



# CIVIL UAS OPERATION MANAGEMENT SYSTEM IN CHINA

# 无人机发展 UAV's Development in China Today

- The application of civil unmanned aircraft vehicle (UAV) is increasingly extensive
- China produced 2.9 million UAVs in 2017
- China is a worldwide research and development center, production and distribution base of civil UAV



## 无人机管理现状 Management Problems of UAV in China

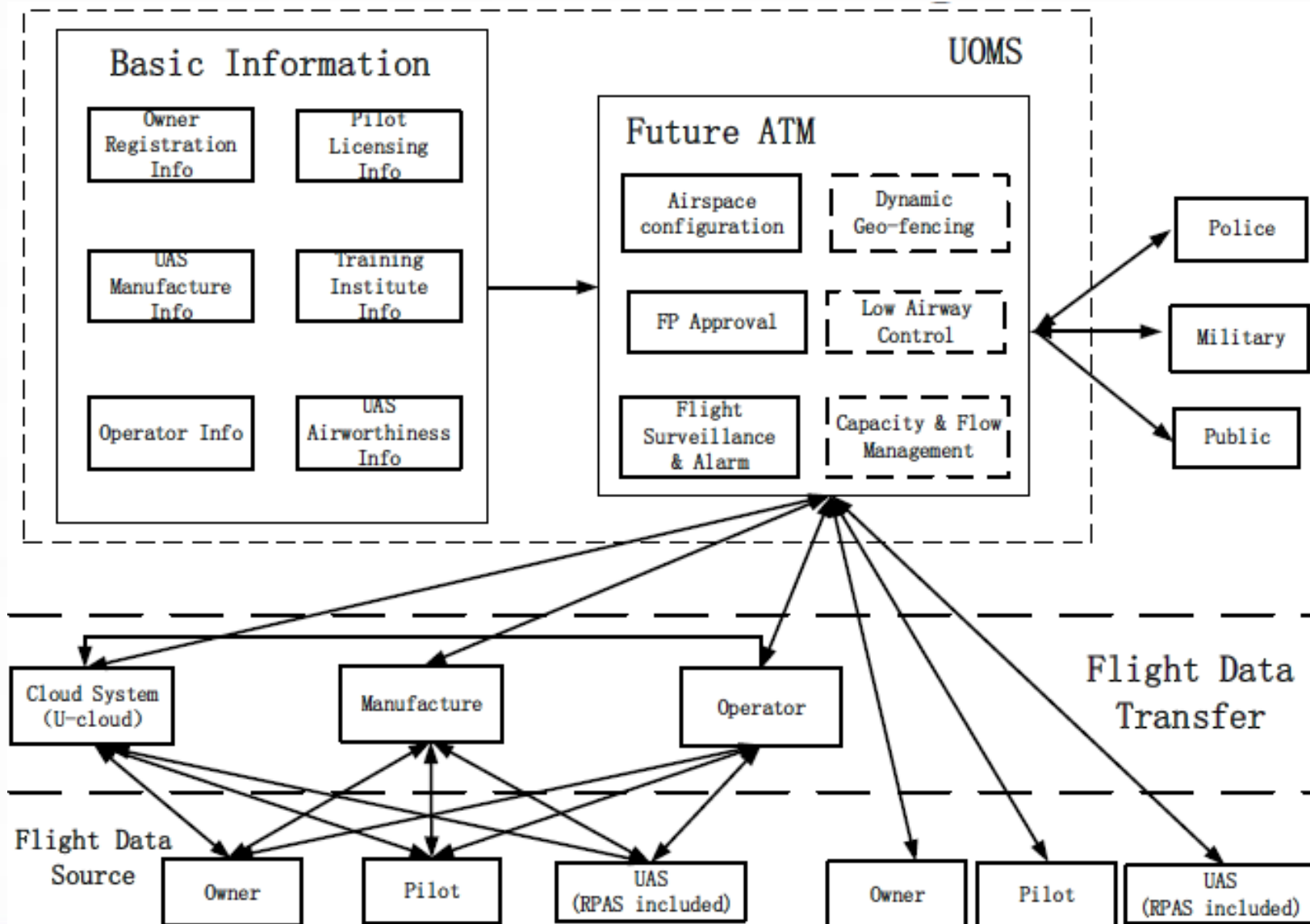


There are **too many management departments and procedures**, and the management and legislation of each procedure needs to be connected and communicated in an orderly way.

Existing industry **regulations are lagging** and cannot provide direct and effective support, resulting in an untenable phenomenon

There is a **lack of scientific and unified standards and norms** in production, information collection and operation management

# 中国民用无人机综合管理平台 UOMS





- 实现无人驾驶航空器的行业监管，完善管理机制。
- Realize the supervision of UAV industry and improve the management mechanism.
- 主要面向对象：无人驾驶航空器的拥有者、驾驶员、生产制造商、运营人以及云服务商。
- Mainly object-oriented: owners, pilots, manufacturers, operators and cloud service providers of UAV.

# 行政管理平台 Administrative management platform



生产制造商和研发企业 信息备案、信息登记、适航审定

Manufacturers and R&D Companies: information filing, information registration, airworthiness certification

拥有者 实名登记

UAV Owner: real name registration

驾驶员 驾驶执照申请和管理

UAV Flight Operator: application and management of flight license

运营人 经营许可和运行许可的审批和发放

Operators: Approval and issuance of business licenses and operating licenses

云服务商 云商资质认证

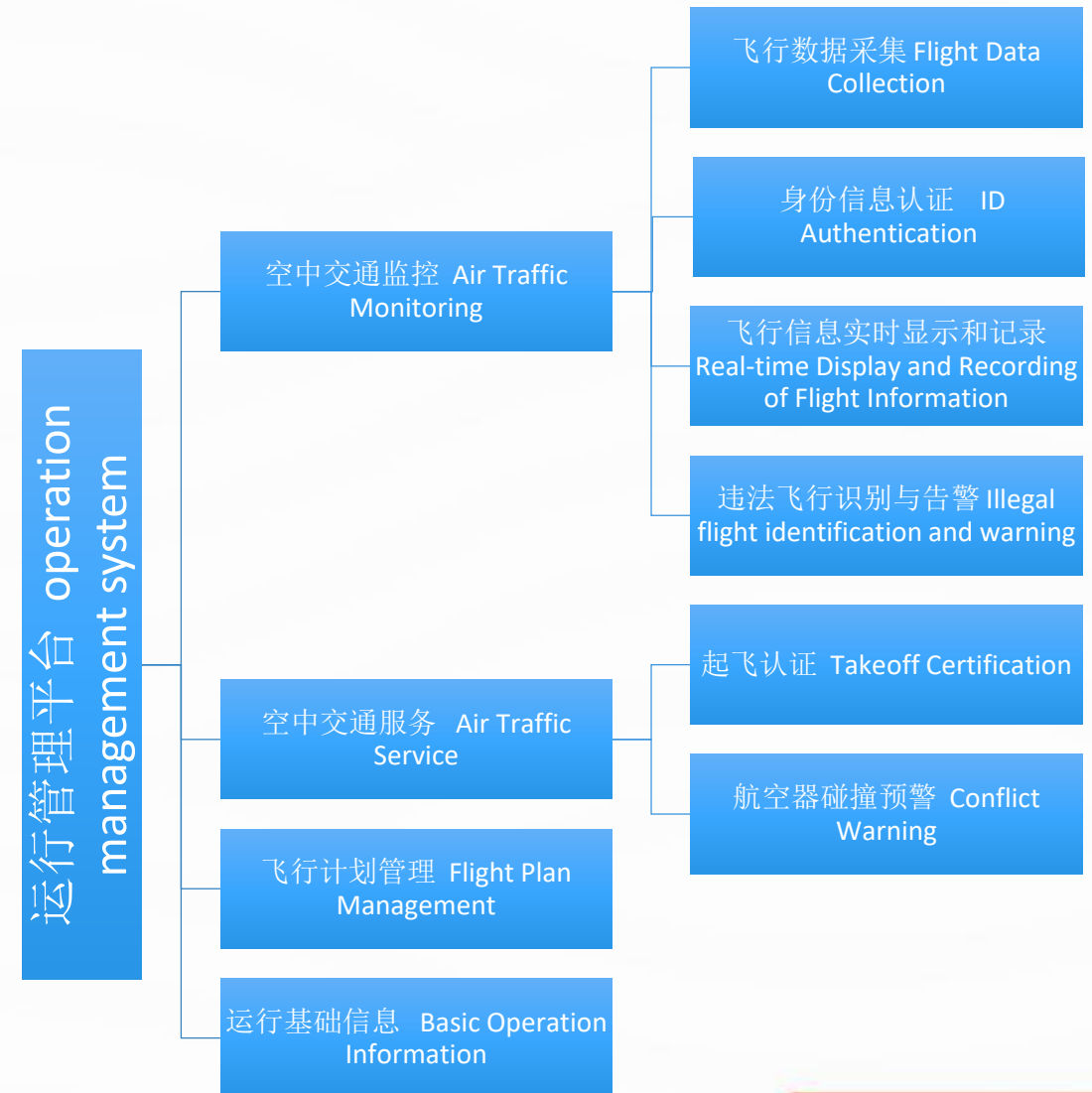
Cloud Service Provider: Certification of cloud business qualification

# 运行管理平台 Operation management platform



运行管理平台主要针对民用无人驾驶航空器的空中交通运行管理，主要包括空中交通监控、空中交通服务、基于运行安全风险的飞行计划管理和运行基础信息等功能。

The operation management platform is mainly for air traffic operation management of civil unmanned aerial vehicles, including air traffic monitoring, air traffic services, flight plan management based on operational safety risks, and basic operation information.



# 运行管理平台 Operation management platform



## 飞行数据采集 Flight data collection

**飞行数据内容** 无人驾驶航空器的UAS码、飞行位置点的经纬度坐标、当前时刻、飞行真高、飞行速度、航向、定位精度等信息。

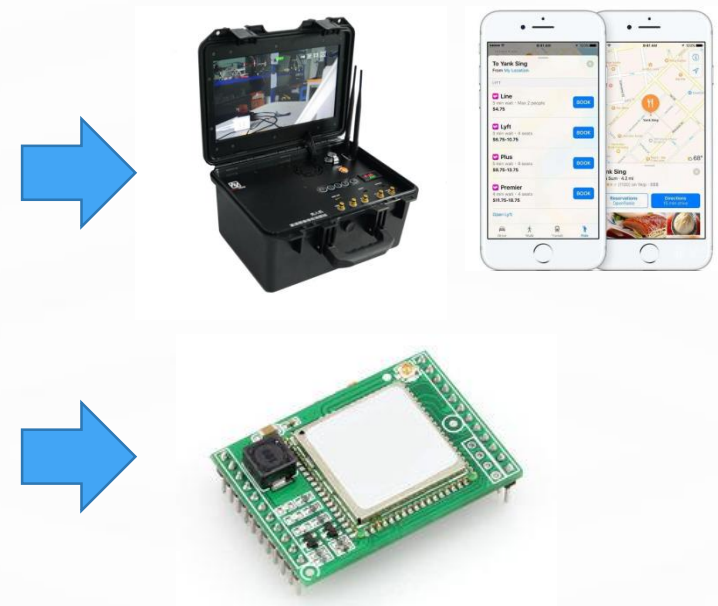
**Content of flight data** UAS code, the latitude and longitude coordinates of the flight position point, current time, flight altitude, flight speed, heading, and the positioning accuracy.

**微型、轻型无人驾驶航空器** 通过飞行控制的地面终端（手机或地面站）联网向系统后台实时传输飞行数据。

**Miniature and light UAVs** Transmit flight data in real time from a flight-controlled ground terminal (mobile phone or ground station) to the back-end of the system

**小型、中型和大型无人驾驶航空器** 需要在航空器内部加装数据传输模块，通过该模块直接向系统后台传送飞行数据。

**Small, medium and large UAVs** Integrate data transmission module inside the aircraft and transmit flight data to the backend through this module.



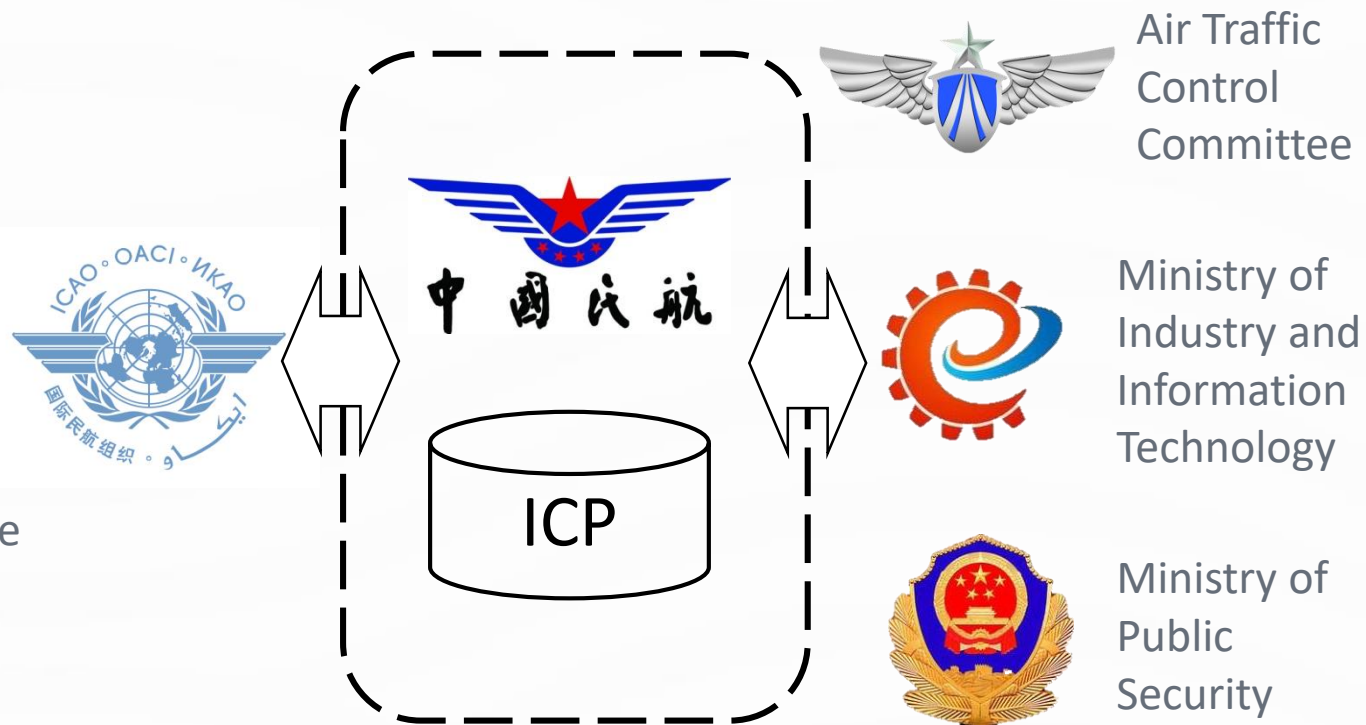


# 政府间协作平台 (Intergovernmental Collaboration Platform)



政府间协作平台主要由政府业务协作管理与政府信息共享与查询服务两部分组成，针对相关行业管理的国家部委提供全国唯一的综合管理信息接口以及行业信息查询服务。

The Intergovernmental Collaboration Platform is mainly composed of government business collaboration management and government information sharing & inquiry services. It provides the unique nation's comprehensive management information interface and industry information inquiry service for national ministries and commissions related to specific industry management.





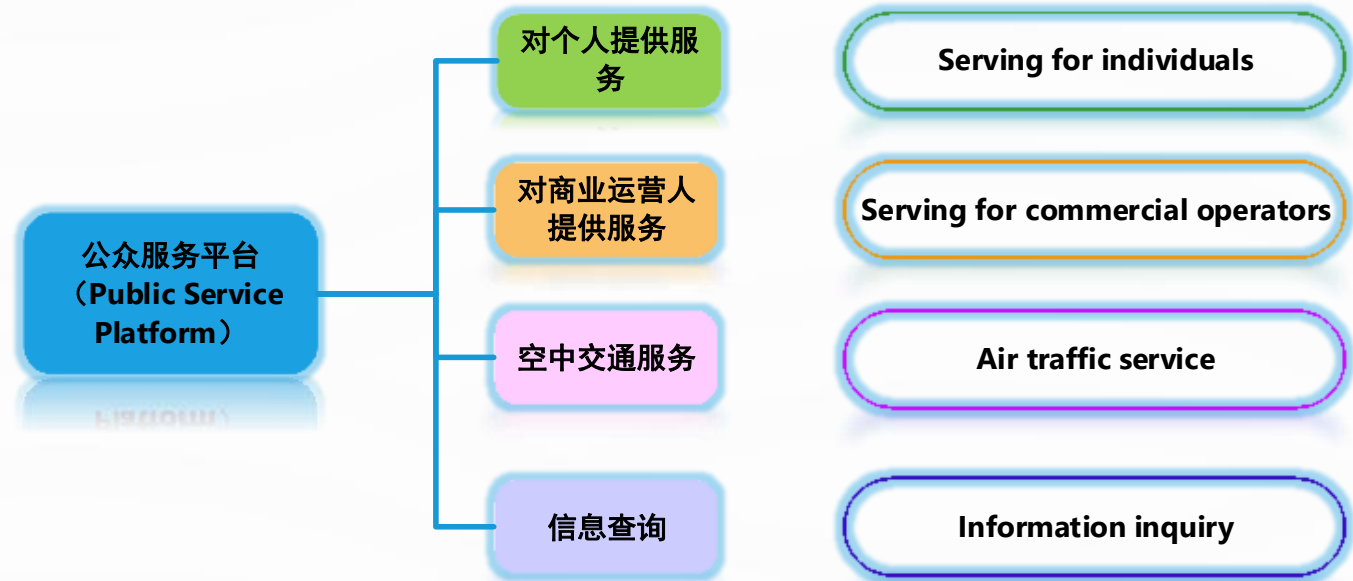
## 公众服务平台 (Public Service Platform)

公众服务平台主要包括了资质验证和信息查询的功能:

- ◆ 资质验证的功能给公众提供无人驾驶航空器驾驶员及培训机构资质的查询。
- ◆ 信息查询的功能为给公众提供服务信息的查询, 包括驾驶员信用记录、运营商信用记录、无人机二维码、无人机相关法律法规及行业公告等信息的查询和浏览功能。

Public Service Platform is composed of qualification verification and information inquiry:

- ◆ Qualification verification offers the qualifications inquiry of UAV pilots and training institution.
- ◆ information inquiry is used for sharing public service information including pilot & operator credit record, UAV QR code, related laws and policy announcement.



# 配套标准和规范 Supporting Standards and Specifications



- ◆ 信息共享交换规范 Information exchange specification
- ◆ 信息资源采集处理规范 Information resource collection and processing specification
- 1. **空域管理 airspace management**
  - ① 空域信息发布规范 Airspace information release specification
  - ② 空域网格划分规范 Airspace meshing specification
  - ③ 空域信息的服务器数据获取接口及规范 Server data interface and specification
- 2. **飞行计划 Flight Plan**
  - ① 飞行计划信息规范 Flight plan information specification
  - ② 飞行计划申报指南 Flight plan declaration guidance
- 3. **飞行监视 Flight Monitoring**
  - ① 无人机飞行监视系统通用要求 General requirements for UAV flight monitoring systems
  - ② 无人机无线信标系统技术规范 UAV wireless beacon system technical specification
  - ③ 无人机飞行数据记录系统通用要求 General requirements for UAV flight data recording systems
  - ④ 无人机飞行数据上报格式和规范 UAV flight data reporting format and specification
- 4. **飞行服务 Flight Service**
  - ① 无人机飞行服务平台通用要求 General requirements for UAV flight service platforms
  - ② 无人机导航地图通用格式 General format of UAV navigation map

# UOM OF CHINA Development Plan



## Phase 1: Basic Support Construction (2018-2020)

- The national unified comprehensive platform for the operation and management of civil UAV
- realize the comprehensive information acquisition and integration of civil UAV

## Phase 2: Specification and integration (2021-2025)

- Industry management, air transport control, government collaboration and social services
- Industry and national UAV management standards, norms and legal system

## Phase 3: Inosculation and Development (2025-2030)

- National UAV safety operation command center
- The whole life cycle, all-weather condition, all-directional and all-visual supervision of low-altitude aircraft is realized, and a perfect management service system is established
- The integrated operation of general aviation aircraft and UAV



Thanks !