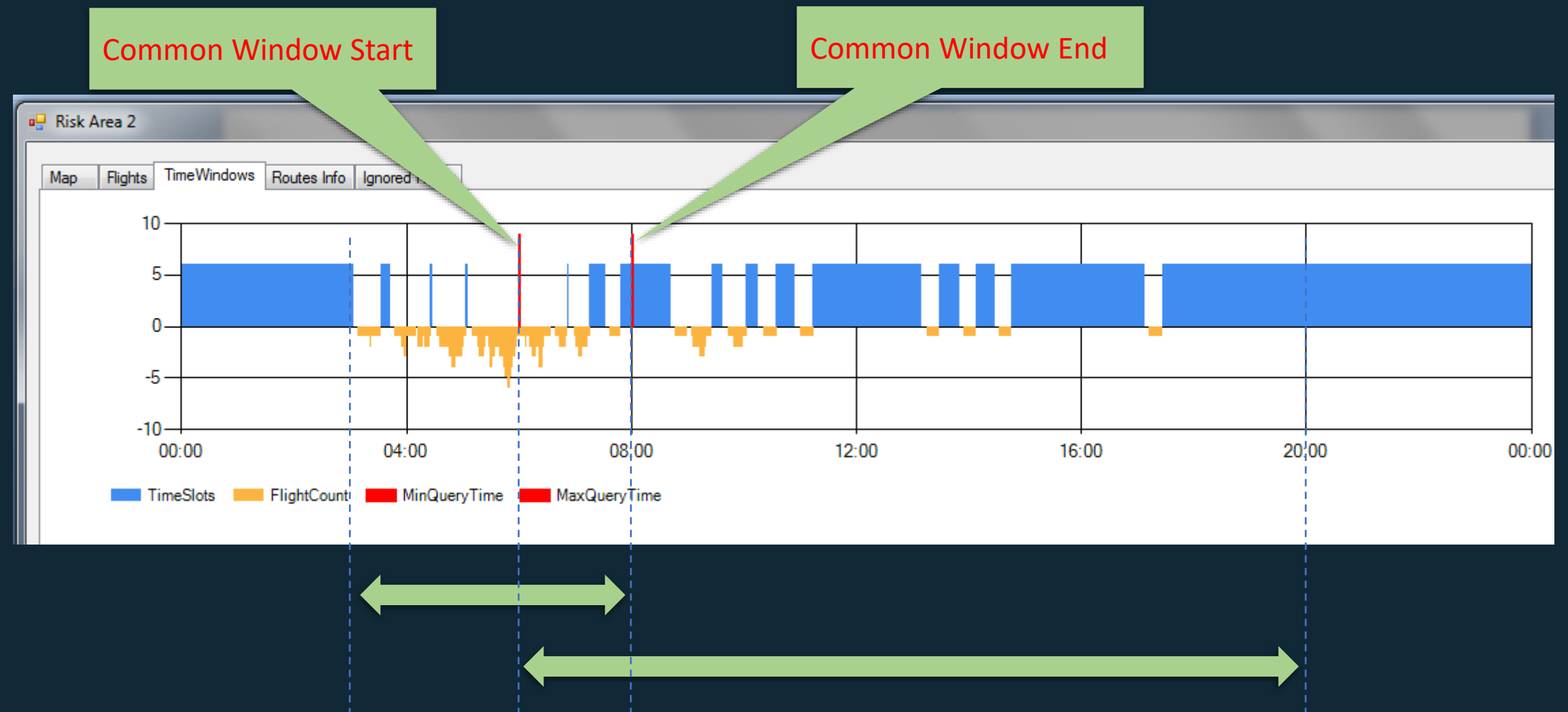
Velocity Warning

# Crossing Flights – Gantt



# Free Time-Slots

Integration of up to 4 User-Defined Air-Regions



# Air-Traffic Infrastructure

## Visual Map Two Modes:

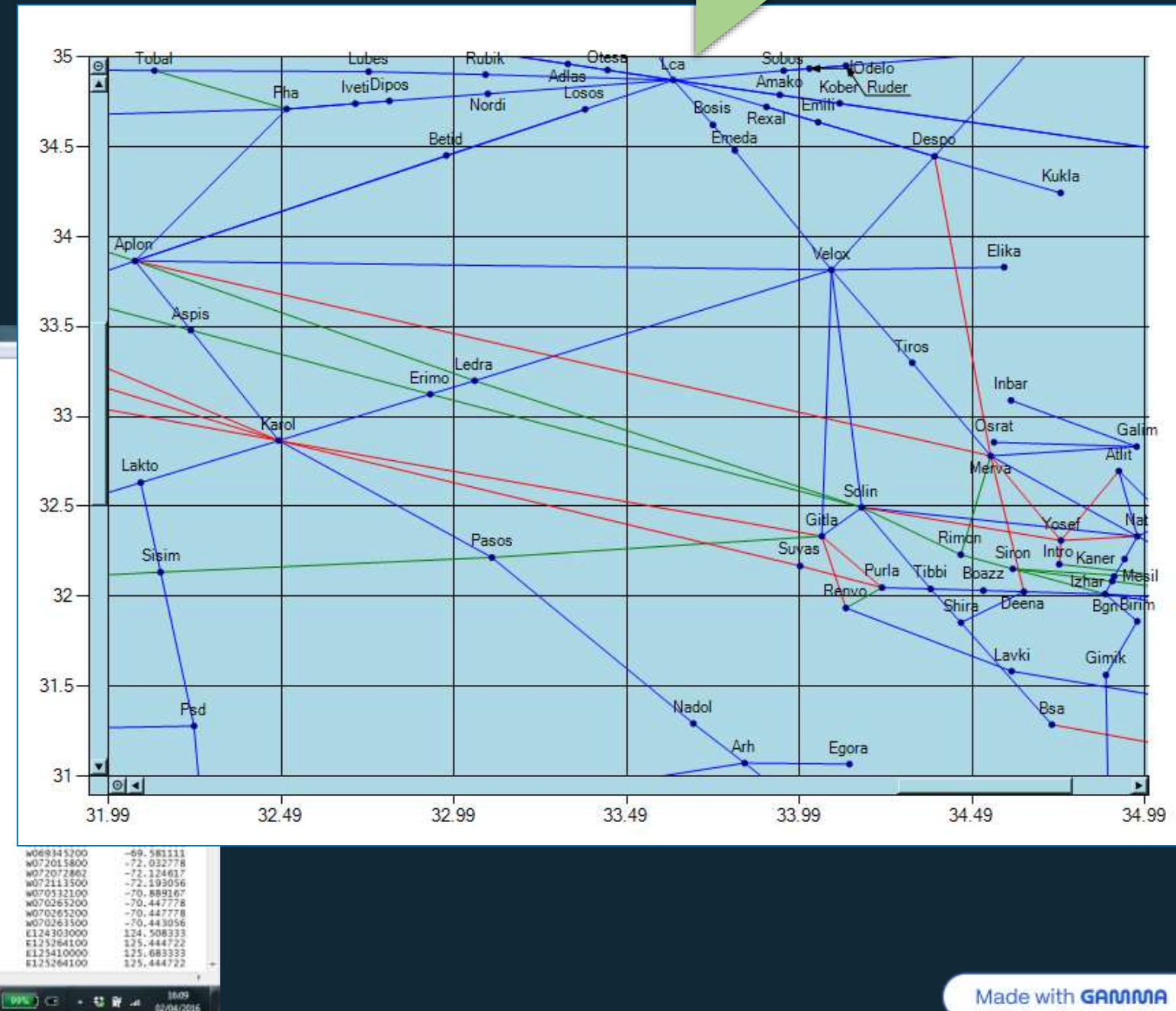
- Load DOD / Jeppesen File
- Internal Editor: Edit Manually

ATS - Notepad																
File Edit Format View Help																
ATS_IDENT	SEQ_ABR	DIRECTION	TYPE	ICAO	BIOIRECT	FREQ_CLASS	LEVEL	STATUS	WPTL_ICAO	WPTL_NAV_TYPE	WPTL_IDENT	WPTL_CTRY				
1AK1	10	E	D	HSSS	Y	A	L	O	HLLI	ORNA	L	E	C	N20000000	20.000000	
1AK1	20	E	D	HSSS	Y	A	L	O	HSSS	4	DOG	SU	V	NL9105726	19.182572	
1AK1	30	E	D	HSSS	Y	A	L	O	HSSS	4	NRW	SU	V	NL8244904	18.431622	
1AK1	9970	M	D	HSSS	Y	A	L	O	HSSS	4	PSD	SU	V	NL9240424	19.401178	
1AK1	9980	M	D	HSSS	Y	A	L	O	HSSS	4	NRW	SU	V	NL8244904	18.431622	
1AK1	9990	M	D	HSSS	Y	A	L	O	HSSS	4	DOG	SU	V	NL9105726	19.182572	
1AK3	10	E	M	HAAA	Y	A	B	O	HAAA	4	DWA	ET	V	N09381030	9.637801	
1AK3	20	E	M	HAAA	Y	A	B	O	HAAA	4	TADRA	ET	R	N08163790	8.277194	
1AK3	30	E	M	HAAA	Y	A	B	O	HAAA	4	ADABA	ET	R	N05415060	5.697389	
1AK3	9970	M	M	HAAA	Y	A	B	O	HAAA	4	NAV	KE	V	N03562517	3.940325	
1AK3	9980	M	M	HAAA	Y	A	B	O	HAAA	4	ADABA	ET	R	N05415060	5.697389	
1AK3	9990	M	M	HAAA	Y	A	B	O	HAAA	4	TADRA	ET	R	N08163790	8.277194	
1E002	10	E	E	FNAN	Y	A	H	O	FNAN	1	VUL	AD	V	N11453700	-11.765833	
1E002	9990	M	E	FNAN	Y	A	H	O	FNAN	1	EVOTO	AD	R	N14311562	-14.520501	
1E011	10	E	E	DNKK	Y	A	L	O	DNKK	4	ABC	NZ	V	N09021609	9.037803	
1E011	20	E	E	DNKK	Y	A	L	O	DNKK	4	ERHAD	NZ	E	N07430000	7.716667	
1E011	30	E	E	DNKK	Y	A	L	O	DNKK	4	GB	NZ	V	N07151900	7.255278	
1E011	40	E	E	DNKK	Y	A	L	O	DNKK	4	AKLIS	NZ	E	N07031880	7.088500	
1E011	9980	M	E	DNKK	Y	A	L	O	DNKK	4	OBLOD	NZ	E	N06300000	6.166667	
1E011	9970	M	E	DNKK	Y	A	L	O	DNKK	4	AKLIS	NZ	E	N07051860	7.088500	
1E011	9980	M	E	DNKK	Y	A	L	O	DNKK	4	GB	NZ	V	N07151900	7.255278	
1E011	9990	M	E	DNKK	Y	A	L	O	DNKK	4	ERHAD	NZ	E	N07430000	7.716667	
1E012	10	E	E	DNKK	Y	A	L	O	DNKK	4	ENG	NZ	V	N06285117	6.480881	
1E012	20	E	E	DNKK	Y	A	L	O	DNKK	4	MOKLA	NZ	E	N06174675	6.296319	
1E012	9980	M	E	DNKK	Y	A	L	O	DNKK	4	OBLOD	NZ	E	N06100000	6.166667	
1E012	9990	M	E	DNKK	Y	A	L	O	DNKK	4	MOKLA	NZ	E	N06174675	6.296319	
1E013	10	E	E	DNKK	Y	A	L	O	DNKK	4	CAL	NZ	V	N04551874	4.921872	
1E013	20	E	E	DNKK	Y	A	L	O	DNKK	4	LUNDO	NZ	E	N05510420	5.851167	
1E013	30	E	E	DNKK	Y	A	L	O	DNKK	4	MOKLA	NZ	E	N06174675	6.296319	
1E013	9970	M	E	DNKK	Y	A	L	O	DNKK	4	OBLOD	NZ	E	N06100000	6.166667	
1E013	9980	M	E	DNKK	Y	A	L	O	DNKK	4	MOKLA	NZ	E	N06174675	6.296319	
1E013	9990	M	E	DNKK	Y	A	L	O	DNKK	4	LUNDO	NZ	E	N05510420	5.851167	
25A	10	E	R	RPHI	Y	A	B	O	RPHI	4	CAB	RP	V	NL5285017	15.482269	
25A	9990	M	E	RPHI	Y	A	B	O	RPHI	4	ROSER	RP	E	NL5223155	15.373097	
2AK3	10	E	M	TTZP	Y	A	L	O	TTZP	4	ANU	AC	V	NL7073316	17.125878	
2AK3	9990	M	M	TTZP	Y	A	L	O	TTZP	4	BEVAD	TD	R	NL7354600	17.596111	
2E10	10	E	E	SCFZ	Y	A	B	O	SCFZ	4	ALDAX	CI	E	N18210000	-18.350000	
2E10	20	E	E	SCFZ	Y	A	B	O	SCFZ	4	LOKIR	CI	R	N19414300	-19.695278	
2E10	9980	M	E	SCFZ	Y	A	B	O	SCFZ	4	IQO	CI	V	N20212960	-20.374722	
2E10	9990	M	E	SCFZ	Y	A	B	O	SCFZ	4	LOKIR	CI	R	N19414300	-19.695278	
2E11	10	E	E	SCFZ	Y	A	L	O	SCFZ	4	TOY	CI	V	N30163500	-30.276389	
2E11	9990	M	E	SCFZ	Y	A	L	O	SCFZ	4	SEB	CI	V	N29545582	-29.915533	
2E12	10	E	E	SCFZ	Y	A	B	O	SCFZ	4	DGO	CI	V	N33102600	-33.657222	
2E16	10	E	E	TJZS	Y	A	B	O	TJZS	4	SCAPA	RQ	E	NL5500290	15.834139	
2E16	9990	M	E	TJZS	Y	A	B	O	TJZS	4	CRSTL	RQ	E	NL6171551	16.99697	
2E18	10	E	E	SCFZ	Y	A	L	O	SCFZ	4	FAG	CI	V	N23280100	-23.466944	
2E18	20	E	E	SCFZ	Y	A	L	O	SCFZ	4	NANTO	CI	R	N27561400	-27.937222	
2E18	9980	M	E	SCFZ	Y	A	L	O	SCFZ	4	LOA	CI	V	N22300700	-22.501944	
2E18	9990	M	E	SCFZ	Y	A	L	O	SCFZ	4	NANTO	CI	R	N27561400	-27.937222	
2E19	9970	M	E	SCFZ	Y	A	B	O	SCFZ	4	CHI	CI	V	N36351100	-36.586389	
2E19	9980	M	E	SCFZ	Y	A	B	O	SCFZ	4	ARNAK	CI	E	N30152544	-30.257067	
2E19	9990	M	E	SCFZ	Y	A	B	O	SCFZ	4	LIVAN	CI	E	N36030200	-36.050556	
2E3	10	E	E	SCFZ	Y	A	L	O	SCFZ	4	PARAL	CI	E	N24225800	-24.382778	
2E3	9990	M	E	SCFZ	Y	A	L	O	SCFZ	4	FAG	CI	V	N23280100	-23.466944	
2E4	10	E	E	SCFZ	Y	A	B	O	SCFZ	4	FAG	CI	V	N23280100	-23.466944	
2E4	9990	M	E	SCFZ	Y	A	B	O	SCFZ	5	MJL	CI	N	N31061300	-31.109167	
3AK1	10	E	M	ZKKP	Y	A	B	O	ZYSH	4	GOLOT	CH	E	N40123000	40.208332	
3AK1	20	E	M	ZKKP	Y	A	B	O	ZKKP	4	GASAN	KN	E	N19435500	39.731944	
3AK1	9980	M	M	ZKKP	Y	A	B	O	ZKKP	4	SOKGE	KN	E	N39435400	39.731667	
3AK1	9990	M	M	ZKKP	Y	A	B	O	ZKKP	4	GASAN	KN	E	N19435500	39.731944	

Map showing flight paths and waypoints. Waypoints include Lakto, Sisim, and Fsd. Coordinates range from 31.99 to 33.5 latitude and -69.981111 to -72.444722 longitude.

Waypoint	Latitude	Longitude
Lakto	33.5	-69.981111
Sisim	32.5	-72.032778
Fsd	31.99	-72.444722

Red – Oneway North  
Green – Oneway South  
Blue – Two-Ways



# Crossing Paths – Data Table

LRSS - Long Range Safety System

File Edit Tools Help

Control-Points Risk Areas Flight List Time-Slots Radar-1 Radar-2 Radar-3 Radar-4 Radar-All FlightGantt CrossingPaths Risk1 Flights Main Advantages

	External Entering Pnt Name	External Departing Pnt Name	Total Range	Interse Pnt In	Interse Pnt Out	Leg Count	Legs String	Ignore	Alternative External Path	Alterna Externi Path Range
▶	Evora	Koseg	44.6	E7	E1	1	Evora, Koseg	<input type="checkbox"/>		
	Gipas	Kavos	90.4	E3	E8	1	Gipas, Kavos	<input type="checkbox"/>		
	Gipas	Rasda	55.9	E4	E9	1	Gipas, Rasda	<input type="checkbox"/>		
	Karol	Abilo	151.8	E6	E10	1	Karol, Abilo	<input type="checkbox"/>		
	Karol	Koseg	109.9	E5	E2	1	Karol, Koseg	<input type="checkbox"/>		
	Kavos	Gipas	90.4	E8	E3	1	Kavos, Gipas	<input type="checkbox"/>		
	Koseg	Evora	44.6	E1	E7	1	Koseg, Evora	<input type="checkbox"/>		0
	Rasda	Gipas	55.9	E9	E4	1	Rasda, Gipas	<input type="checkbox"/>		0
	Gipas	Gudis	211.3	F2	F11	2	Gipas, Kavos, Gudis	<input type="checkbox"/>		0
	Gipas	Koseg	118.5	F3	F4	3	Gipas, Rasda, Evora, Koseg	<input type="checkbox"/>		
	Gipas	Labna	113.3	F3	F8	2	Gipas, Rasda, Labna	<input type="checkbox"/>		
	Gipas	Meldo	120.1	F3	F9	2	Gipas, Rasda, Meldo	<input type="checkbox"/>		
	Gudis	Gipas	211.3	F11	F2	2	Gudis, Kavos, Gipas	<input type="checkbox"/>		
	Karol	Abilo	151.8	F5	F1	1	Karol, Abilo	<input type="checkbox"/>		0
	Karol	Gipas	157.3	F6	F3	3	Karol, Evora, Rasda, Gipas	<input checked="" type="checkbox"/>	(3) Karol,Aspis,Aplon,Gipas	79.9
	Karol	Gudis	255.8	F6	F11	3	Karol, Evora, Kavos, Gudis	<input type="checkbox"/>		0
	Karol	Koseg	128	F6	F4	2	Karol, Evora, Koseg	<input checked="" type="checkbox"/>	(1) Karol,Koseg	109.9
	Karol	Labna	158.8	F6	F8	3	Karol, Evora, Rasda, Labna	<input type="checkbox"/>		0
	Karol	Meldo	165.6	F6	F9	3	Karol, Evora, Rasda, Meldo	<input checked="" type="checkbox"/>	(2) Karol,Lakto,Meldo	87.3
	Koseg	Gipas	118.5	F4	F3	3	Koseg, Evora, Rasda, Gipas	<input checked="" type="checkbox"/>	(1) Koseg,Gipas	52.5

Crossing-Paths identification :  
Total Distance, Waypoints, Entry Point, Departure Point, Number of Legs, etc.

Disqualify alternative irrelevant Paths

# Intersection Points – Data Table

	External Point	Second Point	Intersect Pnt Name	Range to Enter	Intersect North	Intersect East
►	Koseg	Evora	E1	1.3	34 07 17	30 54 28
	Koseg	Karol	E2	4.5	34 05 26	30 58 17
	Gipas	Kavos	E3	11.5	33 41 54	31 34 01
	Gipas	Rasda	E4	10.1	33 35 08	31 39 18
	Karol	Koseg	E5	53	33 28 53	31 43 26
	Karol	Abilo	E6	50.7	33 21 05	31 39 24
	Evora	Koseg	E7	15.5	33 39 33	30 56 05
	Kavos	Gipas	E8	40.6	33 42 55	30 48 54
	Rasda	Gipas	E9	31	33 25 43	31 25 37
	Abilo	Karol	E10	15.9	34 10 11	30 15 43
	Abilo	Karol	F1	67.5	33 40 23	31 06 30
	Gipas	Kavos	F2	39	33 42 38	31 01 43
	Gipas	Rasda	F3	19.5	33 29 07	31 30 33
	Koseg	Evora	F4	23.1	33 45 26	30 55 45
	Karol	Abilo	F5	49.9	33 20 40	31 40 07
	Karol	Evora	F6	41.7	33 07 59	31 43 00
	Labna	Kumbi	F7	9.4	32 26 53	30 08 32
	Labna	Rasda	F8	6.4	32 25 05	30 20 46
	Meldo	Rasda	F9	17	32 18 59	31 02 12
	Kumbi	Labna	F10	42.9	33 11 12	29 19 47
	Gudis	Kavos	F11	98.2	33 53 00	29 34 56
	Kumbi	Labna	G1	103.2	32 26 53	30 08 32
	Rasda	Labna	G2	51	32 25 05	30 20 46
	Rasda	Meldo	G3	47.2	32 18 59	31 02 12
	Meldo	Rasda	G4	12.3	32 14 16	31 02 44
	Blit	Labna	G5	54.8	32 12 28	30 24 07
	Otiko	Labna	G6	48.4	32 13 21	30 10 28

Calculate:

- Distances TO/FROM RoI,
- Coordinates (N/E) of Enter/Depart points,
- Code-Name each point



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