



# SmartAir 数字化航空服务平台

(SmartAir Digitalized Aircraft Service Platform)

中国航空器材有限责任公司  
(航材共享平台公司)  
CHINA AVIATION SUPPLIES CO., LTD  
(THE MATERIALS PLATFORM COMPANY)

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DIGITALIZED AIRCRAFT SERVICE PLATFORM

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**公司介绍与企业战略**

CORPORATE INTRODUCTION AND STRATEGY

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# 航材共享平台历史背景

## Corporate History



**中国民用航空局 (CAAC)**  
Civil Aviation Administration of China



**国务院国有资产监督管理委员会 (SASAC) State-owned Assets Supervision and Administration Commission of the State Council**



**国务院国有资产监督管理委员会 (SASAC) State-owned Assets Supervision and Administration Commission of the State Council**

**中国航空器材进出口总公司 (CASC) China Aviation Supplies Corporation**



**中国航空器材集团有限公司 (CAS) China Aviation Supplies Holding Company**





全资子公司  
Wholly Subsidiary of CAS

合资平台公司  
JV by the three main airlines, CAS, and China Reform Holdings Co., Ltd

**中国航空器材进出口有限责任公司 (CASC) China Aviation Supplies Imp. & Exp. Co., Ltd**

**中国航空器材有限责任公司 (CAS) China Aviation Supplies Co., Ltd**

1980  
公司成立  
Company Founded

1980 - 2002  
计划经济阶段  
Planned Economy Period

2002  
民航企业重组  
Reorganization

2002 - 2016  
传统模式市场化阶段  
Traditional Marketization Period

2016.10.18  
平台公司成立  
The New Company Founded

智慧航材阶段  
SmartAir Period

# 平台公司成立

## Construction of the Materials Platform Company

### 十三五发展理念:

- 创新、协调、绿色、开放、共享。
- In line with Government National Development Policies: 'Innovating, Coordinating, Environmental, Open-minded, and Sharing'.



### 共享理念:

- 发挥行业资源集成优势，优化配置，提质增效，多方共赢；符合国家发展战略，行业发展需求。
- SHARING: Using the strength of resource integration in the industry, optimizing resource allocation, improving efficiency and quality, and creating a win-win environment.

概念发起  
Concept Generated  
2011



签署框架协议  
Signed Framework Agreement  
2012



新公司成立  
New Company Founded  
2016/10/18

# 平台公司发展战略

## Corporate Development Strategy

- **愿景 VISION**

将共享业务扩大到民航全行业，成为国际一流的航空保障服务商。

Taking the pooling service to the whole aviation industry, being a world leading integrated aviation service provider.

- **目标 OBJECTIVES**

为民航业提供基于互联网+大数据分析的客户化解决方案

Providing customized aviation service solutions supported by Big Data and Internet Technology to civil aviation industry.

# 平台公司一站式解决方案

## CASC One-Stop Solutions



# 航材共享板块 CASC Business



北京凯兰航空技术有限公司

中航材凯兰航空技术公司  
CASC-Kailan Technik

飞机维修



AIRBUS

中航材华欧支援中心  
CASC-Airbus Hua-ou  
Support Center  
OEM航材支持



中航材飞天联合公司  
CASC-FTS  
地空数据链



中航材导航技术公司  
CASC-NAVI DATA  
导航数据库



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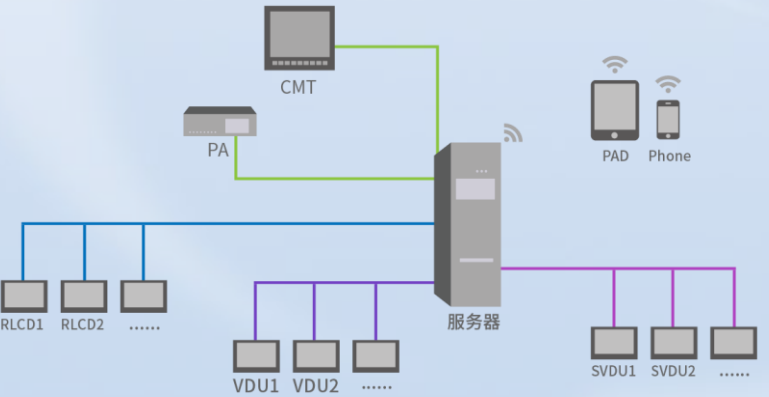
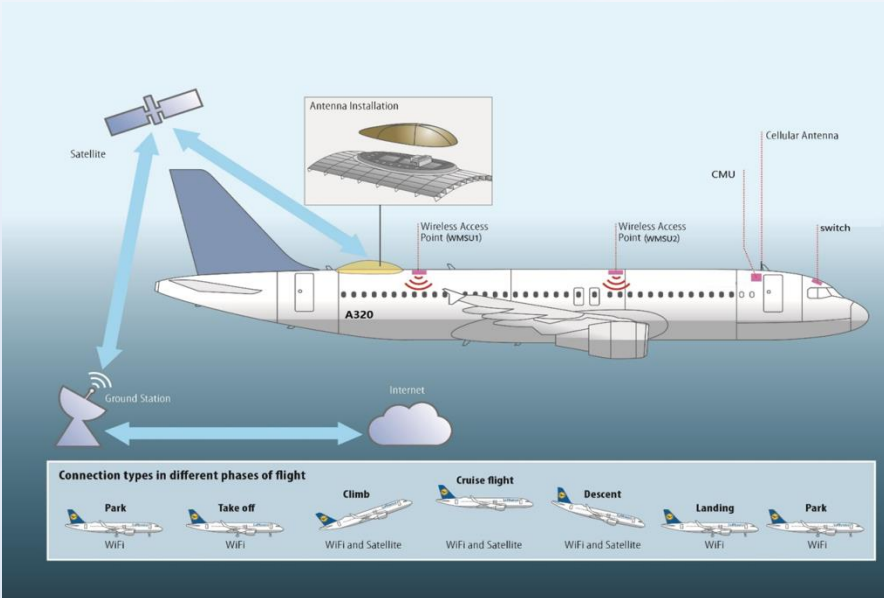
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数字化飞机的互联需求

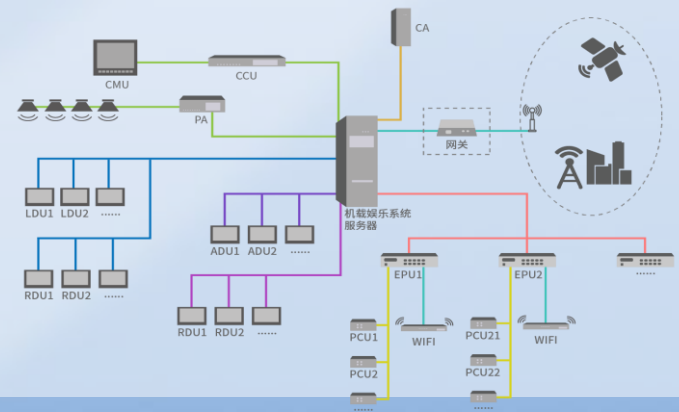
CONNECTIVITY REQUIREMENTS OF DIGITALIZED AIRCRAFT

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# 机上互联趋势 Inflight Connectivity Trend

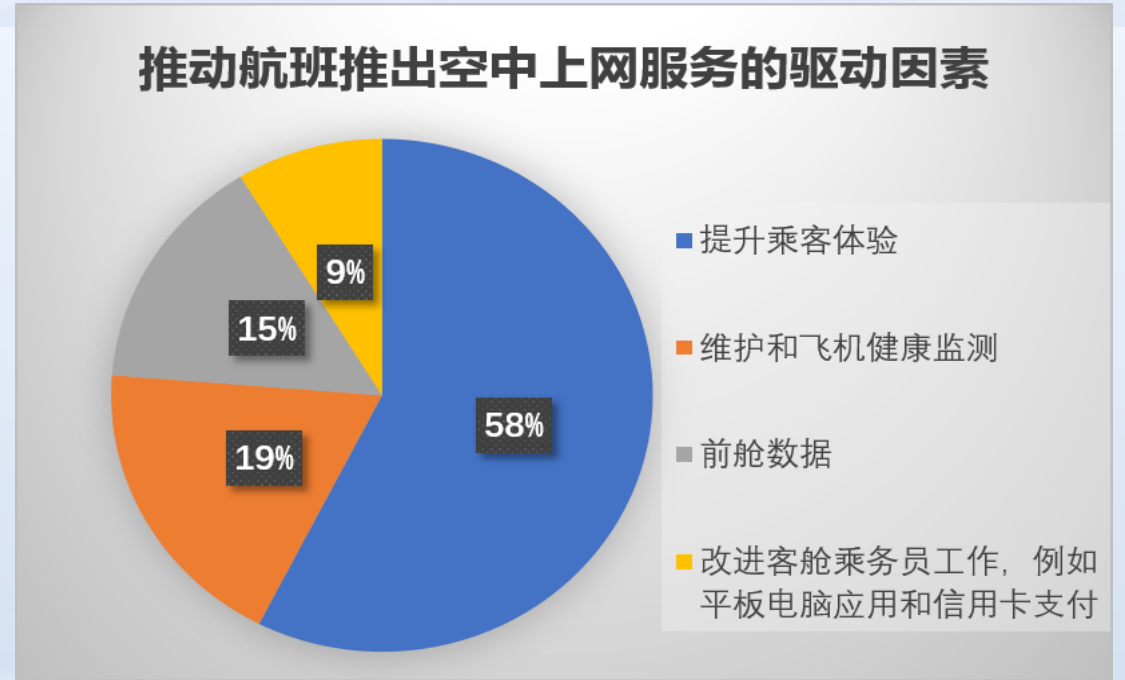
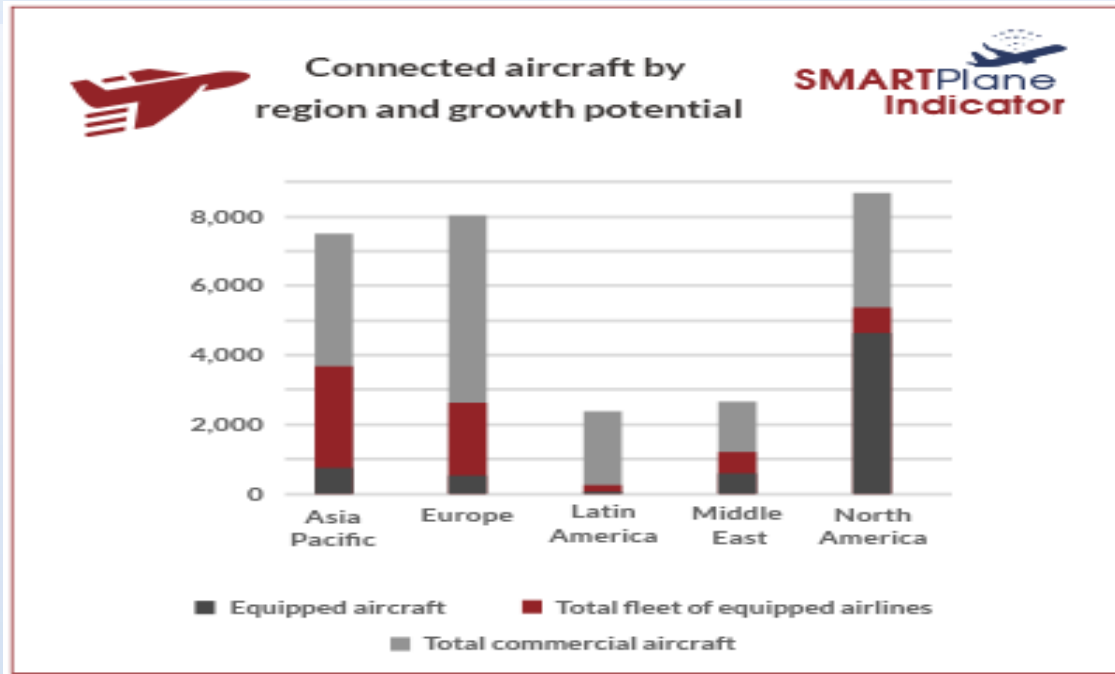


## 从机上局域网到互联飞机 Inflight WiFi To Connected Aircraft



# 机上互联趋势

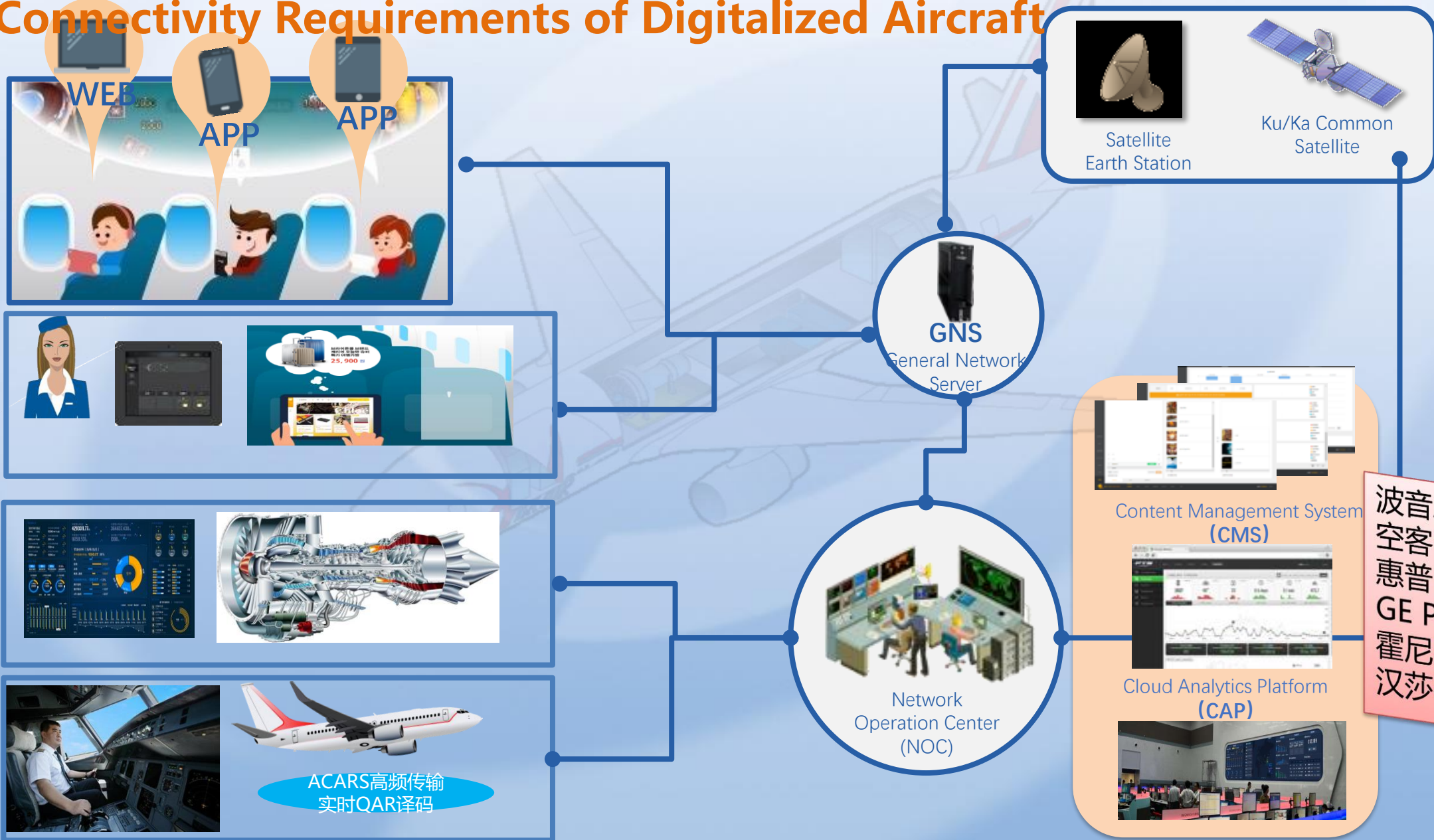
## Inflight Connectivity Trend



根据8月发布的《2018CADAS航空市场趋势报告》显示，目前全球已有82家航空公司提供机上Wi-Fi服务，较2017年增长17%，预计到2025年，全球2/3的航空公司机队将提供空中上网服务。在空中乘客可以和地面随意进行无间隔联系，这背后会潜藏巨大的商业价值（庞大的用户流量），而且也会为机载互联网产业链上的参与方创造更多的业务发展空间，包括航空公司，机场，飞机和发动机制造厂，飞机零部件供应商及服务运营商等。

According to the 《2018CADAS aviation market trend report》 released in August, 82 airlines around the world now have already provided in-flight Wi-Fi service, increased by 17% compared to 2017, and it is expected to be by 2025, two-thirds of the world's airline fleet will provide air-to-air services. In the air, passengers can freely communicate with the ground without any barriers, bringing more commercial value. Also, more business

# 数字化飞机的互联需求 Connectivity Requirements of Digitalized Aircraft

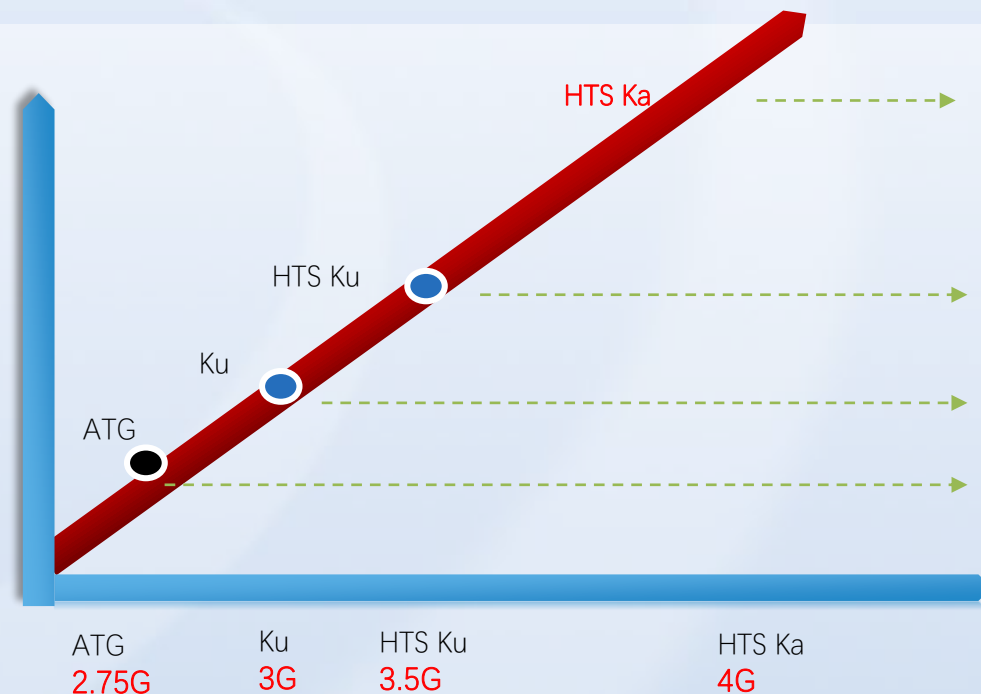
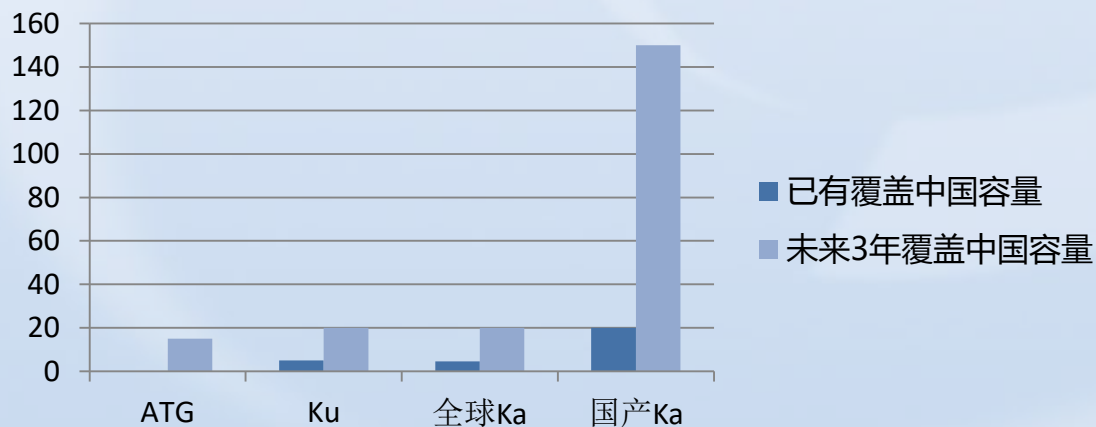


波音AHM  
空客Skywise  
惠普EHM  
GE Predix  
霍尼韦尔 Go-Dir  
汉莎HVIATAS

# 数字化飞机的互联需求

## Connectivity Requirements of Digitalized Aircraft

- ◆ATG: 窄带技术实验和应用
- ◆传统Ku: 单星2Gbps左右, 中国所有用于机上互联网的Ku卫星容量小于1Gbps
- ◆HTS Ku: 亚太6D预计2019年底发射, 国内容量15Gbps左右
- ◆HTS Ka: 已有容量20Gbps, 已有规划容量400Gbps



### 空地互联技术正从Ku向Ka演进 Evolution From Ku To Ka

随着庞大的需求流量, 迫使空地互联技术从低速低容量向高速高容量快速发展

High demand of the air-ground interconnection motivate the development of the technology from low-speed - low-capacity to high-speed - high-capacity.

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SmartAir数字化服务平台

DIGITALIZED AIRCRAFT SERVICE PLATFORM

# 国内最新动态：主管部门积极支持

## The latest domestic news: Authorities Support



- **2017年10月**，CCAR 121第5次修订，放宽了机上便携式电子设备的管理规定。
- In October 2017, the fifth revision of CCAR 121 relaxed the regulations on the management of portable electronic devices on board.
- **2018年1月18日**，东航、海航率先开放机上使用手机！
- On Jan 18th, 2018, the CEA and HNA took the lead in permitting the usage of mobile phone on the aircraft!
- **2018年6月**，第二届中国机上互联网高峰论坛成功举办，标志着国内机载互联网建设进入全面发展阶段，工信部和民航局有关领导应邀出席。
- In June 2018, the 2nd China Inflight Internet Summit was successfully held. Directors and other representatives of the Ministry of Industry and Information Technology and the Civil Aviation Administration were invited to attend. This represented that the construction of the airborne Internet in China has entered into a comprehensive developing stage.
- **2018年5月-7月**，中航材飞天联合技术公司与青岛航空、东海航空等航司签署了地空互联协议，携手开发前后舱数据。
- From May to July 2018, China Aviation Materials Feitian United Technology Co., Ltd., Qingdao Airlines, East China Sea Airlines and other airlines signed a ground-to-air interconnection agreement to jointly develop the front and rear cabin data.
- **从2017年以来**，中航材分别与汉莎，空客，民航局，航科院，霍尼韦尔等共同探索互联飞机合作。
- Since 2017, CASC has jointly explored the way of cooperation in interconnected aircraft with Lufthansa, Airbus, Civil Aviation Administration, Academy of Aeronautics and Astronautics and Honeywell.
- **近期民航局关于机上互联网的系列会议**，对于机上互联网项目在提升行业的安全管理水平，提升航司飞行品质，提高运行效率，不断降低运行成本，这些方面的意义和作用给与了充分肯定。
- Recently, meetings over onboard Internet held by Civil Aviation Administration have emphasized the far-reaching meaning and positive impacts of developing onboard Internet in improving safety management of the industry, promoting the flight quality of the aircraft, increasing operational efficiency and reducing operating costs.

# SmartAir介绍

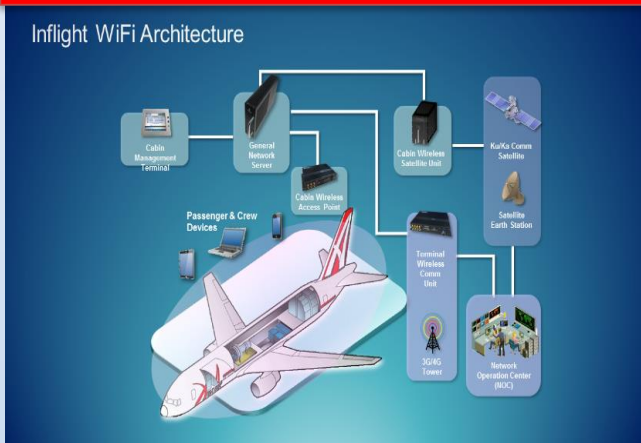
## SmartAir Introduction

### SmartAir

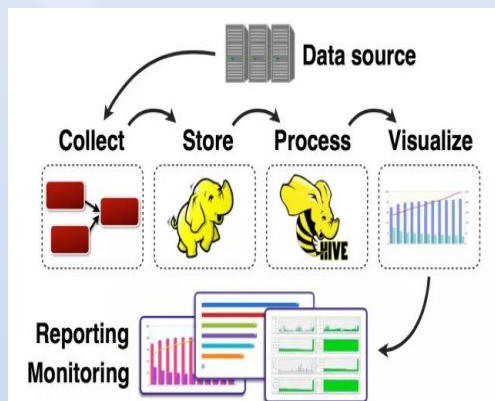
以飞机数据为支撑的共享平台  
Platform based on aircraft data

飞机实时数据共享平台  
Real-time data sharing platform

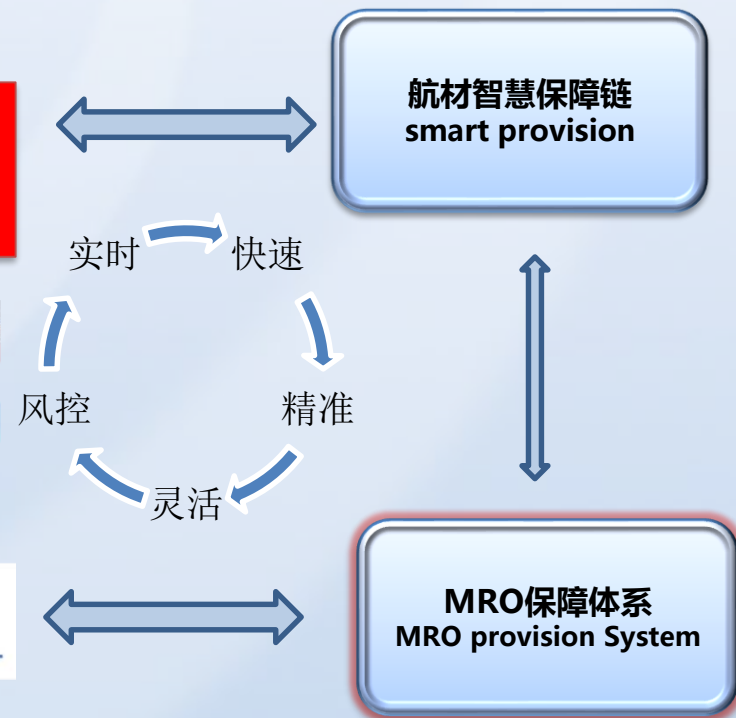
飞机实时数据采集与传输平台  
Data Acquisition and Transmission platform



飞机实时数据处理平台  
Real-Time data processing platform



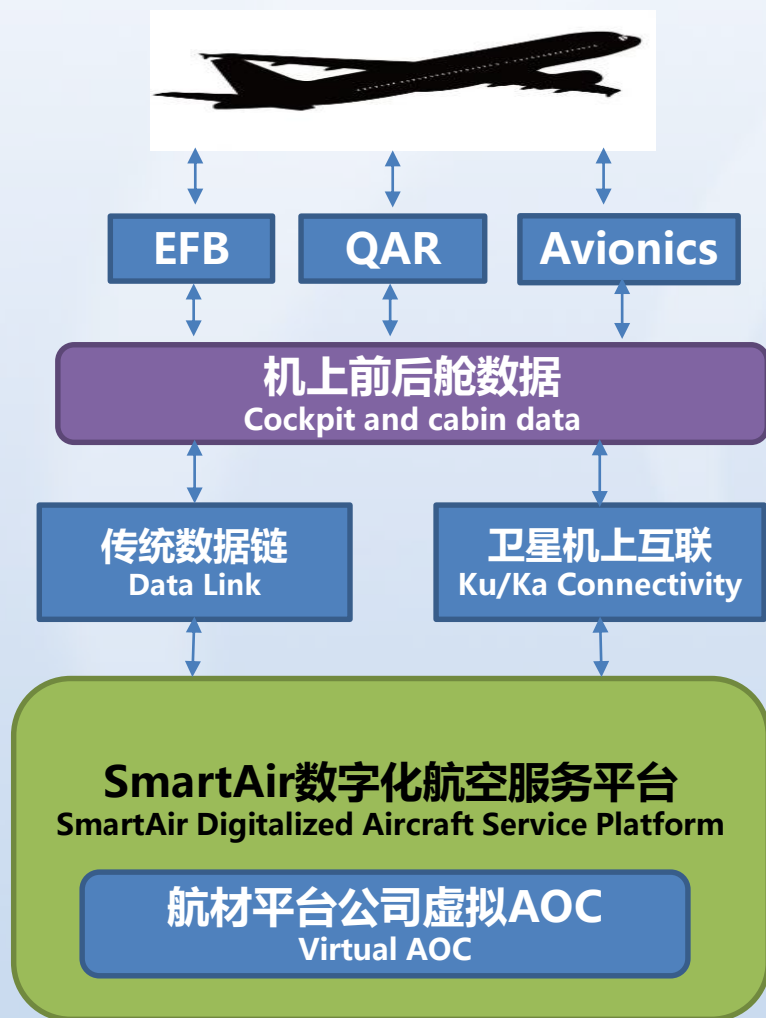
飞机实时数据共享平台  
Real-time data sharing platform



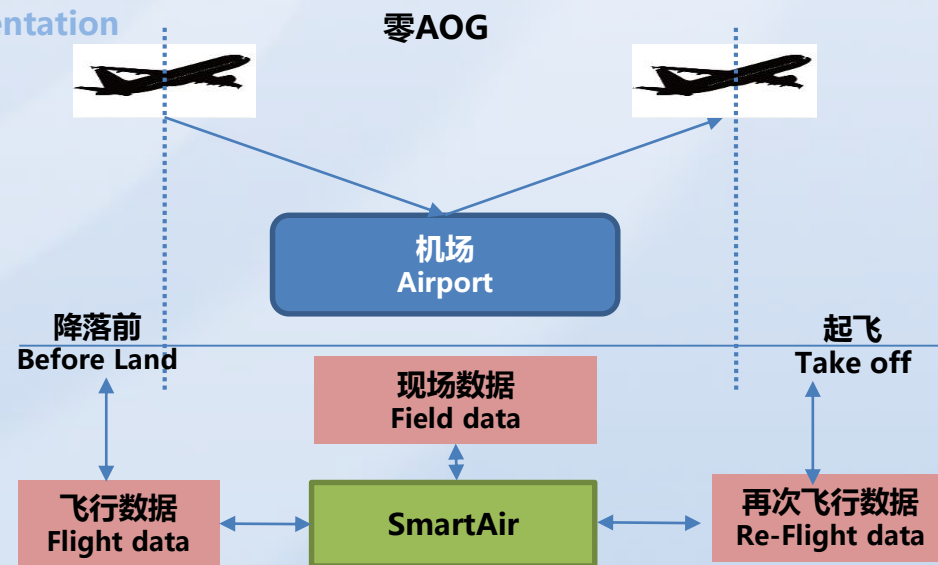


# SmartAir – 平台系统架构

## SmartAir – Platform Architecture



- 飞机实时数据可以实时在民航共享平台上记录并共享  
Flight data record and shared
- 可依靠数据完成对于飞机飞行数据的实时计算，做出智能性的应对措施  
Realtime calculation and dicision based on shared data
- 辅助分析系统进化为基于该平台的虚拟AOC体系  
Auxiliary analysis evolve to virtual AOC
- 实现零航材AOG  
Zero Material AOG implementation



# SmartAir – 场景展望

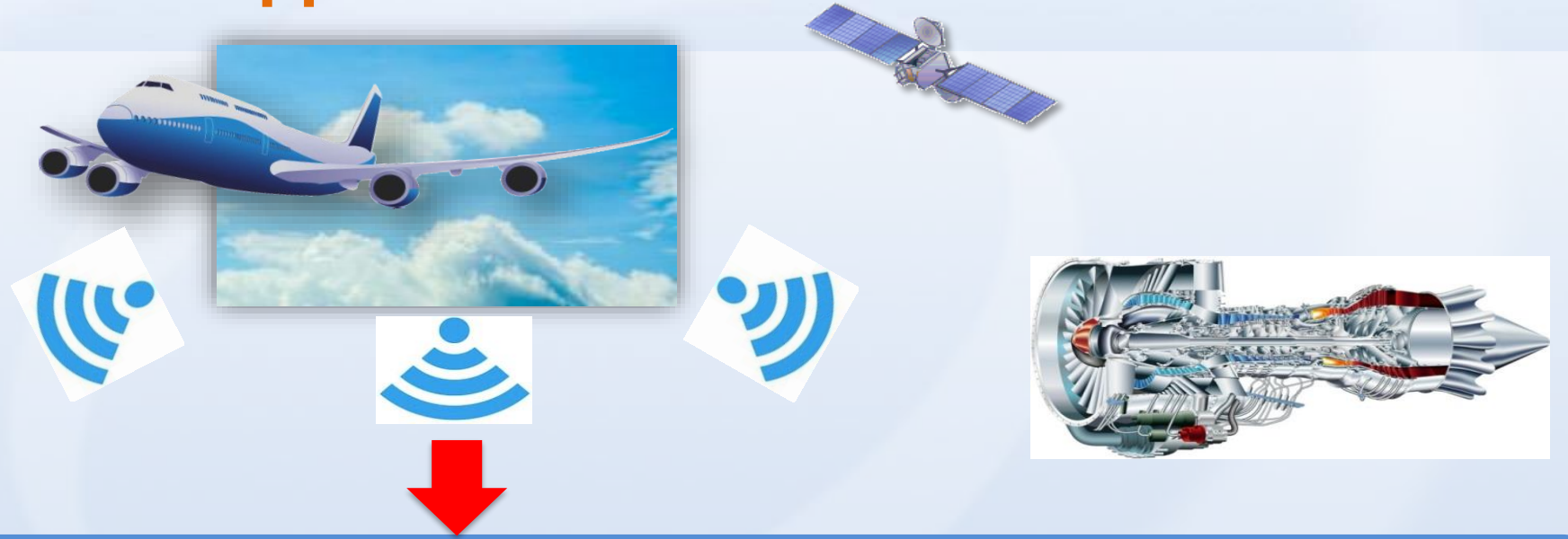
## SmartAir-Scene Prospect



**CASC虚拟运控中心AOC**

# SmartAir – 机务维修航材支持案例

## SmartAir – Maintenance support case



监控航班运行中的全量数据，提升航班监控的全面性和广阔性

Data monitoring of whole flight

监控指标数据的变化和趋势，对后续运行分析和决策更起到数据支撑作用

Monitor data changes and trends analysis, to support prediction and decision-making.

增加机组与地面沟通渠道，在空中通过EFB用图文、音视频等方式实时与地面沟通，提升排障准确性及效率

Increase the channel of communication between the crew and the ground, Cockpit can communicate with ground on EFB thru various ways. Improve

飞机在空中出现故障时，地面机务部门可快速制定维修手段和准备相应航材，节省时间

When aircraft encountering failure, crew on the ground can save time develop scheme and spare for maintenance.

24小时机务地面监控  
24-hour ground monitoring

# 机上互联产品

## In-flight Connectivity Products

飞天联合机上互联产品已获得国内外多款飞机装机许可，目前正在申请国内VSTC和EASA STC适航认证

The products of FTS have been approved by many domestic and foreign aircraft, and are applying for domestic VSTC and EASA STC airworthiness certification at present.



# 机上互联产品案例

## In-flight Entertainment and Connectivity Project Cases



南方航空波音B737NG项目  
China Southern Airlines B737NG project



中东航司A320/B777项目  
A320/B777 Project in Middle East



First Air (加拿大第一航空) B737 项目  
First Air (Canadian) B737 project



缅甸航空空客A319/A320 项目  
MAI A319/A320 project



青岛航空A320项目  
Qingdao Airline A320 project



东海航空737NG项目  
Donghai Airline 737ng project





**感谢关注**  
**Thank You!**