



# Sirena

Travel Commerce Platform



## WEIGHT AND BALANCE

*A user friendly solution to  
solve complex tasks*



19-22 April 2021, Yerevan

[sirena-travel.com](https://sirena-travel.com)

# W&B solution to solve complex tasks

- Powerful tool for load planning
- Designed to make aircraft loading safer and more efficient
- Reduce cost and make maximum use of available space
- User-friendly interface

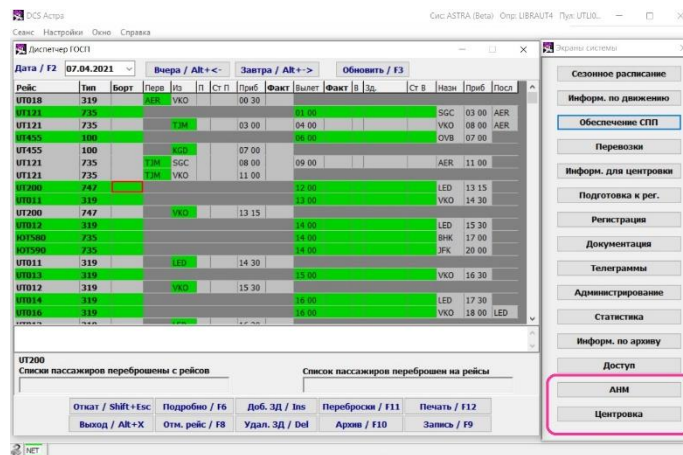
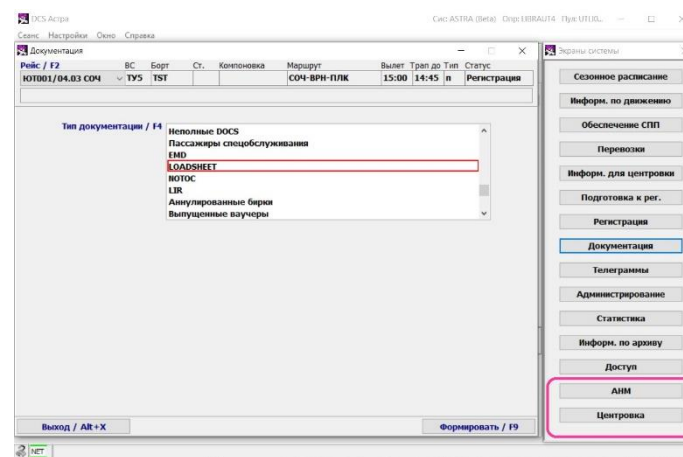
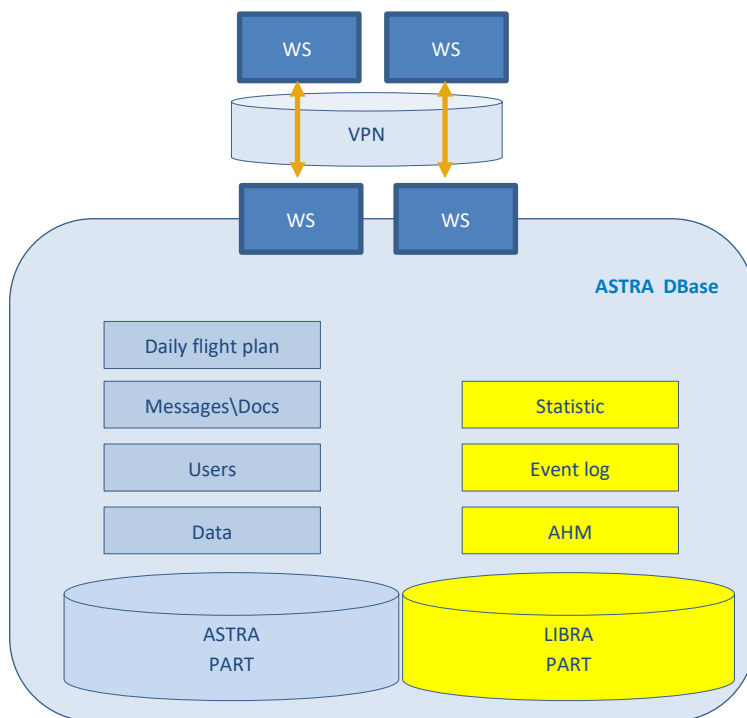
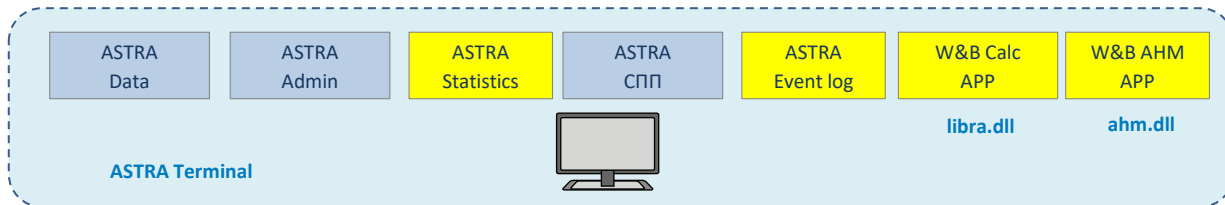


# Libra Weight and Balance Solution

- Integrated Astra DCS module
- Aircraft Data Base in accordance with IATA AHM 565 recommendations
- All required weight and balance calculations
- All required printouts for a flight
- IATA standard format message processing



# Libra Weight and Balance Architecture



# Libra Weight and Balance Solution

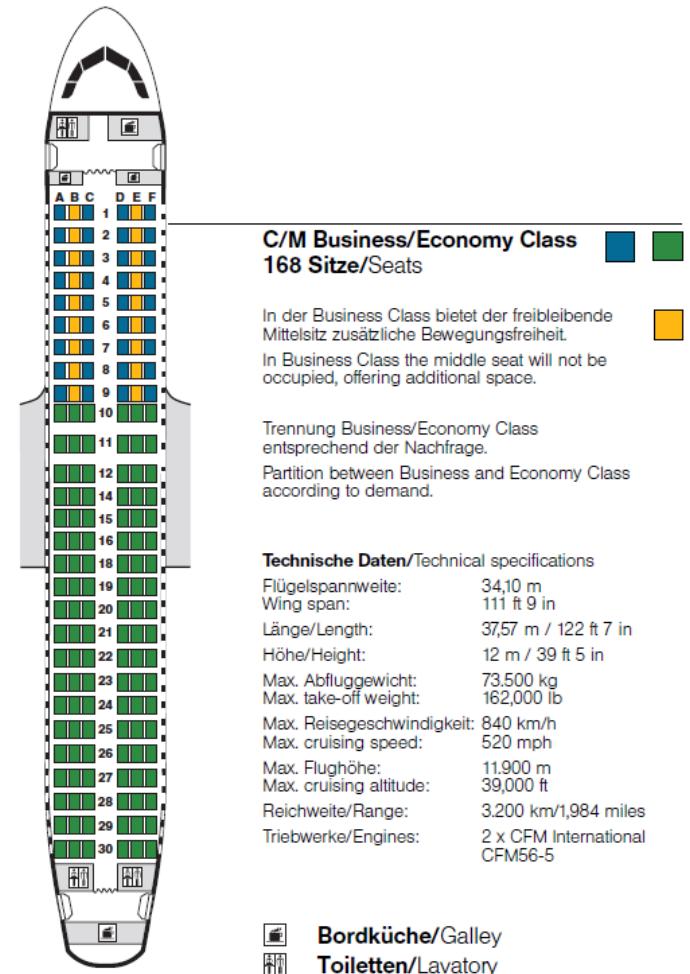
## Basic modules:

- Data Base Module
- W&B Calculations Module
- Astra DCS message processing
- Astra DCS Administration Module



# Data Base Module

- Based on IATA Airport Handling Manual recommendations
- Functions of data entry and editing
- Manual data base update function
- Event log



# Data Base Module

The image displays three screenshots of the 'Weight & Balance' software interface, illustrating various data management and entry screens.

**Top Left Screenshot:** Shows the 'General Information' and 'Limits of Measurement' sections. The 'Actual Date' is set to 21.09.2016. The aircraft type is 'Boeing 737-800'. The 'Limits of Measurement' table shows various parameters like Weight, Length, and Liquid Volume.

NO	Actual Dates	Actual Date	Weight	Volume	Remarks
1	21.09.2016	21.09.2016	Kg...[ kilogram ]	m3...[ cubic meter ]	
2	21.09.2016	21.09.2016		lit...[ cubic feet ]	

**Top Right Screenshot:** Shows the 'Limits of Measurement' table with columns for NO, Actual Dates, Actual Date, Weight, Volume, and Remarks. It includes a 'Density' field set to 0.8 and a 'Maximum Volume' of 0.056.

NO	Actual Dates	Actual Date	Weight	Volume	Remarks
1	21.09.2016	21.09.2016	1000	1200	89.25
2	21.09.2016	21.09.2016	2000	2000	130.76561
3	21.09.2016	21.09.2016	3000	3000	191.53042

**Bottom Left Screenshot:** Shows a detailed 'Limits of Measurement' table with columns for NO, Section, Row Number, Seat Identifier, Maximum Weight, and Maximum Seats. The table is populated with data for various sections and rows.

NO	Section	Row Number	Seat Identifier	Maximum Weight	Maximum Seats
1	GA	1	A	400	6
2	GA	2	B	400	6
3	GA	3	C	400	6
4	GA	4	D	400	6
5	GA	5	E	400	6
6	GA	6	F	400	6
7	GA	7	G	400	6
8	GA	8	H	400	6
9	GA	9	I	400	6
10	GA	10	J	400	6
11	GA	11	K	400	6
12	GA	12	L	400	6
13	GA	13	M	400	6
14	GA	14	N	400	6
15	GA	15	O	400	6
16	GA	16	P	400	6
17	GA	17	Q	400	6
18	GA	18	R	400	6
19	GA	19	S	400	6
20	GA	20	T	400	6
21	GA	21	U	400	6
22	GA	22	V	400	6
23	GA	23	W	400	6
24	GA	24	X	400	6
25	GA	25	Y	400	6
26	GA	26	Z	400	6

**Bottom Right Screenshot:** Shows the 'AeroNavigator' interface with 'Airline Information' and 'Contact Details' sections. The airline is 'AeroNavigator' (IATA Code: AN, ICAO Code: ARN). The contact person is 'AeroNavigator' and the email is 'meridan@aeronavigator.ru'.

# W&B Calculation Module

- Based on airline schedule in Astra DCS
- Check in information update (manual or automated)
- Real time calculation of allowed traffic load and actual traffic load
- Dynamic calculation of aircraft center of gravity
- Graphical User Interface (GUI) for easy handling
- Able to search for ideal balance conditions



# Real time automated limitation checks

- All aircraft structural limitations checks
- Aircraft balance limitation checks
- Technological alerts (2021)



# W&B Calculation Module

**Flight Quick Access**

ETD (UTC)	FLT N	DEP	ARR	STS
15:00	TK9789	AER	OVB	
16:40	XV3180	UCT	VKO	
17:00	XV3384	LED	VKO	
17:25	XV3210	KZN	TJM	
17:25	XV3210	KZN	TJM	
17:40	XV3274	MKV	VKO	
17:45	XV3142	VOG	AER	
17:45	XV3142	VOG	AER	
20:00	UT121	TJM	SGC	
23:00	UT121	SGC	VKO	
23:00	XV3137	SGC	VKO	
23:00	XV3137	SGC	OVB	
01:00	UT455	KGD	OVB	
02:00	XV3137	OVB	KJA	
02:00	XV3137	OVB	KJA	
04:00	UT121	VKO	AER	
04:35	XV3138	KJA	OVB	
04:35	XV3138	KJA	OVB	
05:55	XV3383	VKO	LED	
06:00	KOP500	VKO	TJM	
06:00	UT9072	AER	KRR	
06:00	PK050	SLY	HMA	
07:00	UT1935	AER	VKO	
07:00	UT200	VKO	LED	
07:10	IQ351	TSE	ALA	
07:35	XV3138	OVB	SGC	
07:35	XV3138	OVB	SGC	
07:45	XV3249	VKO	AER	
08:00	UT11	LED	VKO	
08:00	UT9738	AER	LED	
09:00	UT590	LED	JFK	
09:00	UT12	VKO	LED	
09:00	UT580	AER	VKO	
09:00	UT9762	AER	TJM	
10:00	PI90955	AER	SVO	
10:00	UT13	LED	VKO	
10:10	KOP500	TJM	VKO	
11:00	XV3237	HMA	EZV	
11:00	UT9734	AER	SVX	
11:00	UT14	VKO	LED	
11:00	UT16	TJM	VKO	
11:00	IQ352	ALA	TSE	
11:05	XV3250	AER	VKO	
12:00	UT15	LED	VKO	

**Flight Information**  
 UT9762 AER - TJM 762 Y249  
 09:00 VP-BAL 2/6  
 23 FEB

**Alerts/Warnings**  
 Check ULD Zones

**Loading Summary**  
 Time/Date: 09:01 25 FEB  
 Status: UTC Local

**Flight Stages**  
 -22:09 -91% -60:46 -00:40 -00:19 00:10

**Load Planning**  
 LoadControl Passengers Deadload DOW/Fuel

**Deadload Details**

No	Load Code	Bulk	DEST	Actual			Position	Position Locked	ULD ID			ULD Tare Weight (Kg)	DOW	Priority	DG/S
				Net Weight (Kg)	Pcs	Bulk Vol (m3)			Type	Serial	Owner				
4	M		TJM	500	0	0			DPE			66			
5	C		TJM	2800	0	0			PMC			102			
6	C		TJM	1500	0	0			FQA			53			
7	C		TJM	500	0	0	32L		DPE			66			
8	C		TJM	500	0	0	32R		DPE			66			
9	C		TJM	500	0	0	33L		DPE			66			
10	C		TJM	500	0	0	33R		DPE			66			

**Unallocated Deadload**  
 TJM C/500 M/500 C/2800 C/1500

**Deadload Distribution**  
 Summary: 21R, 22R, 31R, 32R, 33R, 41R, 42R, 21L, 22L, 31L, 32L, 33L, 41L, 42L, 5

**Web & Balance**  
 Flight Information: SDM 4444  
 Rossiya - Russian  
 Flight Stages: ET, D, B, L, S, M, R, E, S, D  
 Loading/Passenger Details: [Detailed list of aircraft and status]

**GA**  
 Seats: 48  
 Blocked: 0  
 Occupied: 38  
 Available: 10

**GB**  
 Seats: 100  
 Blocked: 0  
 Occupied: 90  
 Available: 10

**GC**  
 Seats: 126  
 Blocked: 0  
 Occupied: 96  
 Available: 30

**TRAFFIC LOAD**  
 TOTAL TRAFFIC LOAD: 0 25000  
 MAX OPERATIONS WEIGHT: 248974  
 LEAD FUEL WEIGHT: 153374 158064  
 TAKE OFF FUEL: 75050  
 TAKE OFF WEIGHT: 230374 237560  
 STEP FUEL: 47600  
 LANDING WEIGHT: 217174 230062  
 UNWEIGHTED PEROW LAC: 0 20572

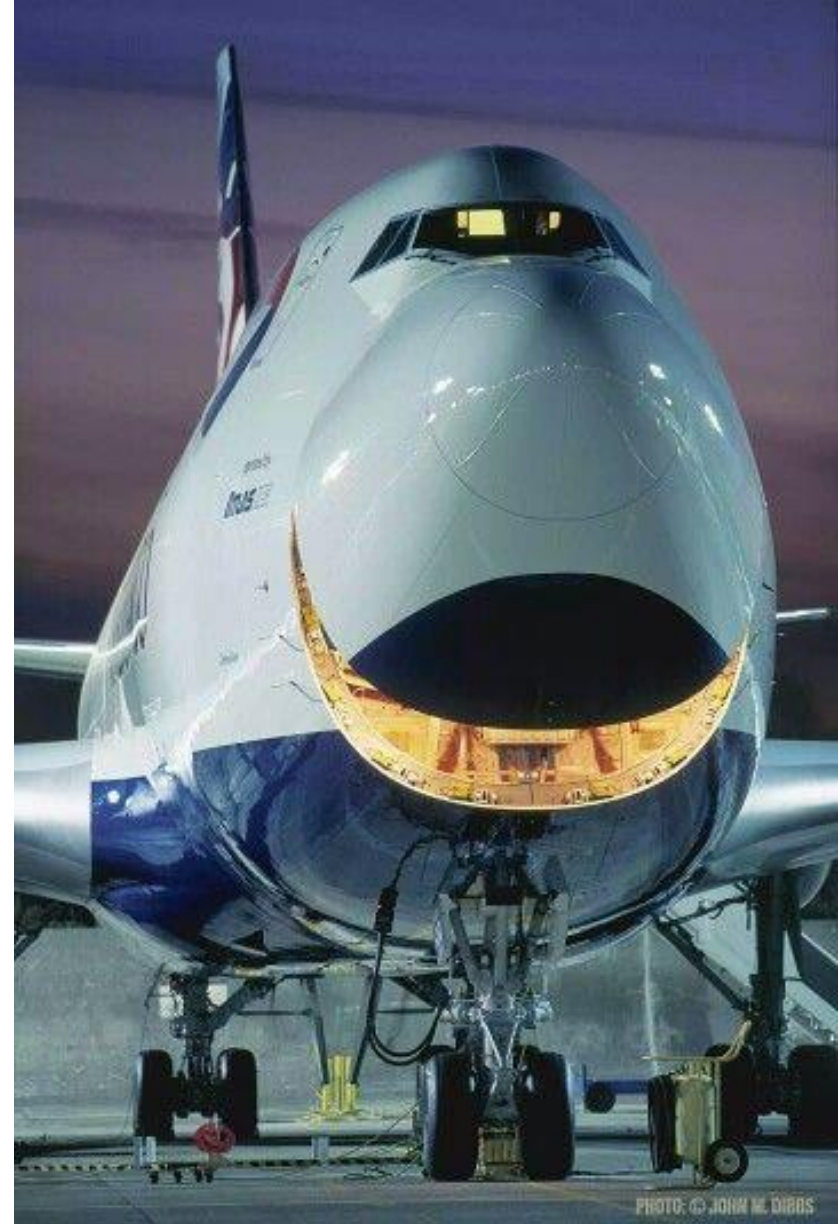
**WEIGHTING CONDITIONS**  
 GA: 0 30 45  
 GB: 0 200 150  
 GC: 0 30 126

**DISPERSTION**  
 CPT 1: 0 0 15304  
 CPT 2: 0 0 14034  
 CPT 3: 0 0 5100  
 CPT 4: 0 0 13194  
 CPT 5: 0 0 4382

**LOADING SUMMARY**  
 JMW Actual: [Table with columns for JMW Actual, NWM Actual, JAW Actual, AW Actual, Total Tare, Actual]  
 UNWEIGHTED: 0.00 0.00 0.00 0.00 0.00  
 DOT: 0.00 0.00 0.00 0.00 0.00  
 LI27PK: 0.00 0.00 0.00 0.00 0.00  
 LI27W: 0.00 0.00 0.00 0.00 0.00  
 LI27AN: 0.00 0.00 0.00 0.00 0.00

# Reporting Module

- Loading Instruction Report
- Loadsheet is issued in accordance with IATA AHM
- Prevents LIR and Loadsheet issue if any checks are violated
- Provides statistics reports (2021)





# Astra Administration Module

- All functions and actions protected by access authorization rules
- Data management
- One key access for different airports, airline and flights



# Key features W&B LIBRA

- More safety
- Cost saving
- Faster
- User-friendly
- Improving efficiency



**Thank you for  
your  
attention!**



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