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AERO Weight & Balance Module Product Overview

About AERO IT Alliance

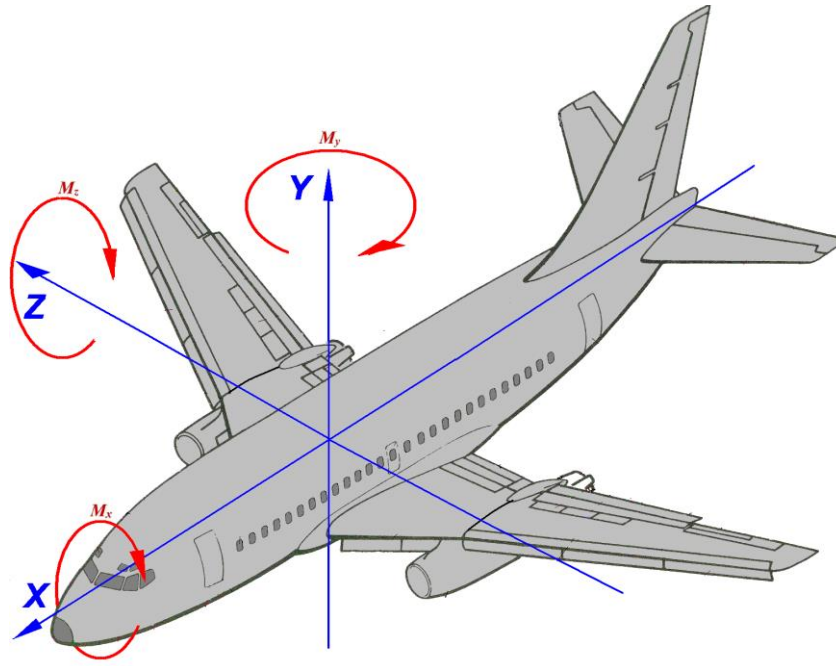


AERO IT Alliance was founded in 2018 by three companies specializing in Aviation IT (IPG, Zamar and KV Consulting) with more than 40 years of experience combined to provide full range of Advanced IT Solutions and Services for Aviation Customers Globally. Alliance HQ is located in Zurich, Switzerland.

Being an open and highly flexible unity, we believe that **our mission is to deliver Affordable and Easily Applicable Innovative Aviation IT Solutions to wider audience in Developing and Developed countries.** Especially medium and small customers can benefit from our solution.

We are highly excited by the new capabilities of the modern era, which allows us to address Customers' issues and challenges differently in a very agile and highly efficient way, not relying on costly legacy solution and practices still forced on Airports/Airlines worldwide by industry monopolies.

More information is available at <http://www.aeroitalliance.org>



AERO Weight and Balance Module

W&B Module creation drivers



- More than 40 million flights are performed annually
- Overall number of transported passengers has exceeded 4 Bln per year
- Cargo volumes are growing
- Aviation Fuel prices are high and airlines are concerned
- Qualified staff is an issue in a lot of places worldwide
- Minimize “human factor” errors

It became obvious that a solution able to perform Weight & Balance computations fast and in an optimal way is in demand to provide highest level of Passengers Safety and achieve Fuel Economy.

W&B Module Applicability areas



- Perform Commercial Load Computation
- Aircraft Balancing according to AHM560 from business jets to Airbus A-380
- Overall number of transported passengers has exceeded 4 Bln per year
- Capability to perform Remote Aircraft Balancing

Maximizing Airline and Airport Revenue is an ultimate goal while maintaining necessary Safety and Operation Control levels.

AERO W&B Advantages. Flexibility



AERO W&B Module has full data model inside for each aircraft (Reg. Number) according to AHM560 assuming full history of data versions is maintained.

Inside one version different configurations for each aircraft with specific tail number may exist:

- Several passenger cabin/seats configurations
- Time limitations for Cargo Holds and Sections
- Different scenarios of extra fuel tanks configurations

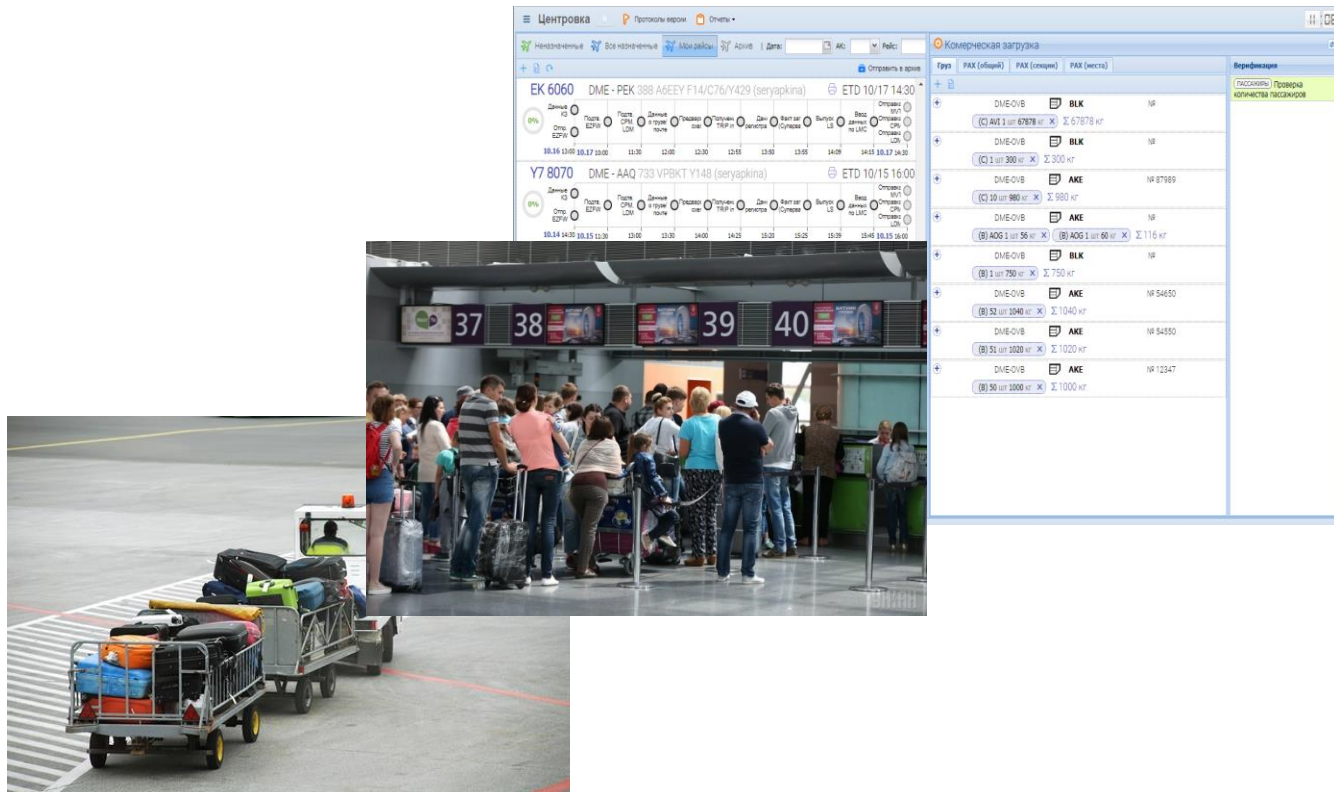
The screenshot displays the AHM 560 software interface. On the left, a sidebar contains fields for aircraft details: Version AHM, Active since (01.10.18), Responsible (Сергеева), Reason (Тест), Version number (14), Base number (ТСУА), Type BC (739), Configuration (ТК), Unit code (ИМПЕРСКАЯ), and Effective from (05.08.18). The main area is divided into two tabs: 'Конфигурация салона' (Cabin Configuration) and 'Специ' (Special). The 'Конфигурация салона' tab is active, showing a table with columns: 'Секция' (Section), 'Ряд' (Row), 'Расположение' (Location), and 'Индекс' (Index). The table lists 10 rows of cabin configuration data. The 'Специ' tab is also visible, showing a table with columns: 'Палуба' (Deck), 'Код' (Code), 'Класс' (Class), 'Первый ряд' (First row), 'Последний ряд' (Last row), 'Кол-во кресел' (Number of seats), 'Получ' (Get), and 'Индекс' (Index). The table lists 4 rows of special configuration data.

Секция	Ряд	Расположение	Индекс
1	0A	1	abc_def -0.0145100
2	0A	2	abc_def -0.0222700
3	0A	3	abc_def -0.0107500
4	0A	4	abc_def -0.0092400
5	0B	5	abc_def -0.0074700
6	0B	6	abc_def -0.0065200
7	0B	7	abc_def -0.0055800
8	0B	8	abc_def -0.0046400
9	0B	9	abc_def -0.0036900
10	0B	10	abc_def -0.0027500

Палуба	Код	Класс	Первый ряд	Последний ряд	Кол-во кресел	Получ	Индекс
1	Основная палуба	0A	C	1,00	4,00	24,00	-404,8000000 -0,0115960
2	Основная палуба	0B	Y	5,00	12,00	48,00	-143,2000000 -0,0046910
3	Основная палуба	0C	Y	13,00	20,00	48,00	-136,7000000 0,0039060
4	Основная палуба	0D	Y	21,00	27,00	36,00	-383,6000000 0,0209610

AERO W&B Advantages. Integration **AERO IT** ALLIANCE

AERO W&B Module is merging together tasks of different departments (groups): from Commercial Load planning to Aircraft Balancing and creation of Documentations and Reports.



Входные данные

Пассажир
Общий класс
Финансированы

Пассажир (общий)
Пассажир (секция)
Plus

Тип	Откуда	Куда	Кл.	Ст.
Класс				
1	Бизнес (C)	DME	OVB	5
2	Эконом (Y)	DME	OVB	160
Plus				
3	Мультикарт (M)	DME	OVB	100
4	Жизненная (F)	DME	OVB	60
5	Ресторан (R)	PMK	OVB	0

Коммерческий груз
По секциям
Финансированы

OK
DME-OVB
AKE
№ 12347

(B) 50 шт 1000 кг
Σ 1000 кг

42 место 1000 кг

Σ 1000 + Вес СГ(80) = Σ 1080 кг

OK
DME-OVB
AKE
№ 54550

(B) 51 шт 1020 кг
Σ 1020 кг

22 место 1020 кг

Σ 1020 + Вес СГ(80) = Σ 1100 кг

OK
DME-OVB
AKE
№ 54650

(B) 52 шт 1040 кг
Σ 1040 кг

33 место 1040 кг

Σ 1040 + Вес СГ(80) = Σ 1120 кг

OK
DME-OVB
BLK
№

(B) 1 шт 750 кг
Σ 750 кг

41 место 750 кг

Результат

Вывести все параметры

Имя	Значение
WZHV	73800
MTW	93900
MTOW	93500
MLW	77800
DOV	49526
DOI	47,68
BW	0
WGT	0
Толщина всего	20000
Толщина рулевого	200
Толщина полета	18000
Плотность топлива	0,8
Смена топлива	
Отметочный MAC	30
Код объема BLK (33):	
Код объема BLK (11):	
Код объема BLK (41):	
Загрузка воды:	2000
Тип крана	S
Доп. вес кранов: GS	
Доп. вес кранов: G1	
MAX (APTA+PTA+BLK) (L	
MAX Секция 11 (1013 кг)	
MAX Секция 21 (1189 кг)	
MAX Секция 21 (1189 кг)	
MAX Секция 21 (1189 кг)	
MAX Секция 22 (1090 кг)	
MAX Секция 31 (0 кг)	
MAX Секция 32 (0 кг)	

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MAX Секция 21 (1189 кг)	
MAX Секция 21 (1189 кг)	
MAX Секция 22 (1090 кг)	
MAX Секция 31 (0 кг)	
MAX Секция 32 (0 кг)	

Верификация

Лит	LoadSheet	NOTOC	C	CB	CPM	LDM
LOADSHEET	CHECKED	APPROVED	COMPANY	EDNO	01	
ALL WEIGHTS IN KGS	Seryapina	Seryapina	DME			
FROM TO FLIGHT	A/C REG VERSION	CREW	DATE	TIME	STAND	
DME/OVB 576028/630CT VP90	321	2/6	03/18CT	15.00		
LOAD IN COMPARTMENTS	WEIGHT	DISTRIBUTION				
51980	1/388	2/16768	3/18720	4/15750		
	5/60					
PASSENGER/CABIN BAG	12650	180/68/5/0	TTL	165	CAB 0	FOOD 650
TOTAL TRAFFIC LOAD	18316					
DRY OPERATING WEIGHT	49526					
ZERO FUE WEIGHT ACTUAL	67842	MAX	73800	ADJ		
TAKE OFF FUEL	19800					
TAKE OFF WEIGHT						

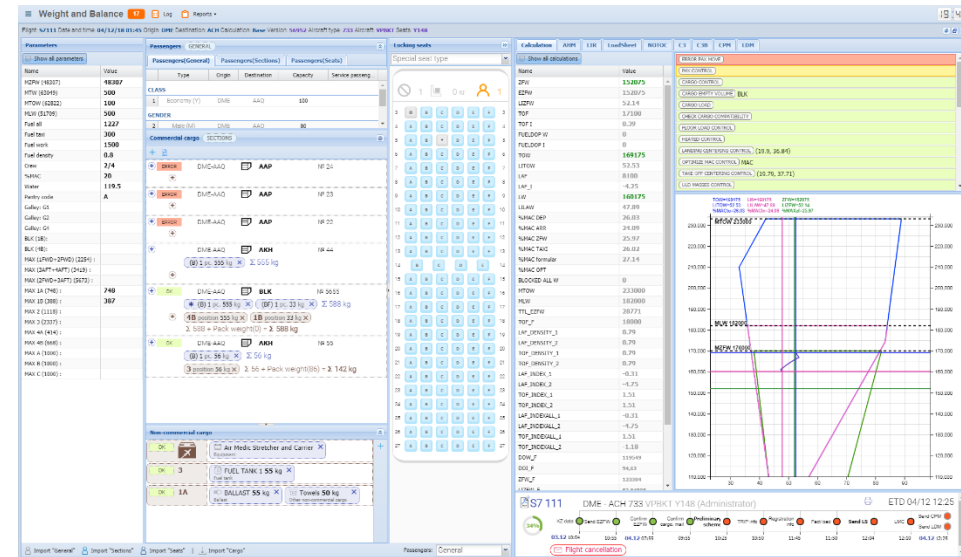
AERO W&B Advantages.Turnaround

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Service Level Agreements for Ground Handling Operations are highly relying on ability to match exact sequences and dependencies of performed Aircraft Servicing and Maintenance operations.

AERO W&B Module has precise information about Aircraft Turnaround progress thanks to integration with RMS component.

This is helping to identify “bottlenecks” in Turnaround process and take necessary actions.



AERO W&B Advantages.Logging

W&B Module has extensive user action logging capability for all data changes in Balancing and AHM560 Modules.

AERO W&B Module is logging the following actions:

- Type of action performed (creation, editing, deletion)
- Parameter changed
- Time of change
- Source of change (User, Integration, System)

The screenshot displays the AHM 560 software interface. On the left, there is a sidebar with various settings and a main window showing a table of data. The table has columns for 'Секция' (Section), 'Пол' (Gender), 'Возраст' (Age), 'Код' (Code), 'Класс' (Class), 'Первый раз' (First time), 'Последний раз' (Last time), 'Кол-во кризис' (Number of crises), 'Плохо' (Bad), and 'Индикс' (Index). The table contains 4 rows of data. Below the table, there is a section for 'Конфигурация разов' (One-time configuration) with a table of 'Секция' (Section), 'Раз' (Time), 'Расположение' (Location), and 'Индикс' (Index). The table contains 10 rows of data. The interface also includes a top menu bar with options like 'Временные ограничения' (Temporary restrictions), 'Правила' (Rules), 'Весы и константы' (Weights and constants), 'Стабилизатор' (Stabilizer), 'Топливо' (Fuel), 'Экспорт' (Export), 'CG Limits', 'Пассажиры' (Passengers), 'Крыло и хвостовая' (Wing and tail), 'Груз' (Cargo), 'Контейнеры' (Containers), and 'Грузы' (Loads). The bottom status bar shows the date '12/26'.

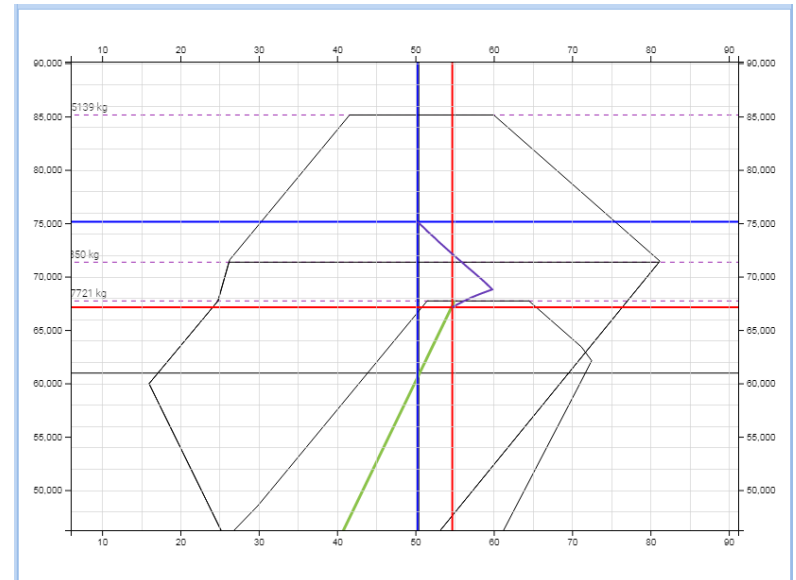
Секция	Пол	Возраст	Код	Класс	Первый раз	Последний раз	Кол-во кризис	Плохо	Индикс
1. СМ	С	10	01	С	1.00	4.00	24.00	-404,800000	-0,0115960
2. 1151	М	11	02	С	5.00	12.00	48.00	-143,200000	-0,0049010
3. 172	М	12	03	С	11.00	20.00	48.00	136,700000	0,0039060
4. Основная палуба	М	13	04	С	21.00	27.00	36.00	383,600000	0,0029610

Секция	Раз	Расположение	Индикс
1. СМ	1	abc_def	-0,0140100
2. СМ	2	abc_def	-0,0122700
3. СМ	3	abc_def	-0,0107900
4. СМ	4	abc_def	-0,0082400
5. СМ	5	abc_def	-0,0074700
6. СМ	6	abc_def	-0,0065200
7. СМ	7	abc_def	-0,0055800
8. СМ	8	abc_def	-0,0046400
9. СМ	9	abc_def	-0,0036900
10. СМ	10	abc_def	-0,0027500

AERO W&B Advantages.Automation

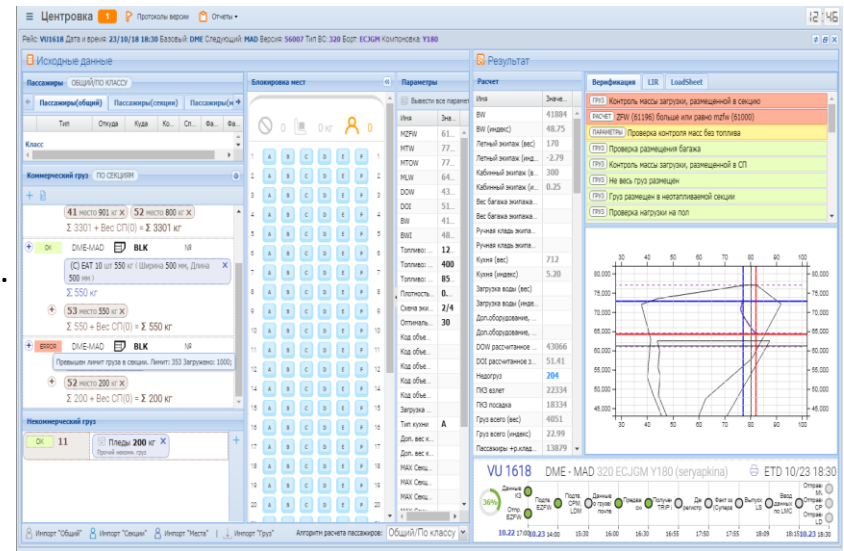


AERO W&B Module has extensive decision support capability and is automatically suggesting commercial Cargo load placement with maximum possible proximity to target values.



AERO W&B Advantages. Verification **AEROIT** ALLIANCE

In order to eliminate possibility of a “human error”,
AERO W&B Module has a built-in Intelligent verification control
taking in account multiple factors during W&B computation
and is displaying Intelligent Control results in Verification section.



AERO W&B. Summary



We believe that AERO Weight & Balance Module is among the most advanced W&B solutions available on the market today, providing high speed and precision of W&B operations for all aircraft types enhanced by extensive Messaging capabilities and Advanced Decision Making support.

AERO IT Alliance is ready to deliver customized W&B webinar on demand and discuss Pilot Trial options.



- AERO W&B Version 2 will provide Automatic Commercial load positioning within Aircraft taking into account all limitations (Roadmap 2019)
- Subsystem to create AHM565 for new aircraft types (Roadmap 2019)
- Mobile W&B Application (Roadmap 2020)
- 3D display of Cargo Hold Areas and Loading diagrams (Roadmap 2020)
- Integration with World-leading DCS through Web-services (Roadmap 2020-2021)
- Integration with external systems (AODB, Cargo Systems and e.t.c.) based on International IATA XML format (Roadmap 2020-2021)

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