

Airspace Integration Platform

Speaker: MS. ZHAO Jun (Susan)

zhaoj@adcc.com.cn

September, 2026

CHALLENGES FOR ATC

- **CHALLENGES FOR ATC**

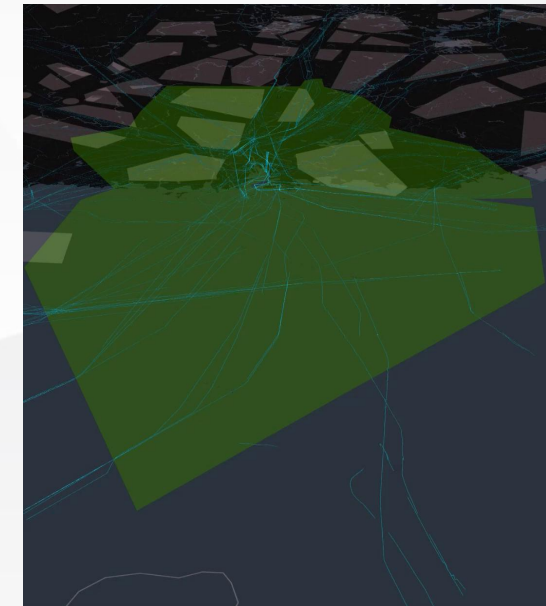
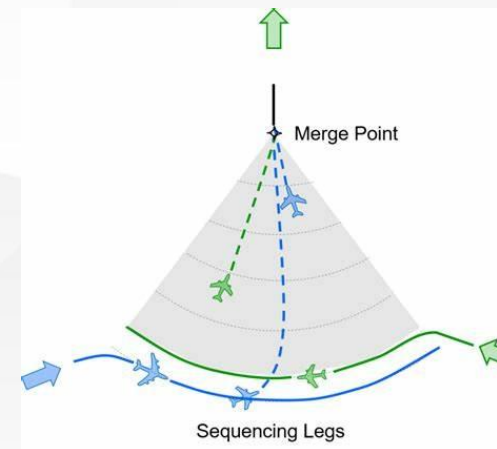
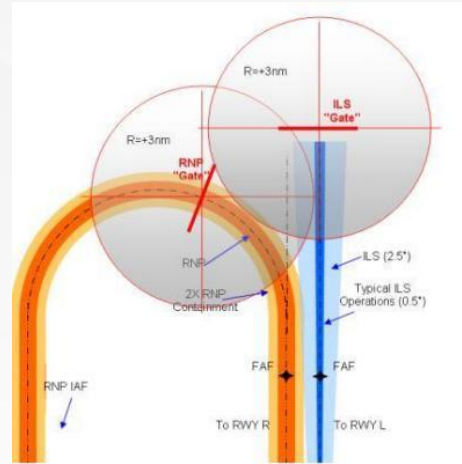
- Safety
- Capacity
- Efficiency

- **New Technology Application**

- PBN
- PMS: Point Merge System
- RNP-AR -> EOR

- **Get Prepared**

- Concept Design
- Flight Procedure Design and Validation
- Fast-time Simulation
- Real-time Simulation
- Analysis and Statistics



Integrated Airspace Design & Evaluation Process

Airspace
Concept
Design

Flight
Procedure
Design

FP Ground
Validation

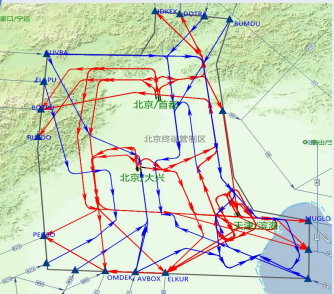
Real-time
Simulation
If Necessary

Fast-time
Simulation

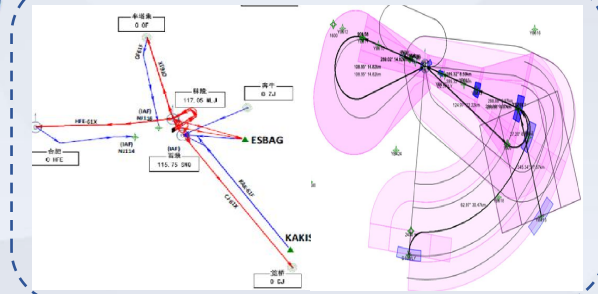
Post-
implementation
Data Analysis

Airspace Integration Platform

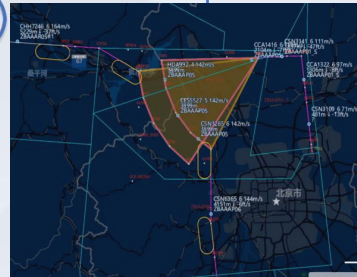
①



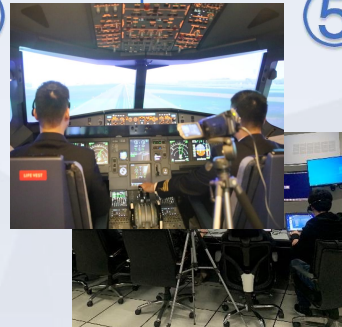
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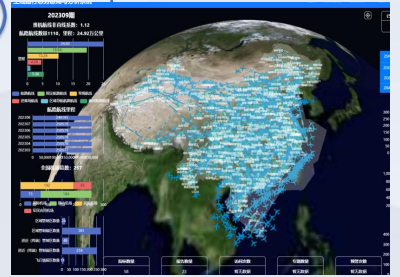
③



④



⑤



Integrated Airspace Design & Evaluation Process



> Content

01

**R&D
History**

02

**Functional
Features**

03

**Application
Status**

04

**Trial-use
Support**



01 > R&D History

Phase I: Initial Construction Phase: 2015-2018



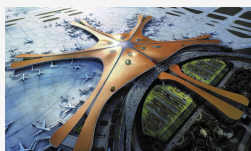
**Airspace Management Center of
ATMB,CAAC**

01 > R&D History

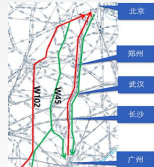
Phase II: Upgrade & Construction: 2018-2025



GBA



ZBAD



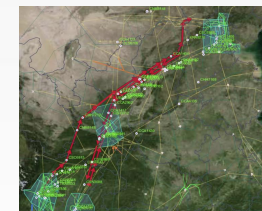
ZBAA-ZGGG



ZUUU-ZUTF



National Digital
Airspace



National Route
Network

2018

Airspace Management Center
(ASMC)

AeroPlan Upgrade

2020

AeroDesign Upgrade

2021

2023

2024

AeroStat

2025

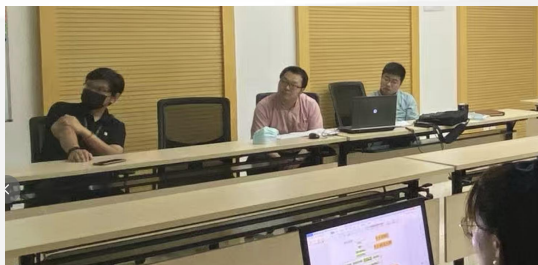
AeroFTS Upgrade

2026

System Promotion, User Ecosystem Establishment

01 > R&D History

Phase III: International Roll-out Phase: 2020-2026



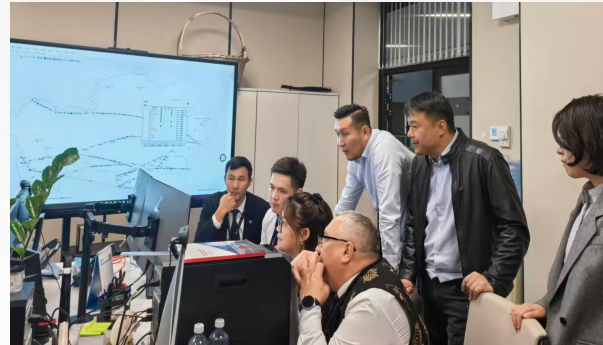
ICAO RSO

● 2020

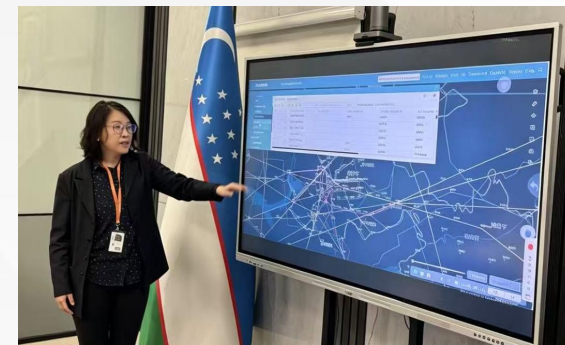


CANSO

● 2022

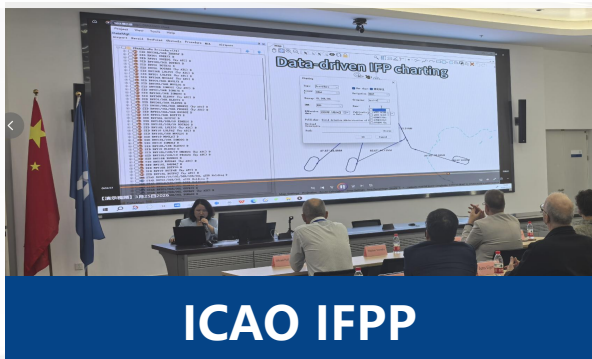


● 2023



● 2025

● 2026



ICAO IFPP



GLOBAL LINK



Kazaeronavigatsia



Uzaeronavigation

Internationalized Software Version

> Content

01

**R&D
History**

02

**Functional
Features**

03

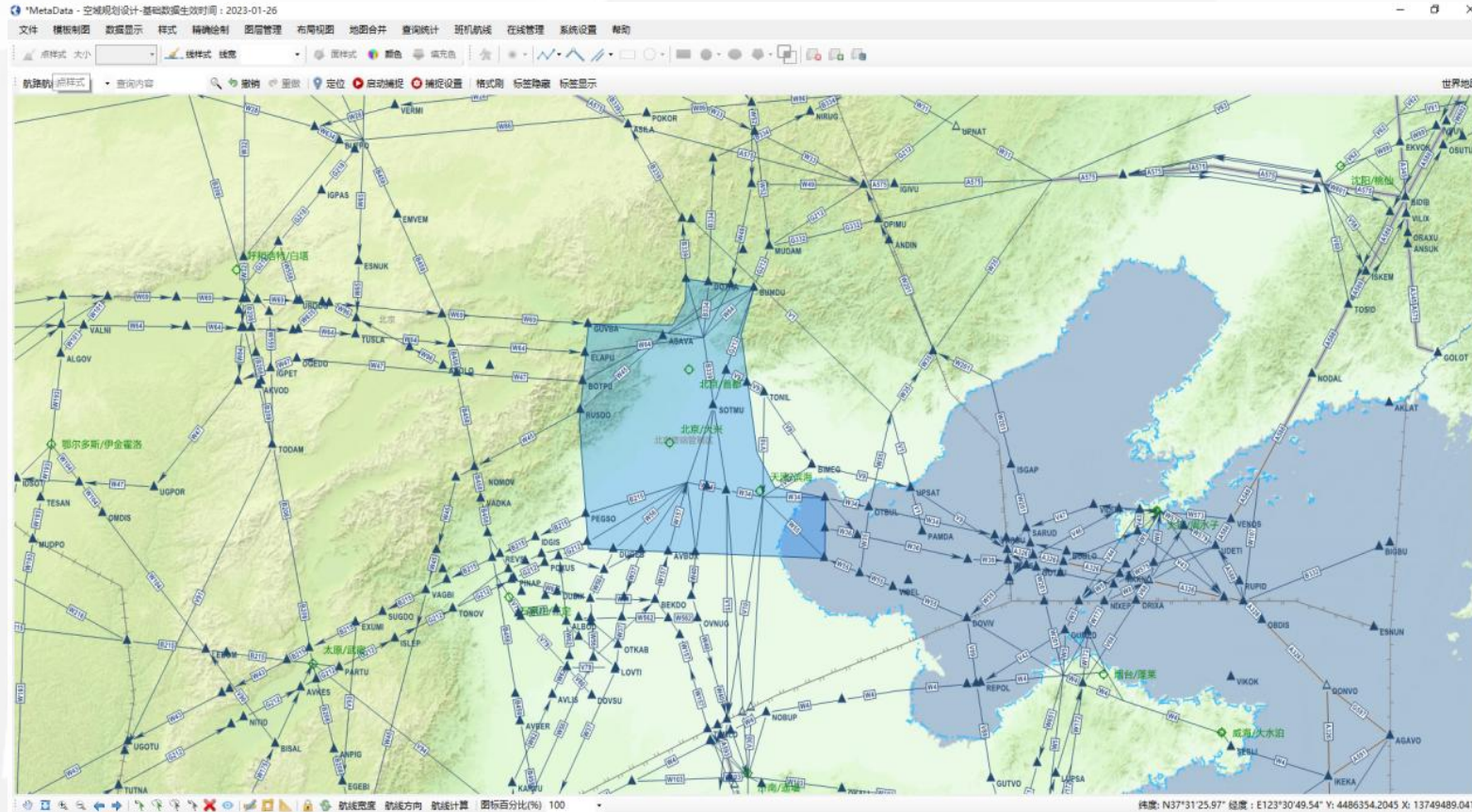
**Application
Status**

04

**Trial-use
Support**



1. Airspace Planning Software for airspace conceptual design

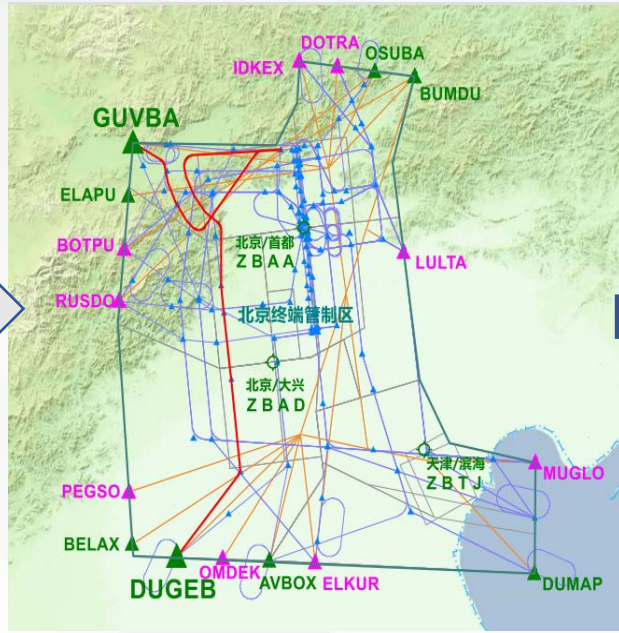
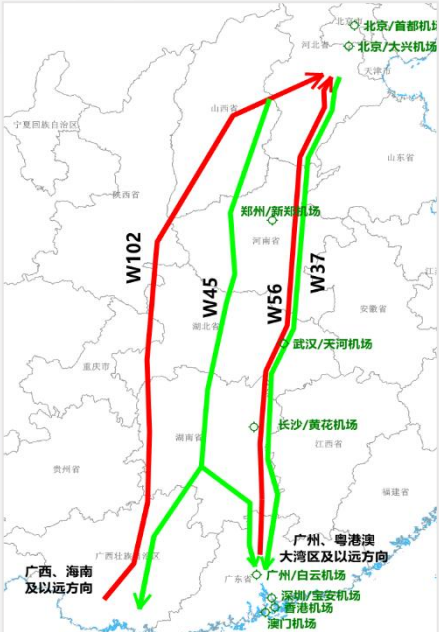


Main Functions

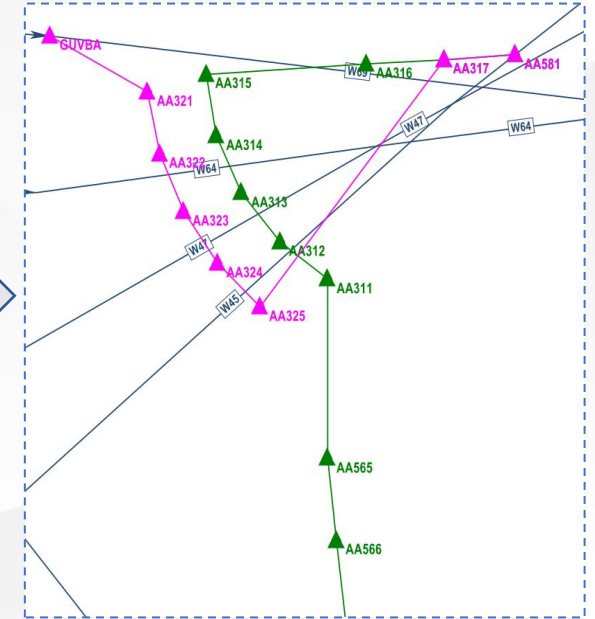
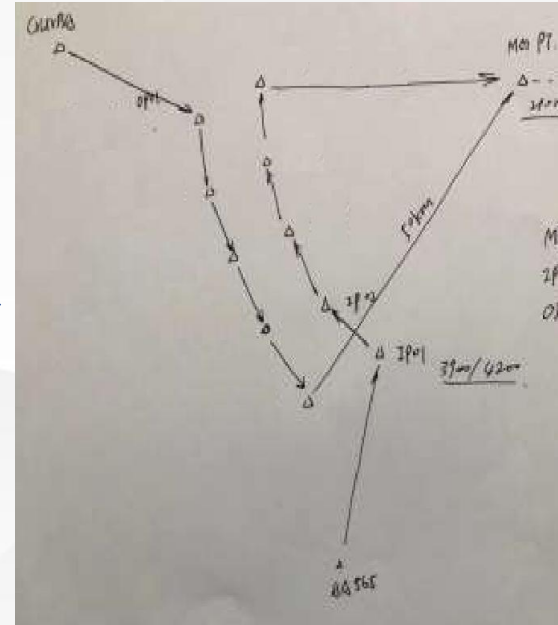
- Aeronautical Charting
- Layer Style settings
- Route calculation
- Template Setting
- Query statistics
- Layer management
- Auxiliary functions

How Airspace Planning and Design Software Assist Flight Procedure Design

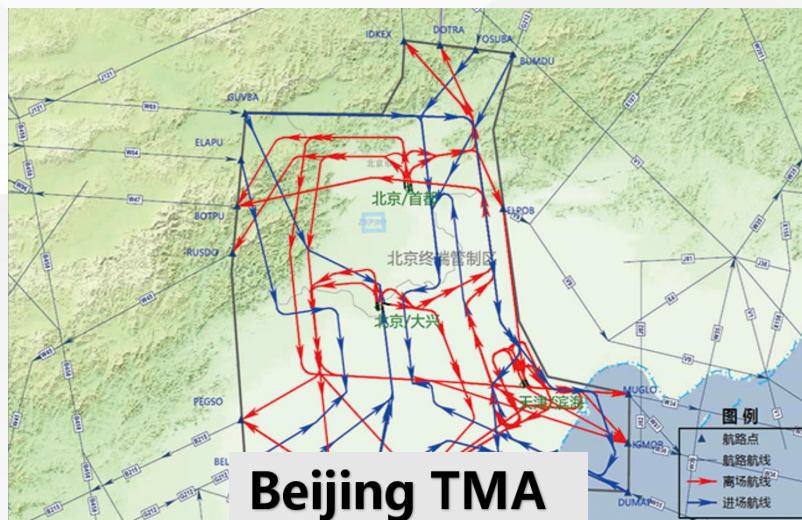
Know Your Airspace



Visualize Your Idea



Beijing Capital Intl. Airport (ZBAA) Point Merge System (PMS)FP Conceptual Design



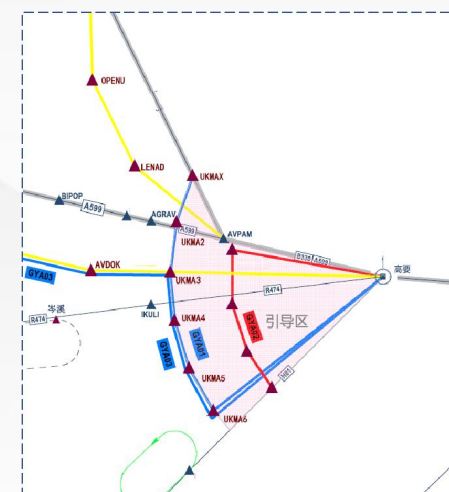
Beijing TMA



National Trunk Routes

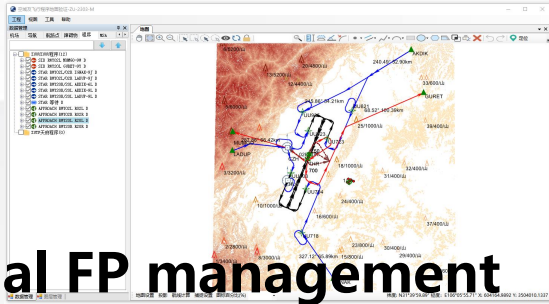


Chengdu TMA

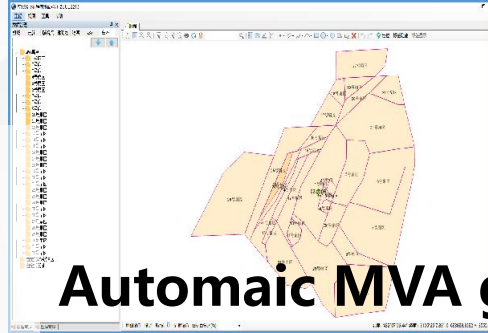


Flight Procedure New Technology

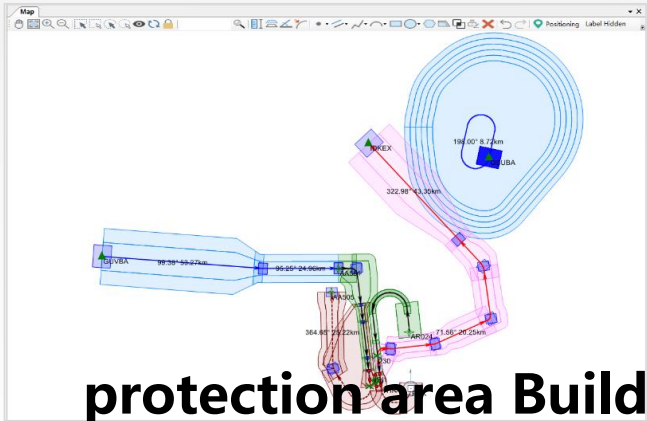
2. Flight Procedure Design and Ground Validation Software



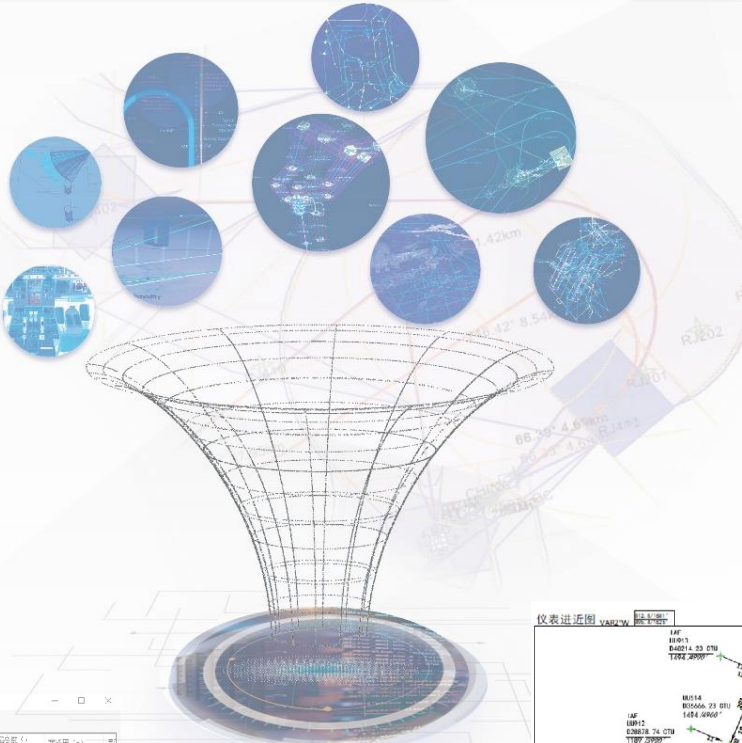
digital FP management



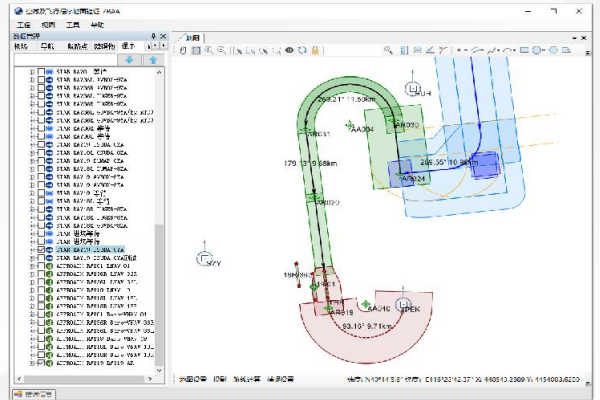
Automatic MVA generation



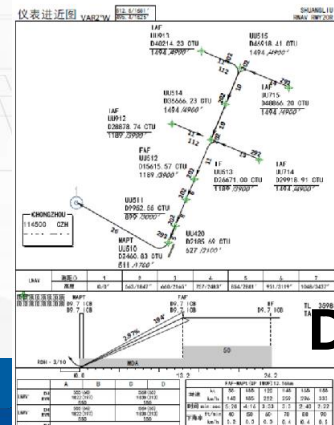
protection area Builder



Obstacle Evaluation



RNP AR/PMS/CCO CDO



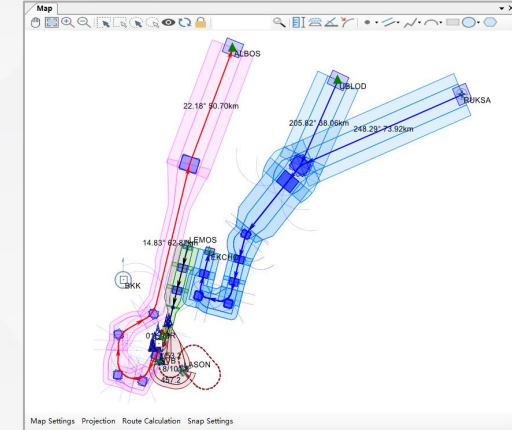
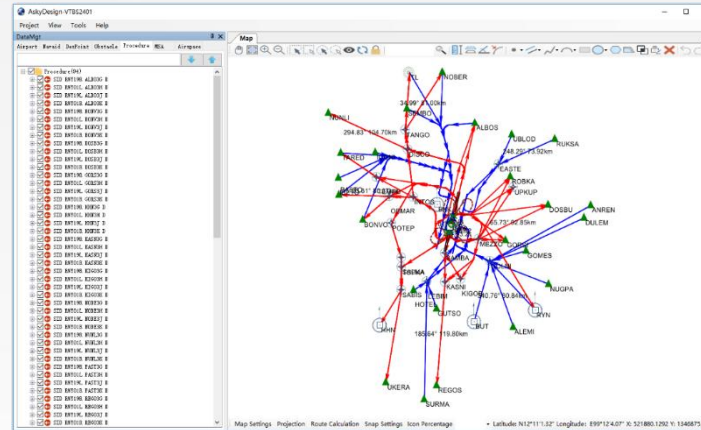
Data-driven Charting

ADCC

FP Compliance Check



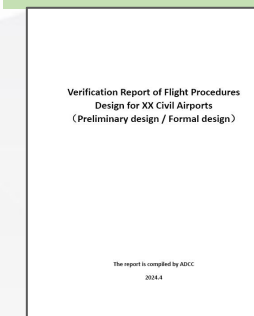
**In accordance with ICAO
annex and Documents**



Importing data packages to automatically generate tracks and protection areas, making design and inspection more convenient and flexible

Obstacle Assessment													
NO	Name of OB	Latitude	Longitude	Altitude	Height + Hrose	I	T	Surface	Height	Hpenetrate	Equivalent	H150SURFACE	Hpenetrate1
1	Radar	40°41' 10.949"	116°36' 18.4"	31.4	55.405365953	-1317.036047	916.30007990	OAC_12	1.76.22029971	-120.742738	/		
2	Tower	40°39' 17.472"	116°34' 42.2"	71.8	45.895365953	-9143.292217	2263.2305564	OAC_12	2.76.04833001	-230.1629724	/		
3	Tree	40°44' 56.174"	116°35' 48.6"	60.1	34.185365953	-2786.702027	1450.0947076	OAC_12	2.56.629110002	-222.4437541	/		
4	Tower	40°43' 43.996"	116°36' 10.1"	91.4	65.495365953	-9698.349214	99.343942273	OAC_12	2.56.01970597	-189.5343431	/		
5	Center	40°36' 53.154"	116°36' 20.4"	78.3	52.385365953	-6277.031192	270.52327190	OAC_12	1.69.49602542	-117.1100595	/		
6	Building	40°37' 6.881"	116°36' 26.6"	76.3	50.385365953	-6479.530199	73.680077609	OAC_12	1.79.54946900	-129.1640469	/		
7	Tower	40°56' 96.594"	116°36' 20.9"	87	61.085365953	-4513.279914	470.6243395	OAC_12	1.25.39297248	-44.3070762	/		
8	Barbed Fence	40°31' 28.393"	116°37' 17.4"	15.8	35.495365953	-2732.849413	542.30007990	OAC_12	1.6.49602542	-10.35714936	/		
9	Hill	40°39' 37.536"	116°35' 51.4"	245	219.085365953	-11389.95642	341						
10	GP antenna	40°33' 42.389"	116°37' 7.21"	15.6	-10.31463414	-304.8950526	-113						

Exporting reports and data



Automatic obstacle evaluation

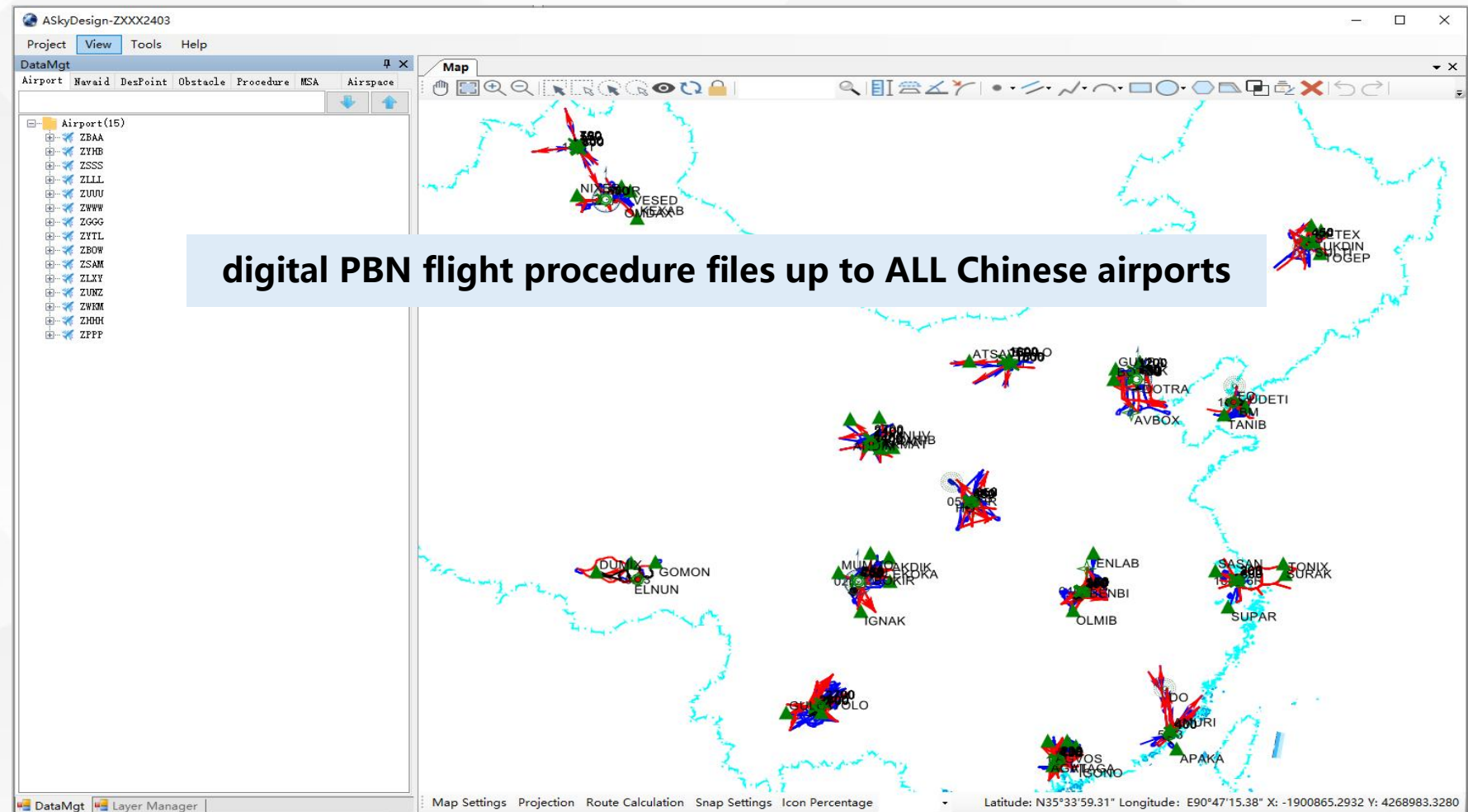
FP Data Management

Supports parsing of multiple data formats:

- AIP
- ARINC 424
- AIXM 5.1

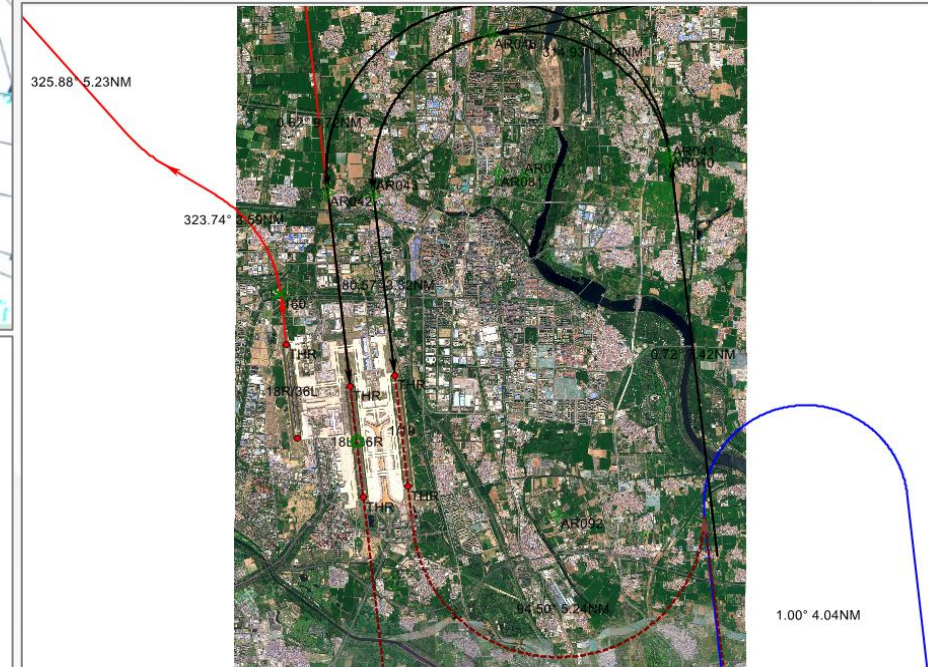
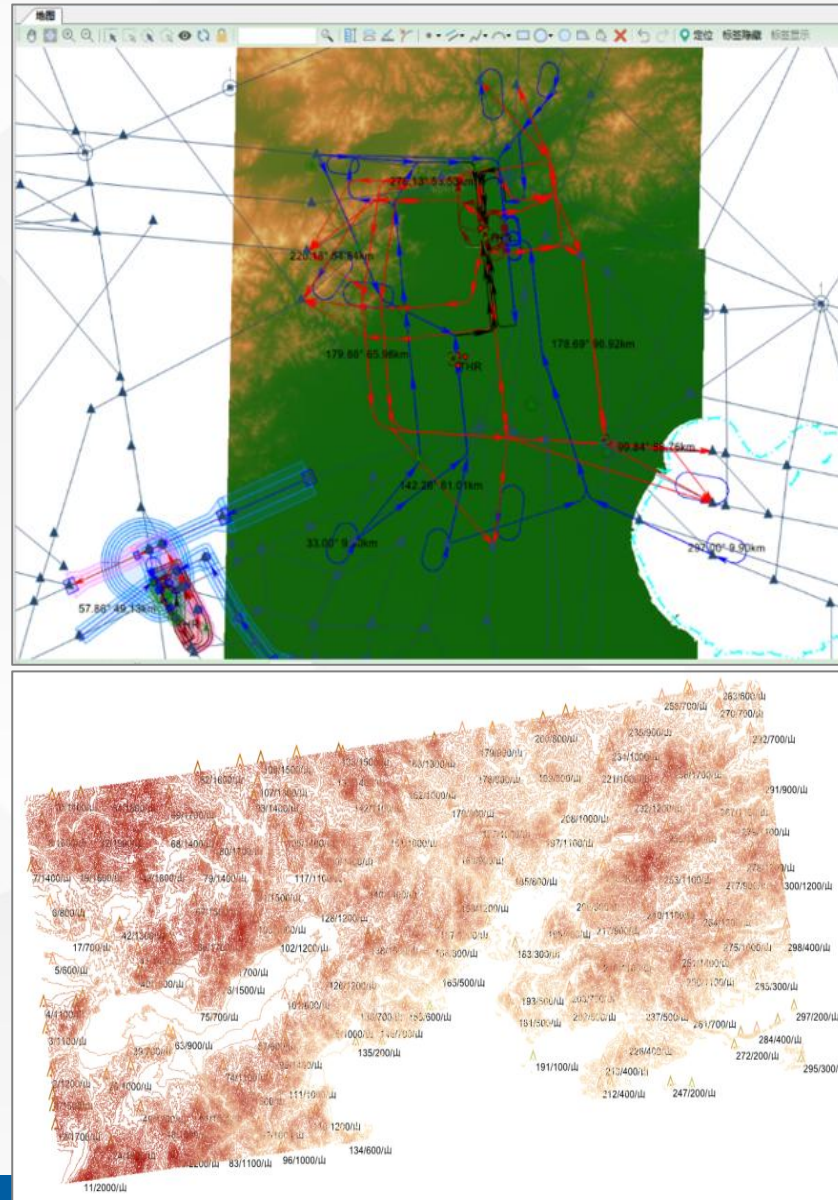
Covering all types of flight procedures:

- PBN
- Conventional
- RNP AR
- PinS

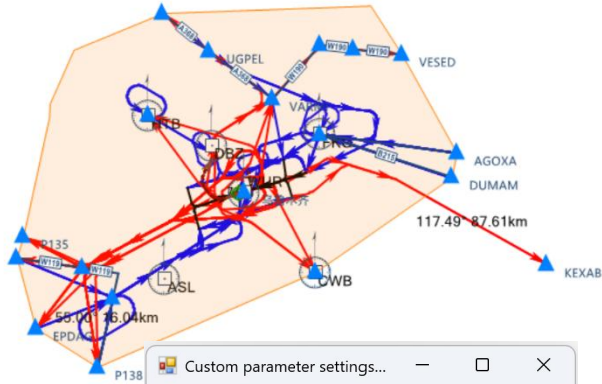


FP Data Management

Support import of JPG, DEM and other raster data, SHP, DXF and other vector data.



Airspace Compliance Check



Custom parameter settings... — □ ×

Route direction

☒ N43° 25' 44.81" E88° 49' 44.12"
to
N43° 51' 38.44" E89° 16' 16.89"

☐ N43° 51' 38.44" E89° 16' 16.89"
to
N43° 25' 44.81" E88° 49' 44.12"

☐ Two-way

☐ Restricted area

Altitude

Upper limit (inclusive): M

Lower limit (inclusive): M

Minimum safe altitude

Minimum safe altitude (including): M

Remarks

Confirm Cancel

Airport:

ZXXX

SID RWO7 VACEK-1A

SID RMY25 VACEK-2N

SID RWO7 KJLMN-1A

SID RMY25 KJLMN-2N

SID RWO7 DCBAP-1A

SID RWO7 NABCAD-1A

SID RMY25 EDC-2N

SID RWO7 CBA-1A

SID RMY25 CBA-2N(by ATC)

STAR RWO7 ABCDE-5U

STAR RWO7 ABCDE-6T

STAR RWO7 BCDAE-5U

STAR RWO7 BCDAE-6T

STAR RMY25 EDCBA-8Y

STAR RWO25 NABCD-2G

Flight Procedure

Check Type:

☒ NAIP☐ Customize

Check Accuracy:

1000m

Check Layer:

Point: tempPointLine: tempLineArea: SECTORAPP

WaypointRouteSector

SearchExport

WaypointAirway RouteArea Surface

NAIP

Procedure Name	Procedure Segment	StartPoint Altitude(m)	EndPoint Altitude(m)	Belonging Airway	Airway Segment	Lower Altitude Limit(m)	Upper Altit Limit(m)
SID RWO7 NABCAD-1A							
	AB533-NABCD	4800	5901.09	W119	BIVEX-NIXER(双向)	-	-

Customize

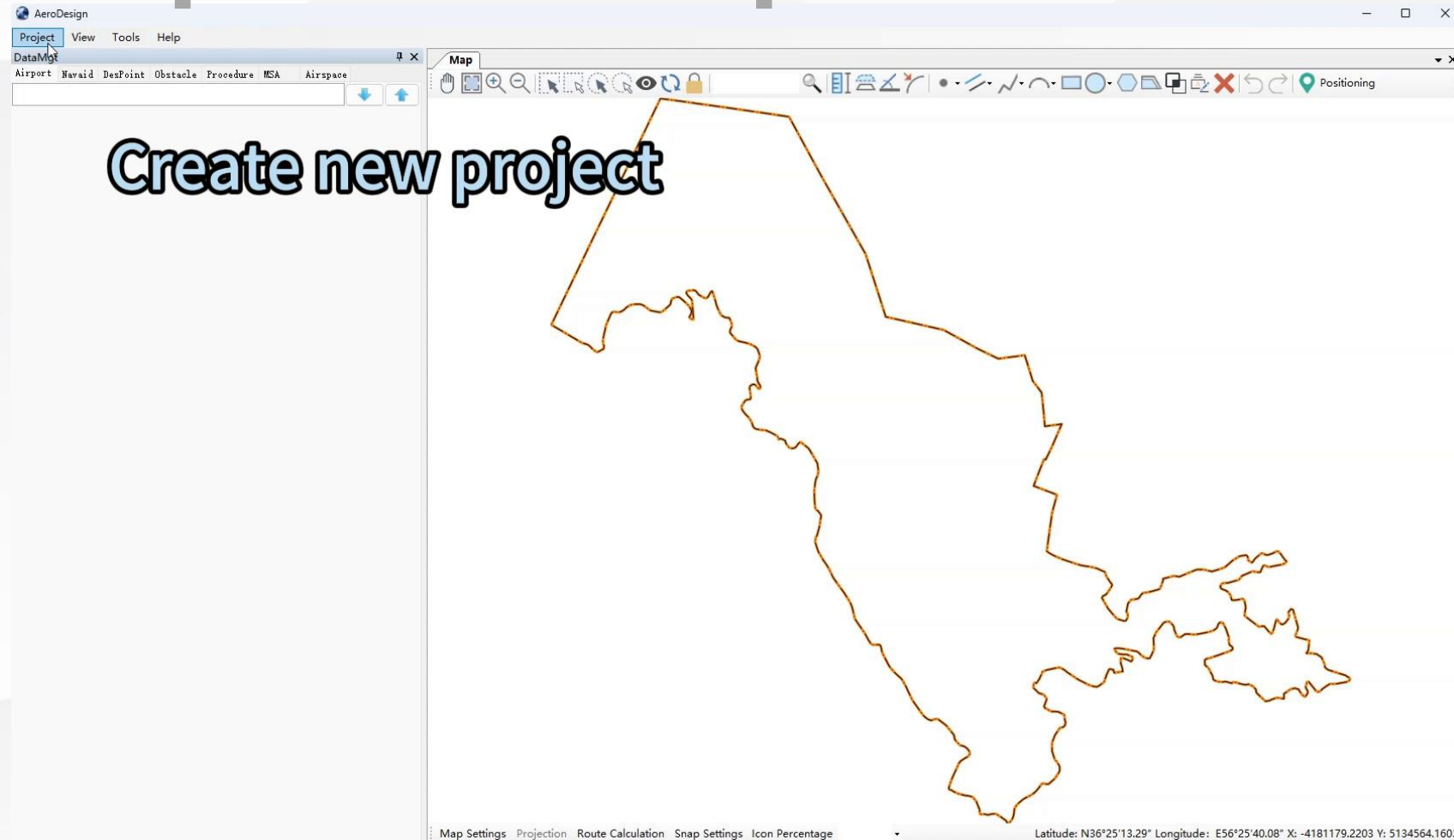
Procedure Name	Procedure Segment	StartPoint Altitude(m)	EndPoint Altitude(m)	Belonging Airway	Airway Segment	Lower Altitude Limit(m)	Upper Altitude Limit(m)	Minimum Altitude
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Compliance Check Results

Explanation 1: "Yellow: Inspection failed, indicating inconsistencies; White: Inspection passed; "-" indicates missing data; "\"represents height compliance."

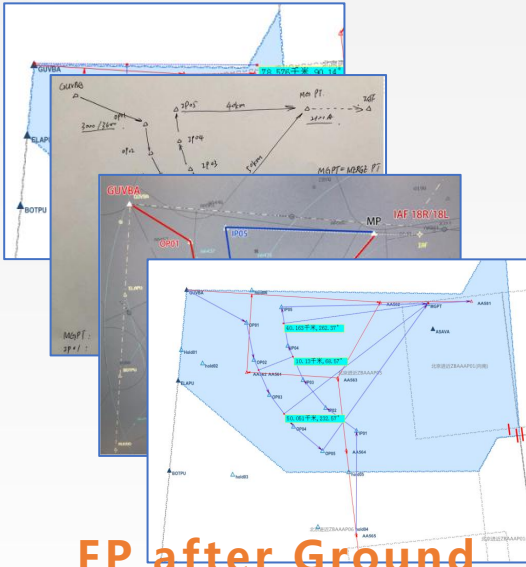
Explanation 2: "Height Difference": A negative value "-" indicates that procedure height is lower than lower limit for airway point/segment/area; "+" indicates

AIP snapshot as a quick demo



FTS INPUT

Determine the target airspace



FP after Ground Validation



北京终端区点融合系统 (PMS)
空域模拟仿真设计大纲

Design Outline for Fast time Simulation on study
the Point Merge System of Beijing TMA

空域中心飞行程序室



Time Duration for
Baseline and PMS
Scenarios

Traffic Sample

Airspace Design

Transfer of Control
Procedure

Vectoring Area

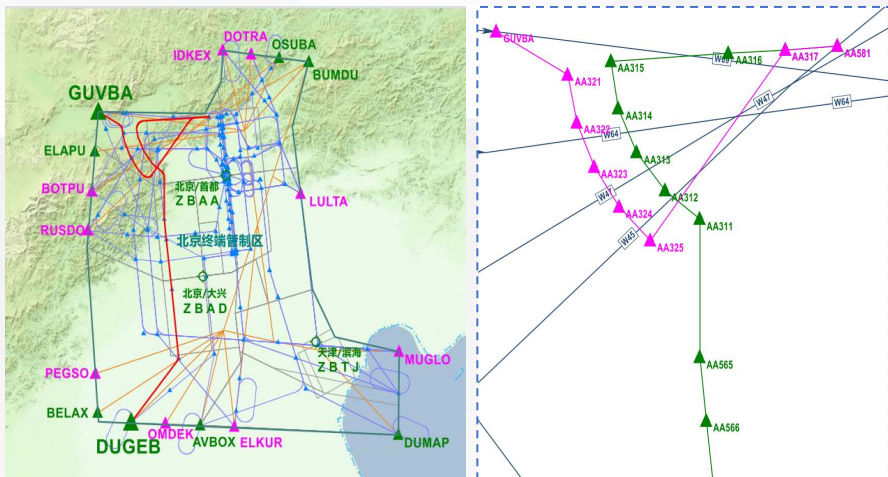
Holding Procedure

Speed Requirement

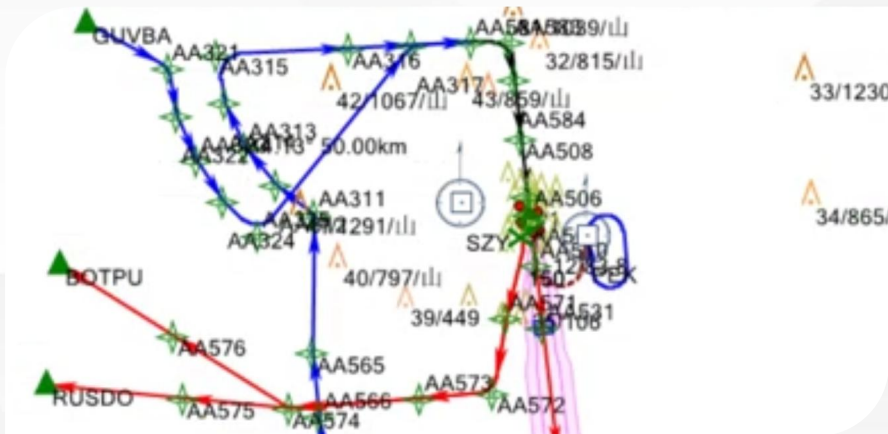
Selected indicators

WHY FTS: To predict capacity ,congestion and conflict

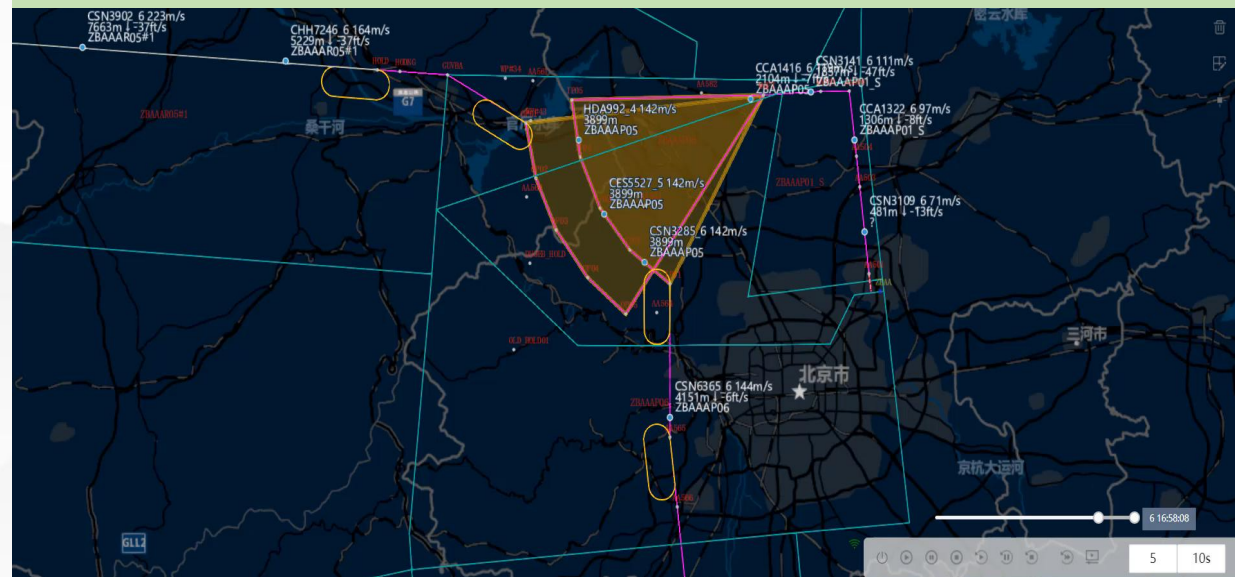
Airspace Planning and Design Software (AeroPlan)



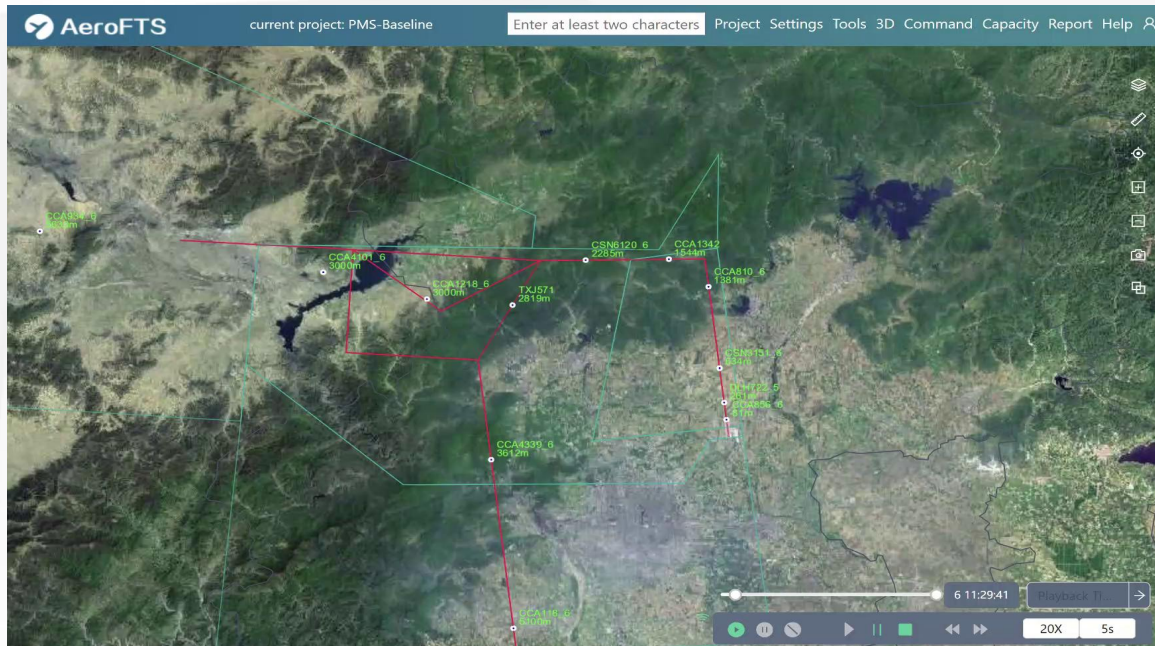
Flight Procedure Ground Validation Software (AeroDesign)



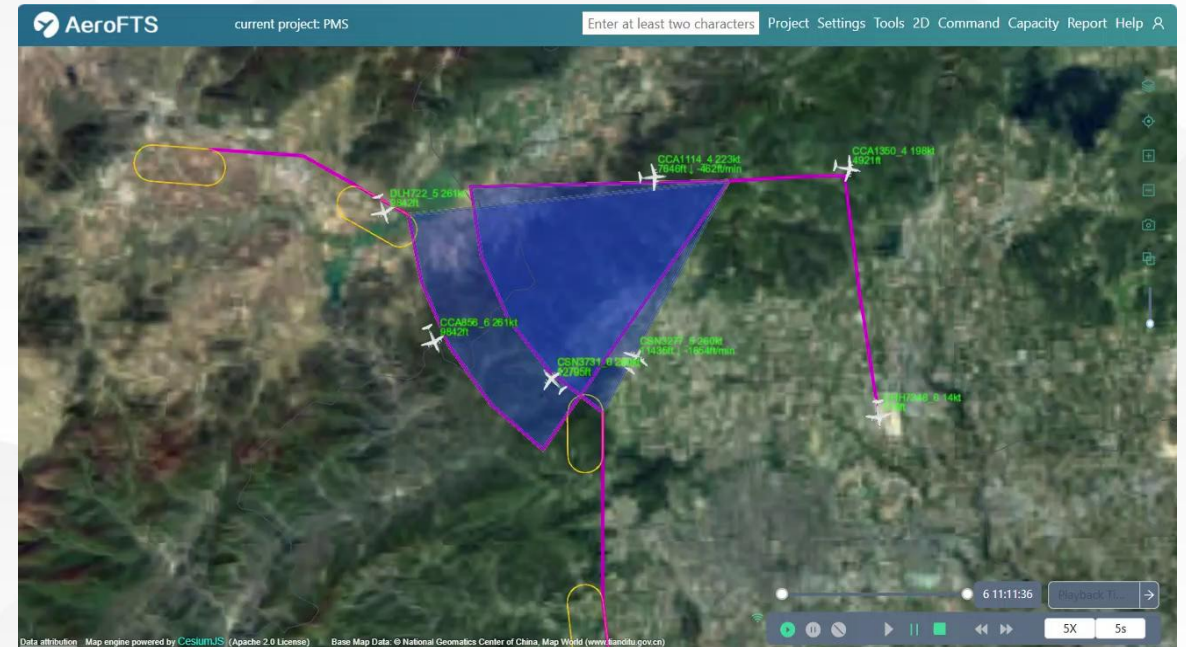
Fast time simulation software(AeroFTS)



FTS OUTPUT



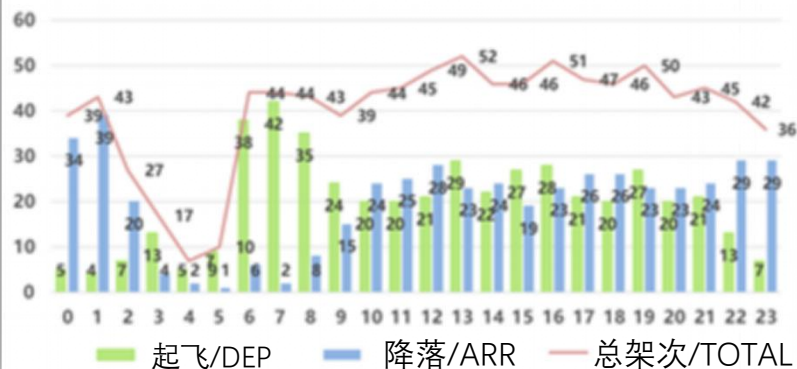
Baseline Model (Current Situation)



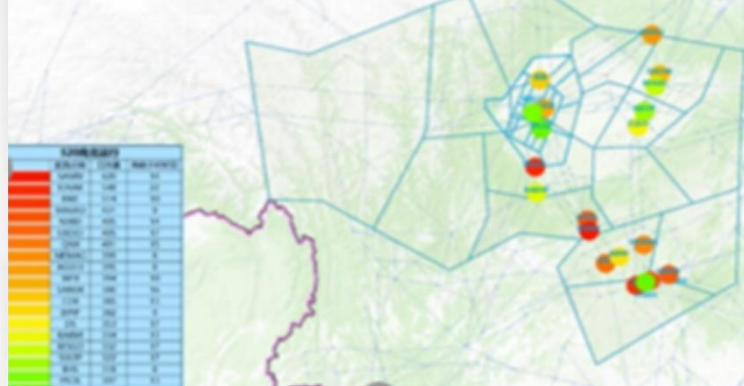
Scenario Model (Future Plan)

FTS OUTPUT

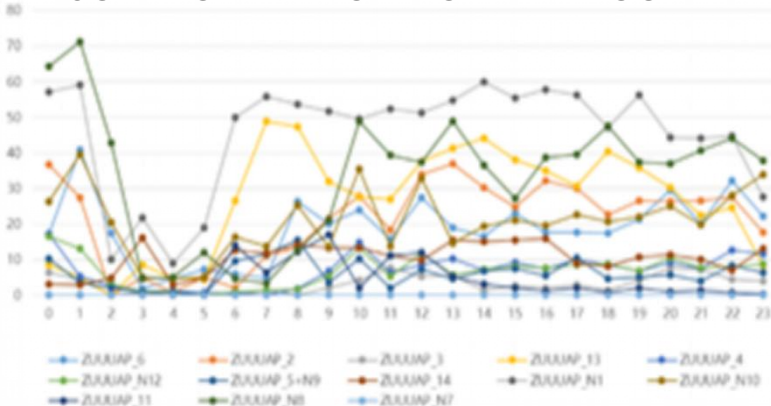
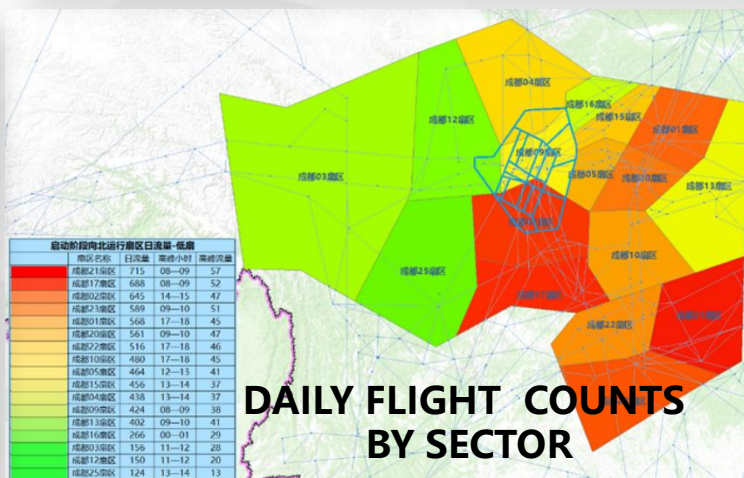
AIRPORT FLIGHT COUNTS BY HOUR



DAILY FLIGHT COUNTS BY WAYPOINT

AIR TRAFFIC DISTRIBUTION
BY ROUTE SEGMENT

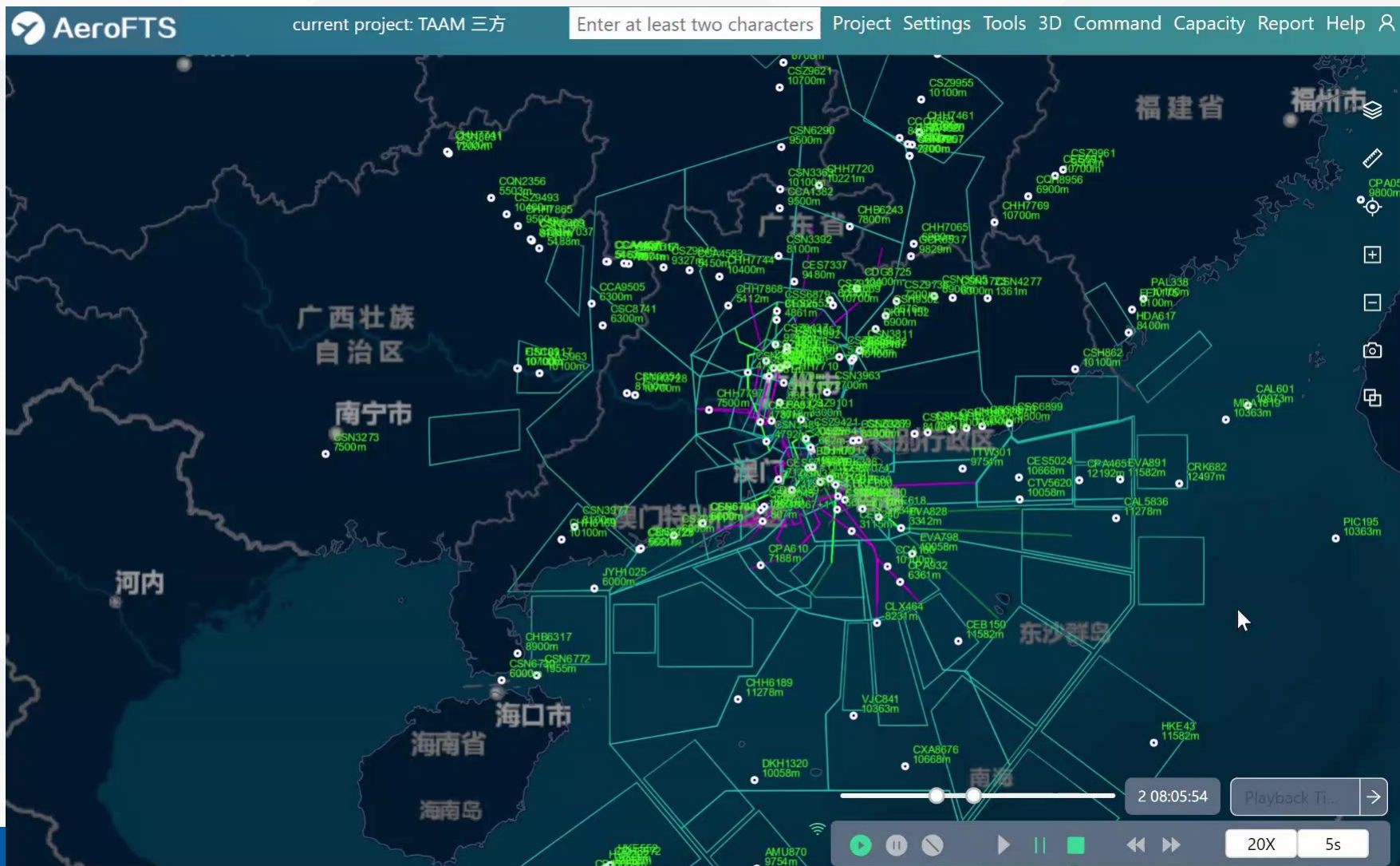
CONTROLLER WORKLOAD BY HOUR

DAILY FLIGHT COUNTS
BY SECTOR

Application Scenario: Route Network Simulation



Application Scenario: Airport Cluster Simulation



> Content

01

**R&D
History**

02

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Features**

03

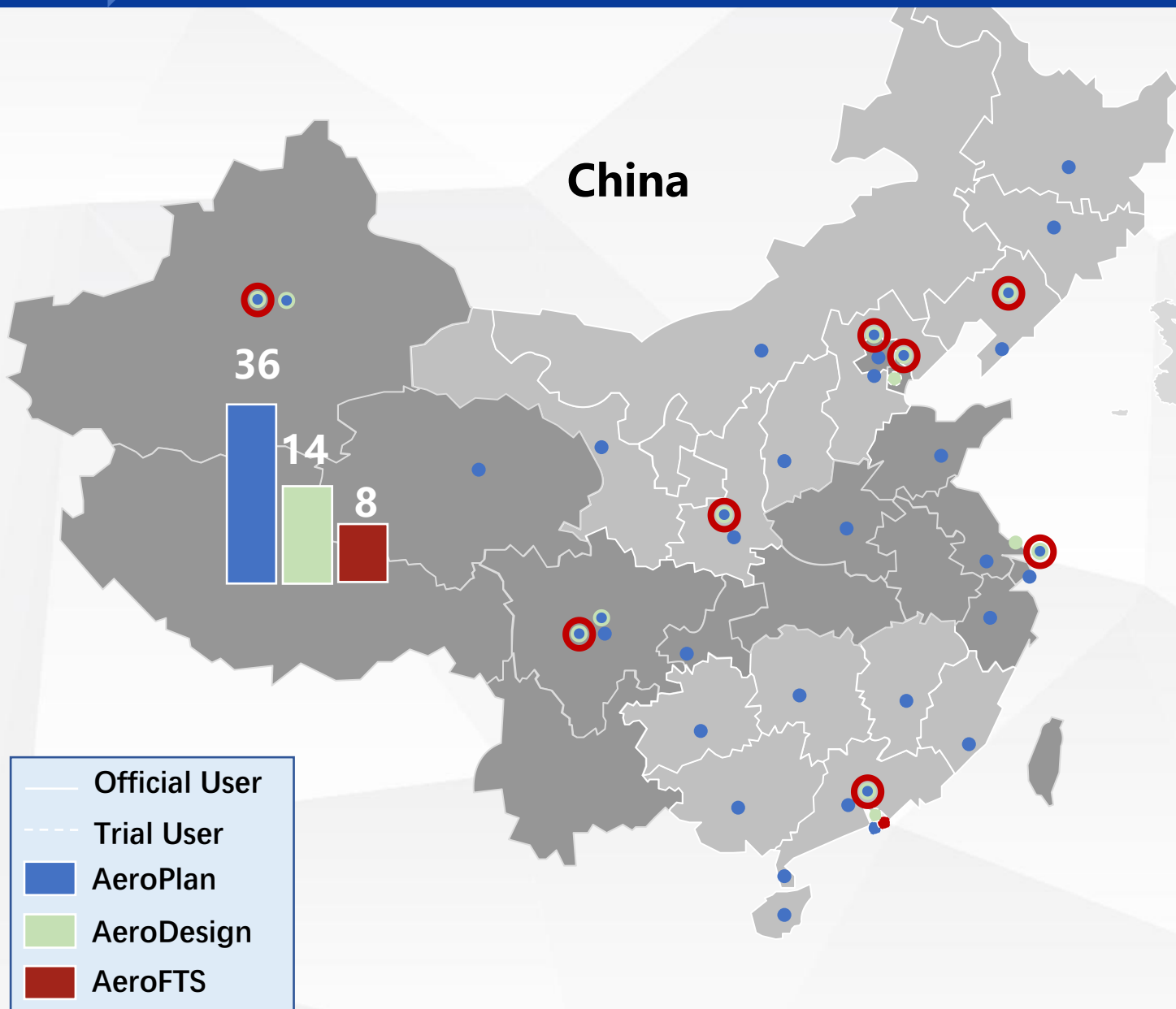
**Application
Status**

04

**Trial-use
Support**



Application Status



Application Status



China Regional ATMBs



KAZAERONAVIGATSIA



Application Status



UZAERONAVIGATION



HongKong CAD



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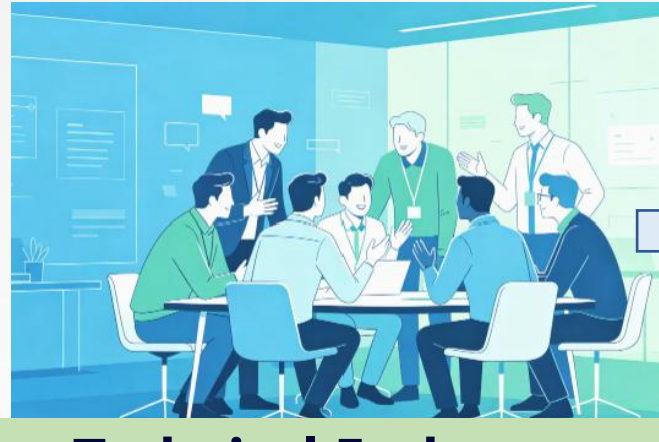
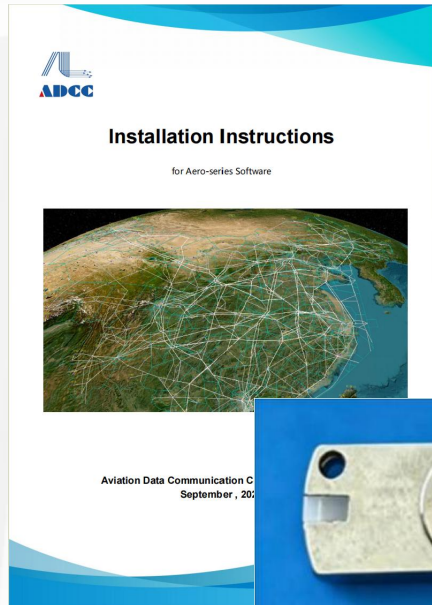
04

**Trial-use
Support**



> Trial-use Support

AeroDesign Trial Version



Technical Exchange



FPP Trial Deployment

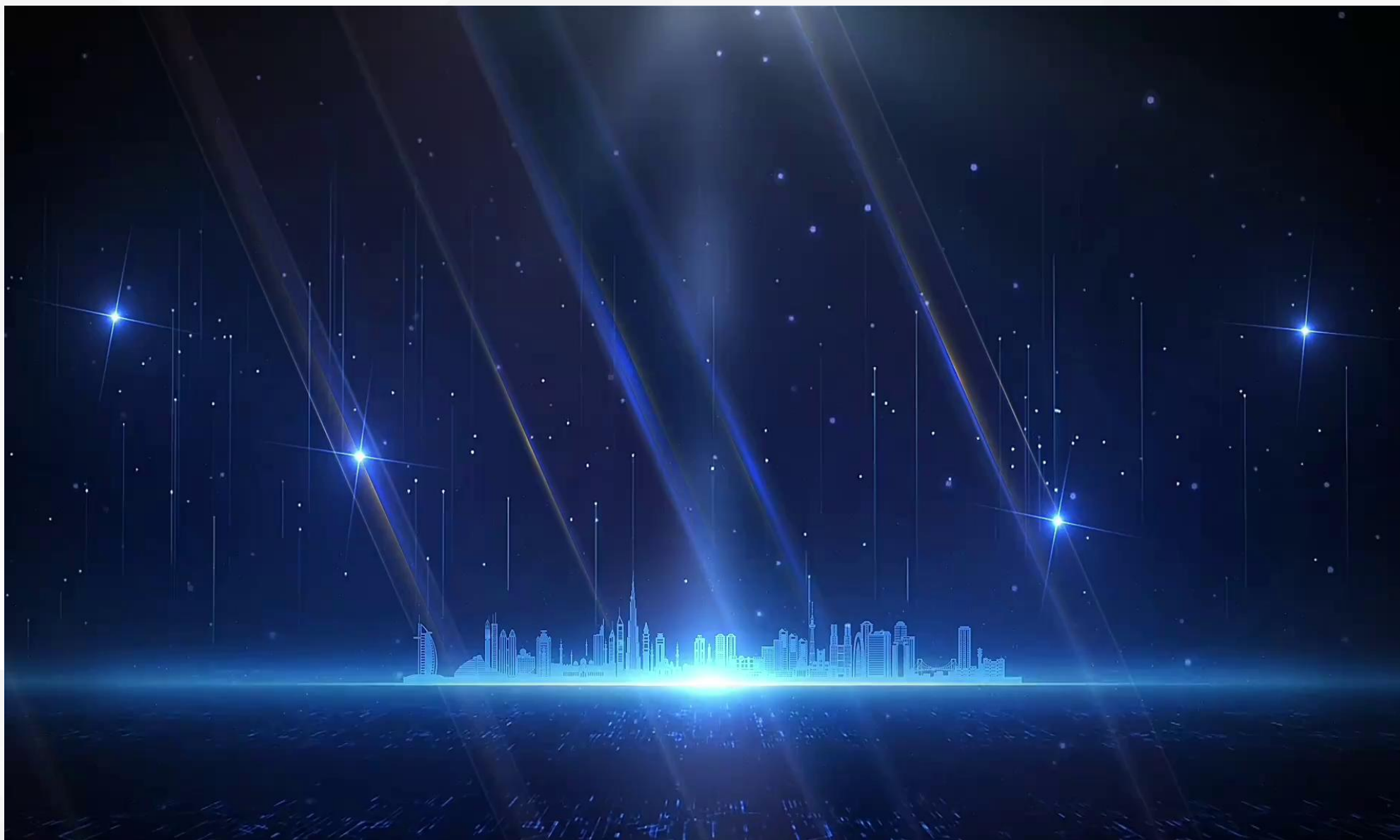


On-site Communication



Remote Support

02 > Integrated Software Platform



THANK YOU

Aviation Data Communication Corporation(ADCC)
www.adcc.com.cn

Presenter: MS. ZHAO Jun
zhaoj@adcc.com.cn

