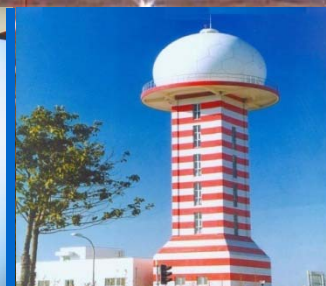
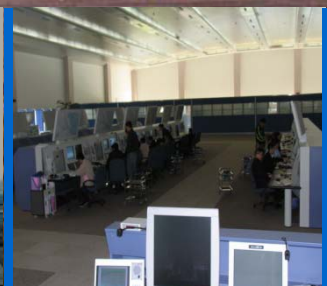




Introduction of ATMB

ATMB-Air Traffic Management Bureau, CAAC





Index

- ATM System of China
- ATC Support systems



ATM System of China



□ Structure of ATM System

- Civil Aviation Administration of China-CAAC is Chinese civil authority, which is on behalf of the Ministry of Transportation to manage civil aviation.
- Air Traffic Management Administration is directly affiliated to CAAC
- Air Traffic Management Bureau-ATMB is responsible for ATM operation.



Ministry of Transportation
交通运输部



CAAC
中国民用航空局



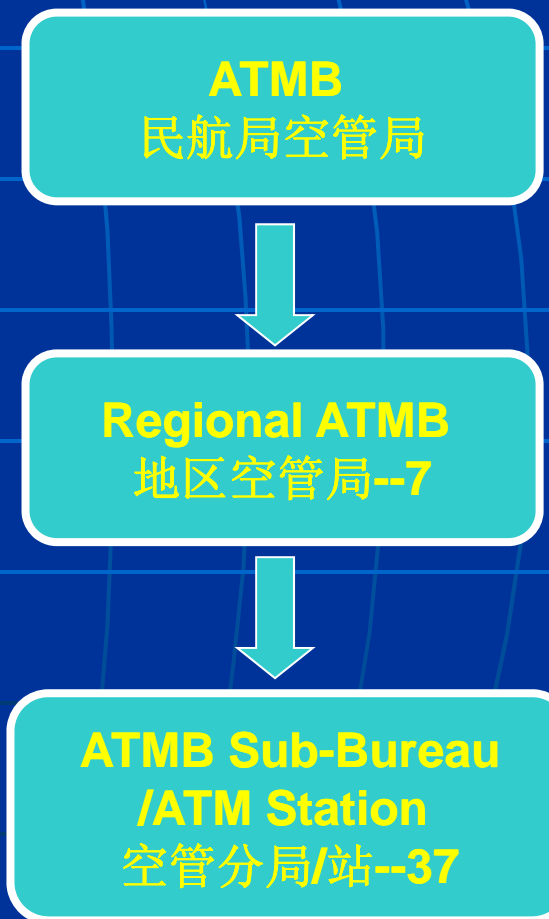
**Air Traffic Management
Department**
空管行业管理办公室

**Air Traffic Management
Bureau**
空中交通管理局



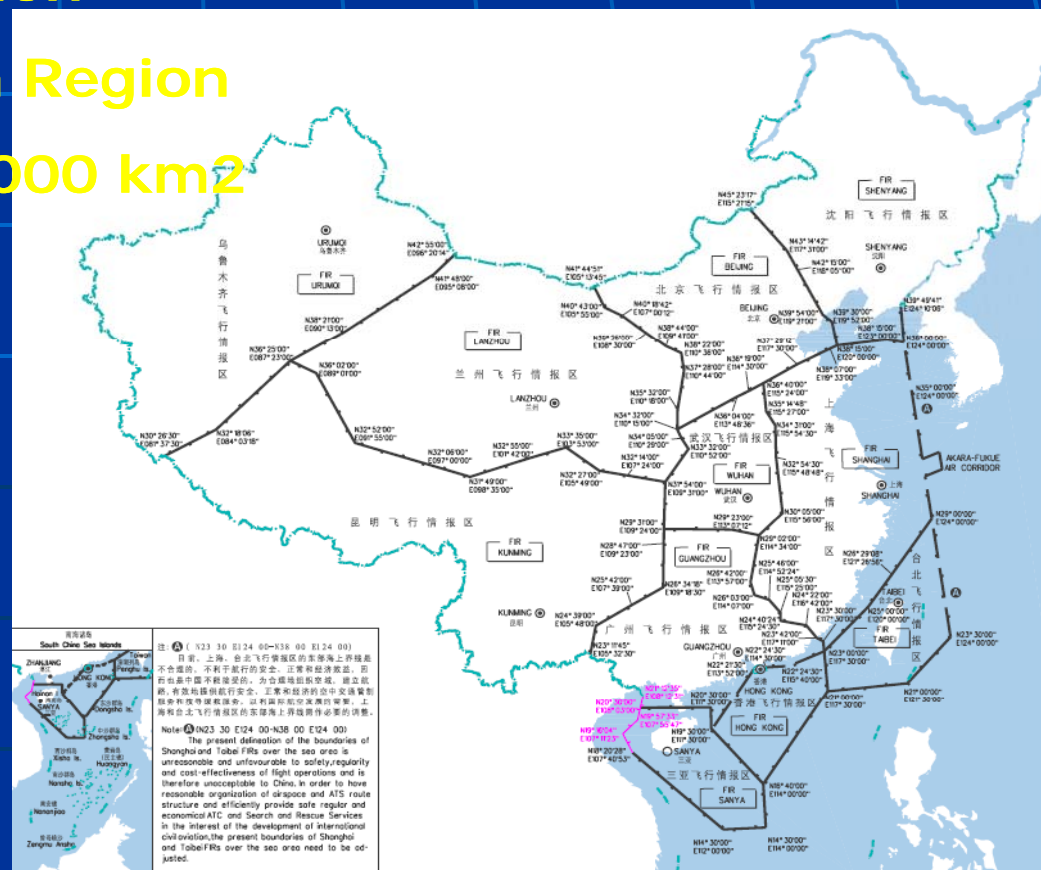
3 levels of China ATM system:

- First level:
ATMB HQ
- Second level:
7 Regional ATMB
- Third level:
37 ATM Sub-Bureau/Station





■ Total coverage 10,810,000 km²





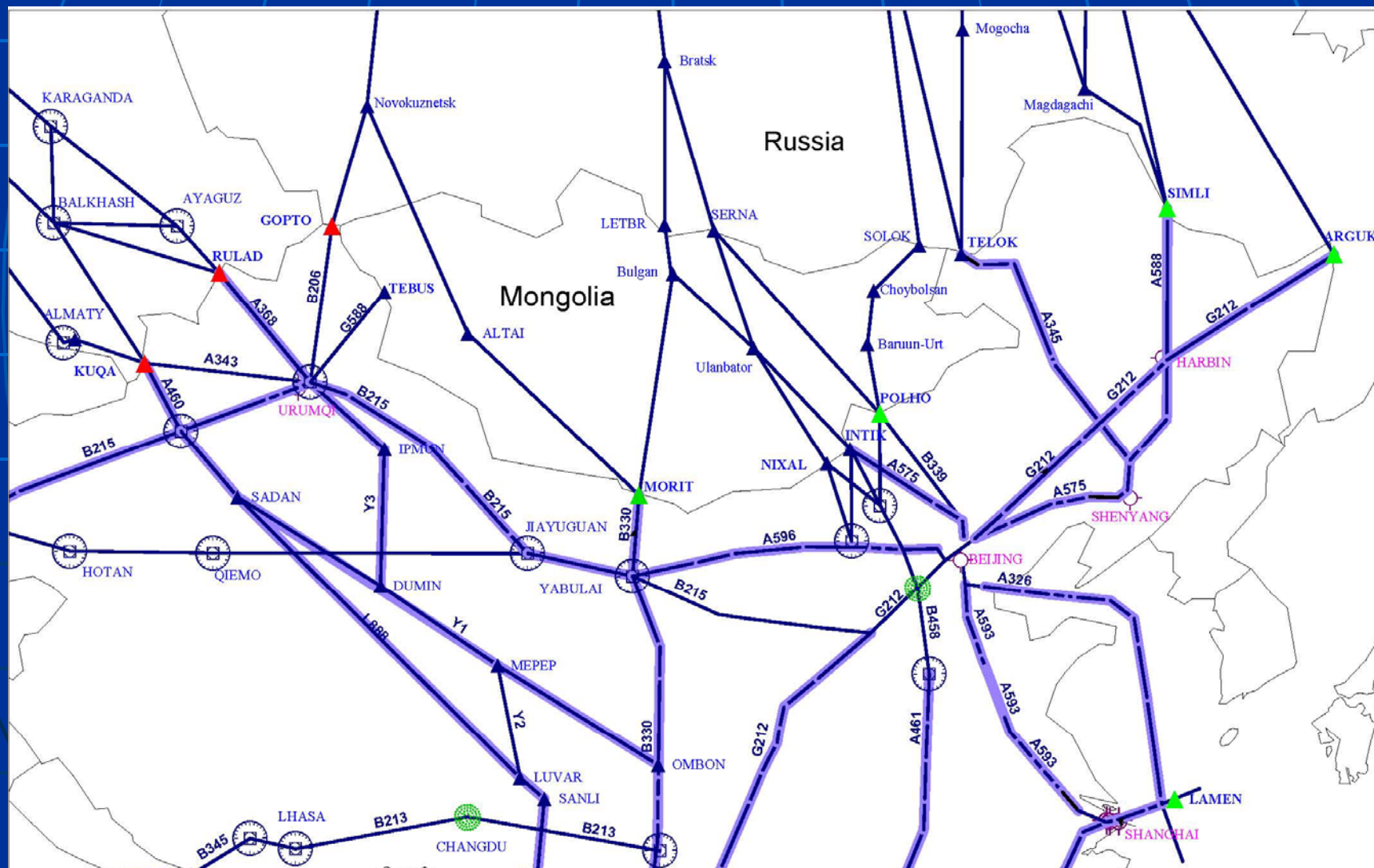
□ Airspace Structure

- 19 upper control areas
- 28 medium/low level control areas
- Newly built area control center will gradually take over adjacent high level control areas.
- 34 Approach Control Areas
- 1 Terminal Control Area (Zhuhai)





■ Flexible Use of Entry/Exit Points





□ Flexible Use of Entry/Exit Points

■ Polar route operations: SIMLI, ARGUK, POLHO, MORIT and SADLI (AKARA – Fukue corridor) since 2003 and extended the range from 2007.7

■ European – Southeast Asia operations: MORIT, SARIN, RULAD, GOPTO since 2010.10

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灵活选择进出境点飞行管理办法 The Management Rules Of Operations For The Flexible Use Of The Specified Entry/Exit Points

1. 为保证灵活选择进出境点飞行的安全与顺畅，制定本办法。

2. 本办法适用于航空运输企业灵活选择下列进出境点以及相衔接航线进行的飞行活动。

沿极地航线及其备份航线实施运输飞行，可以灵活选择使用中俄进出境点 SIMLI、ARGUK 和中蒙进出境点 POLHO、MORIT 和 AKARA-福江空中走廊 SADLI 以及我国飞行情报区内相衔接的航线和航线。

欧洲方向往返我国内地、香港、澳门及以远方向的定期航班可以灵活选择使用 MORIT、SARIN、RULAD、GOPTO 四个进出境点以及我国飞行情报区内相衔接的航线和航线。

3. 灵活选择进出境点飞行的航空运输企业，应当按照有关规定在执行前提出预先飞行计划申请。预先飞行计划申请应当注明为灵活飞行，并提出所选择的进出境点和航线、航线。

沿极地航线及其备份航线实施加班和不定期航班的预先飞行计划申请应当明确一个主用进出境点和不多于两个备用进出境点。

Article 1. These rules are developed with the intention to enhance the efficiency and safety of flexible use of the specified entry/exit points operations.

Article 2. These rules are applied to the air transport operations, in which case the operator has a flexible choice for the specified entry/exit points listed below and the relative connecting routes within China FIRs.

Air transport operation along polar routes and its alternative route has a flexible choice for entry/exit points among SIMLI (between China and Russia), ARGUK (between China and Russia), POLHO (between China and Mongolia), MORIT (between China and Mongolia) and SADLI (AKARA-Fukue corridor), as well as the connecting routes within China FIRs.

Scheduled flight between Europe and China mainland, Hong Kong, Macao or beyond them has a flexible choice for entry/exit points among MORIT (between China and Mongolia), SARIN (China and Kazakhstan), RULAD (China and Kazakhstan), GOPTO (between China and Russia), as well as the connecting routes within China FIRs.

Article 3. Air transport operator who intends to conduct flight operations by flexibly choosing the specified entry/exit points is requested to submit initial flight plan application prior to implementation according to relevant regulations. The application shall indicate "flexible operation", the entry/exit points and the routes to be used.

For air transport operation along polar routes and its alternative route, the initial flight plan application of additional flight or a non-scheduled flight shall indicate one primary entry/exit point



□ PBN Implementation Progress

■ En-route

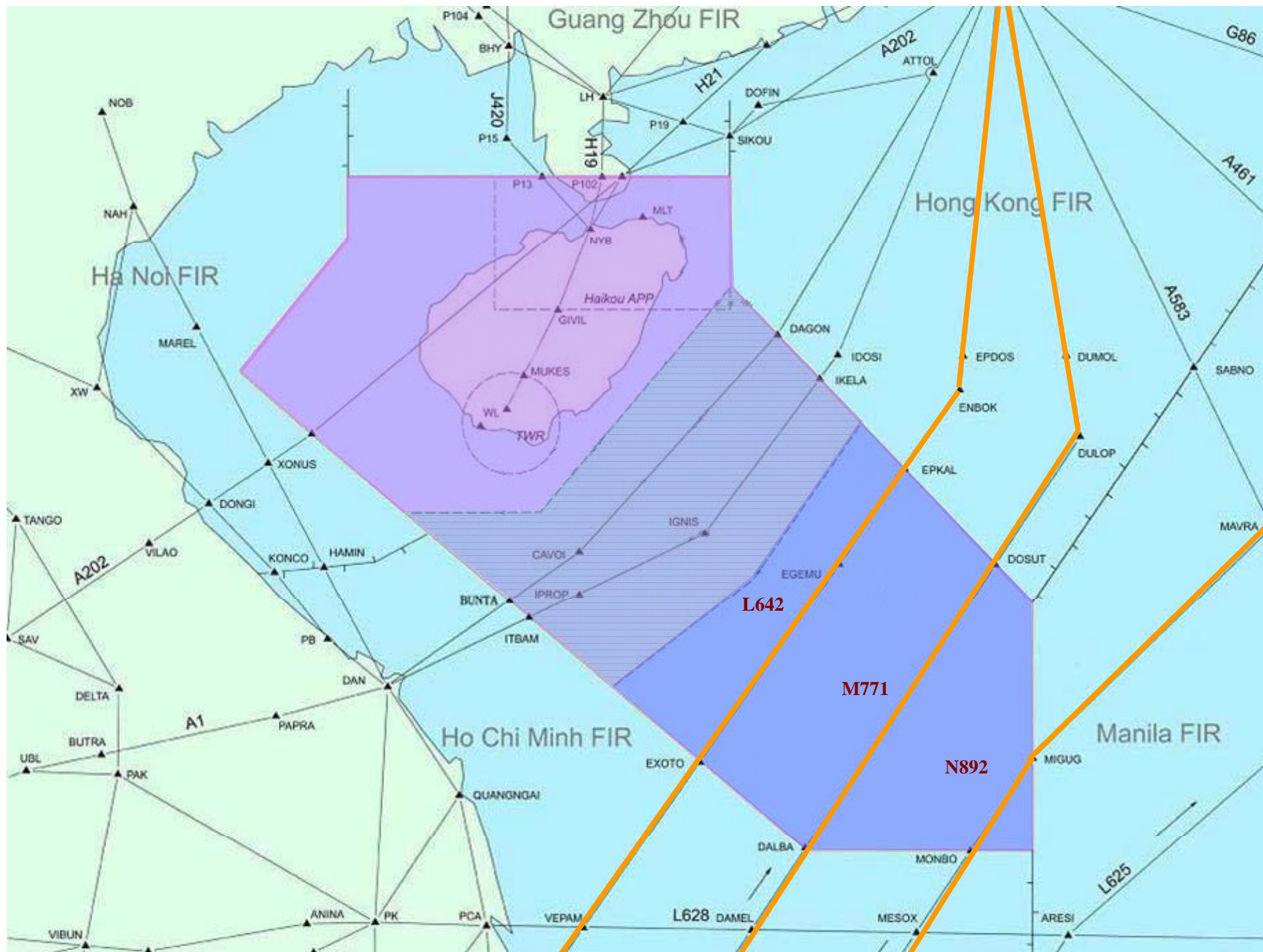
- RNP10 in Sanya FIR (50x50)
- RNP4 in Western of China

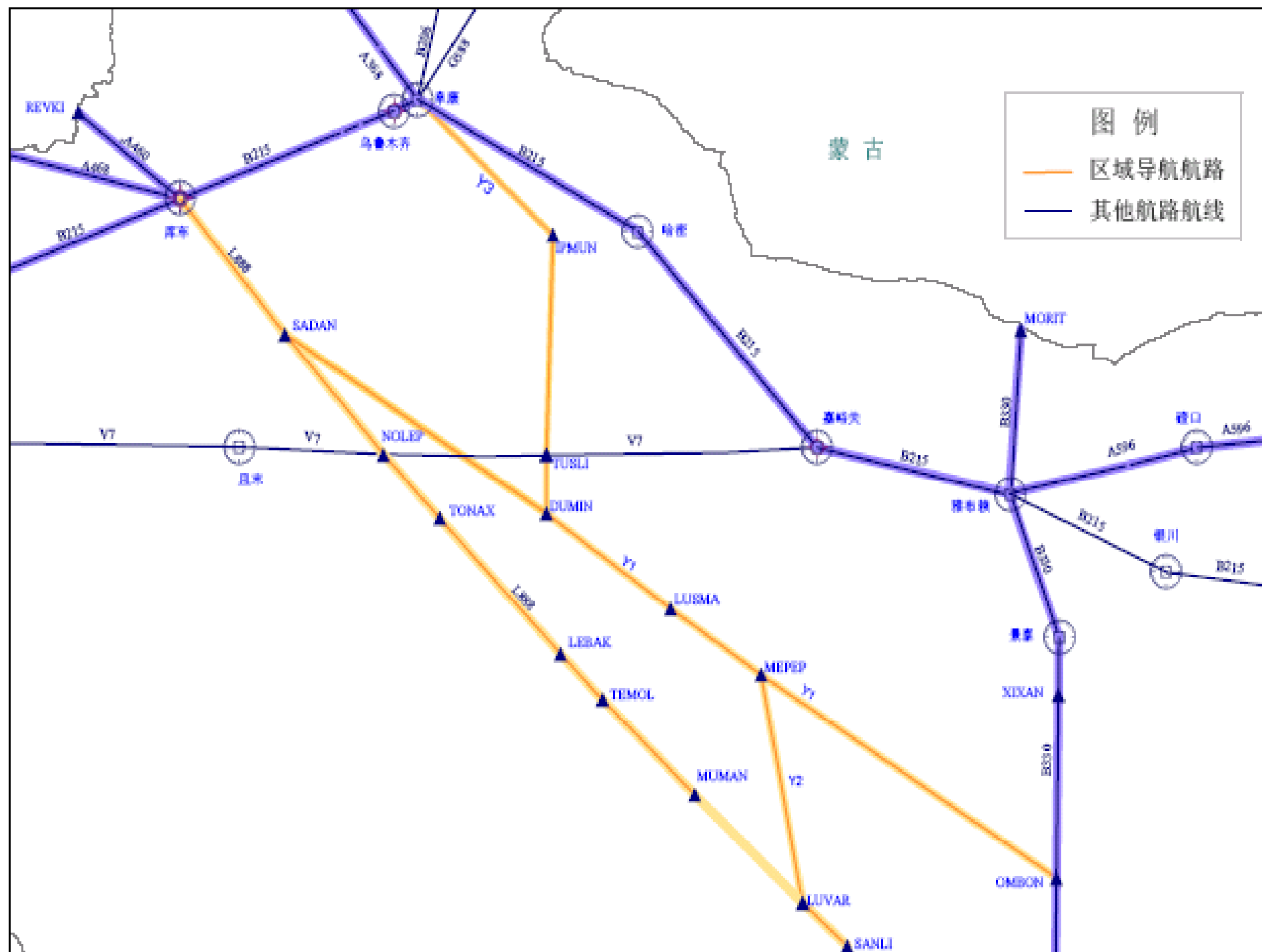
■ Terminal

- RNAV1 in Beijing, Shanghai, Guangzhou, Tianjin, and Urumqi TMA

■ Approach

- RNP AR in Lhasa, Linzhi, Jiuzhai, Lijiang, Huangshan, Yanji, Bangda Airports.
- RNP APCH in Guyuan, Yichun, Sanya







标准仪表进场图

B757-200 试飞专用

BOEING NAVERUS

机场标高11691' / 3569.5M TWR 130.0

拉萨 / 贡嘎机场 ZULS

RNP RNAV 3 RWY 09

①

RNP/RNAV	RNP 3
DA/D	12614' (3897') 3842M (12598)
D	5000M

2300M/7360'

MSA

复飞程序:
爬升至2300', 沿复飞航路爬升3000加入等待。
离场程序: 在收梯前爬升至1000'。如不能以2300'飞越LS300, 通知ATC并沿RNP RNP 3R离场复飞航路爬升。

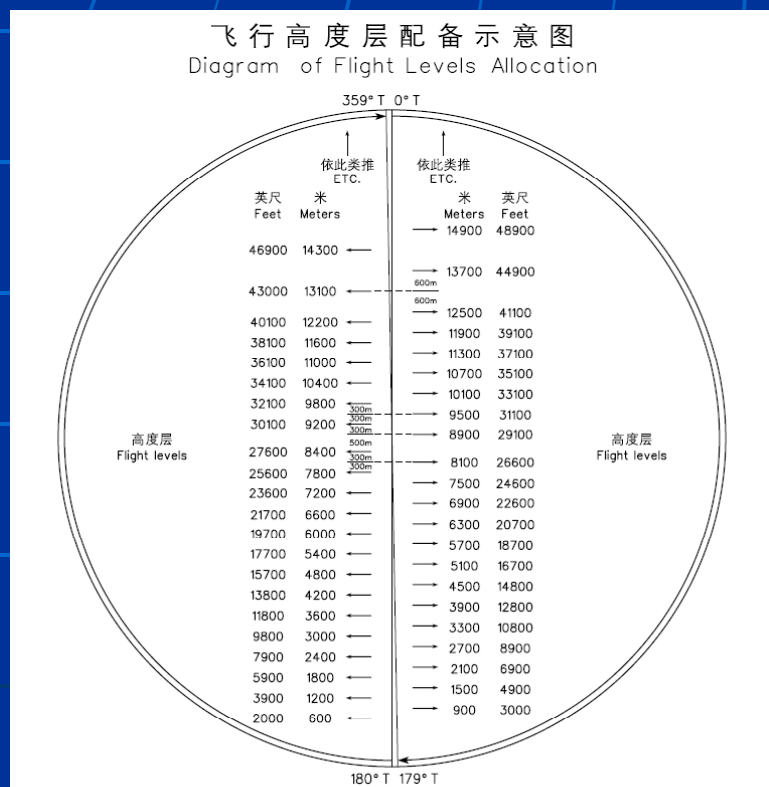
设备要求:
RNP3
FMS/CDI
GPS
飞行指引仪显示 (2)
R/P 至少 1800' RNAV (2)
无线电高度表 (2)
DSC 电子防撞模式 (2)
RAIS/BSI模式 (2)

进近程序:
1. 确认RNP/CDI提供所需RNP。
2. 高度修正不准在1AP点以内进行。
3. 机场高度低于零干/湿时不予允许进近。
4. 进近时不允许使用进近速度表误差。
5. 最大1度下滑角。
6. 最大垂直偏差, 在下滑道下15'。

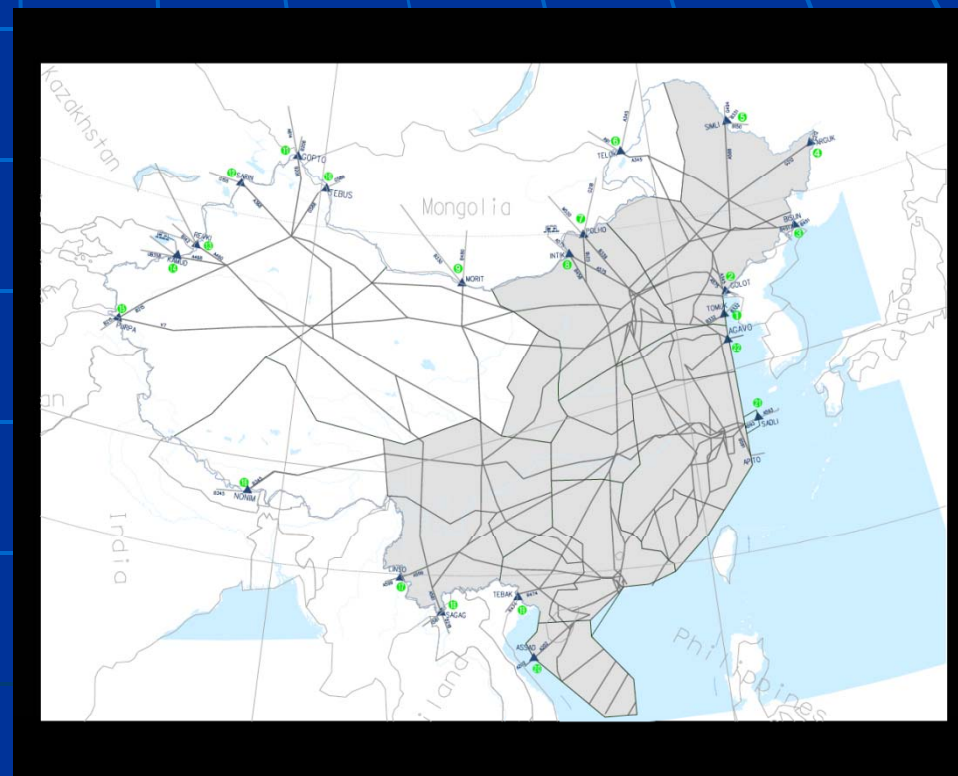
RNP/CDI检查项目 (下降/进近):
- 垂直偏差为RNP 2
- FMS/CDI - 设置与航路确认
- 限制LDA 100/200 (RNAV DATA 页面)
- 100/200 RNP 1 (RNAV DATA 页面)
- RNP 垂直误差
● 过此点之前必须显示RNP/CDI 误差。



■ China RVSM (Above 8400M)



China RVSM FLAS Diagram
(ICAO Standards)



Transition procedures



□ Traffic Flow Statistics

ATC Performance in 2010:

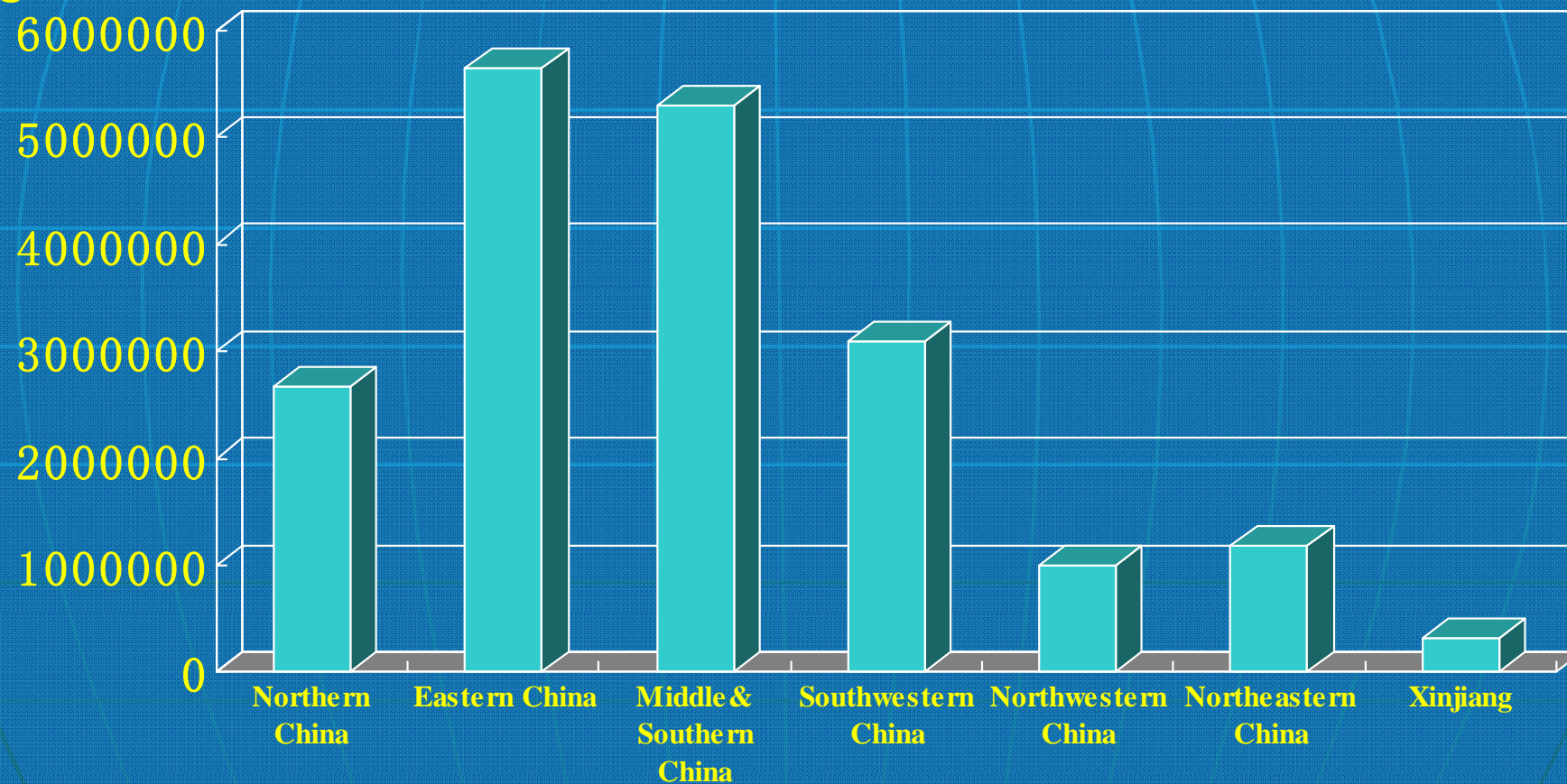
- 19,189,409 flights operated
- 11.59% increase than 2009





■ The traffic flow statistics by region:

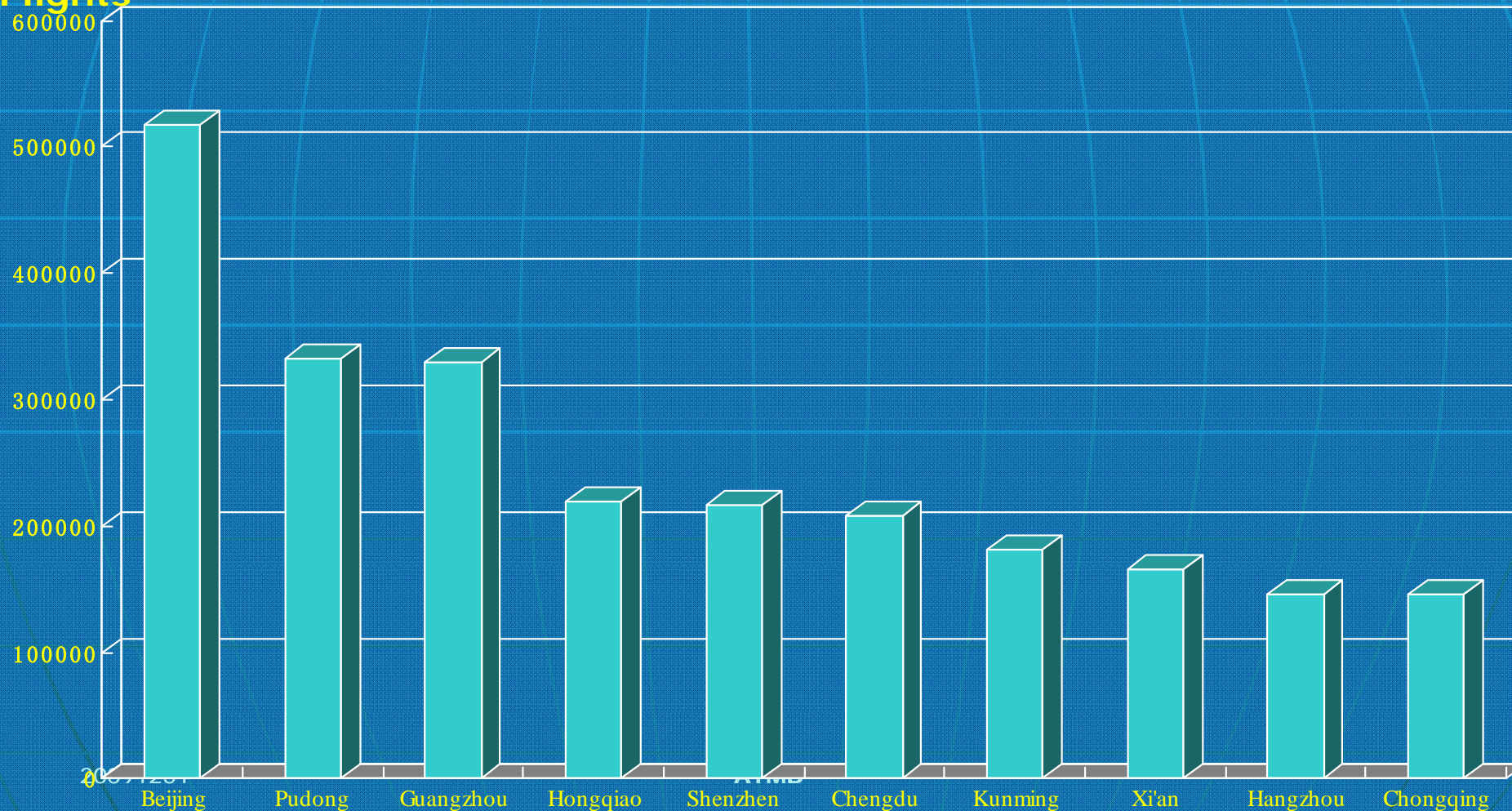
Flights





■ The top 10 busiest airports by traffic:

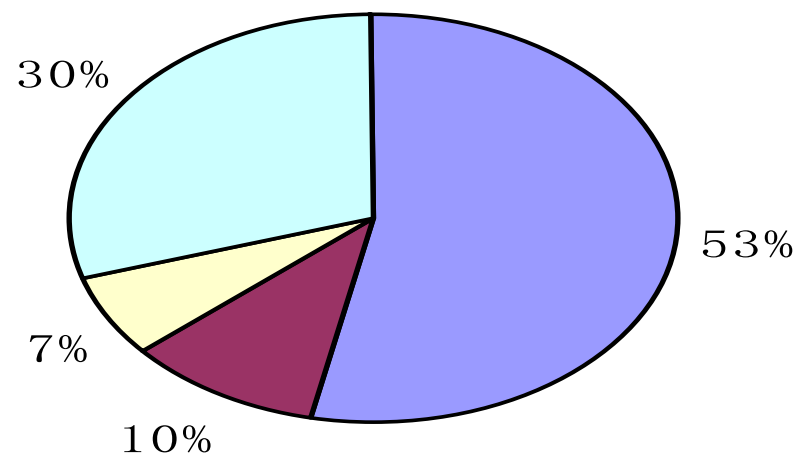
Flights





■ Personnel Composition

- CNS service staff 12253
- MET service staff 2393
- AIS service staff 1520
- ATC staff 6928





ATC Support Systems



■ G/G Communication





■ G/A communication system

■ VHF voice communication

165 VHF sharing-systems and 182
VHF single-systems

■ HF communication

More than 30 HF systems

■ Voice exchange system

More than 68 voice systems

■ Remote ground station (VHF data-link)

More than 91 RGS stations



■ G/A communication system





■ The constitution of ATC navigation system

➤ VOR/DME

More than 233 sets at airport terminal areas and along air-routes

➤ ILS

209 sets at airports

43 major airports equipped with ILS at each end of runway.

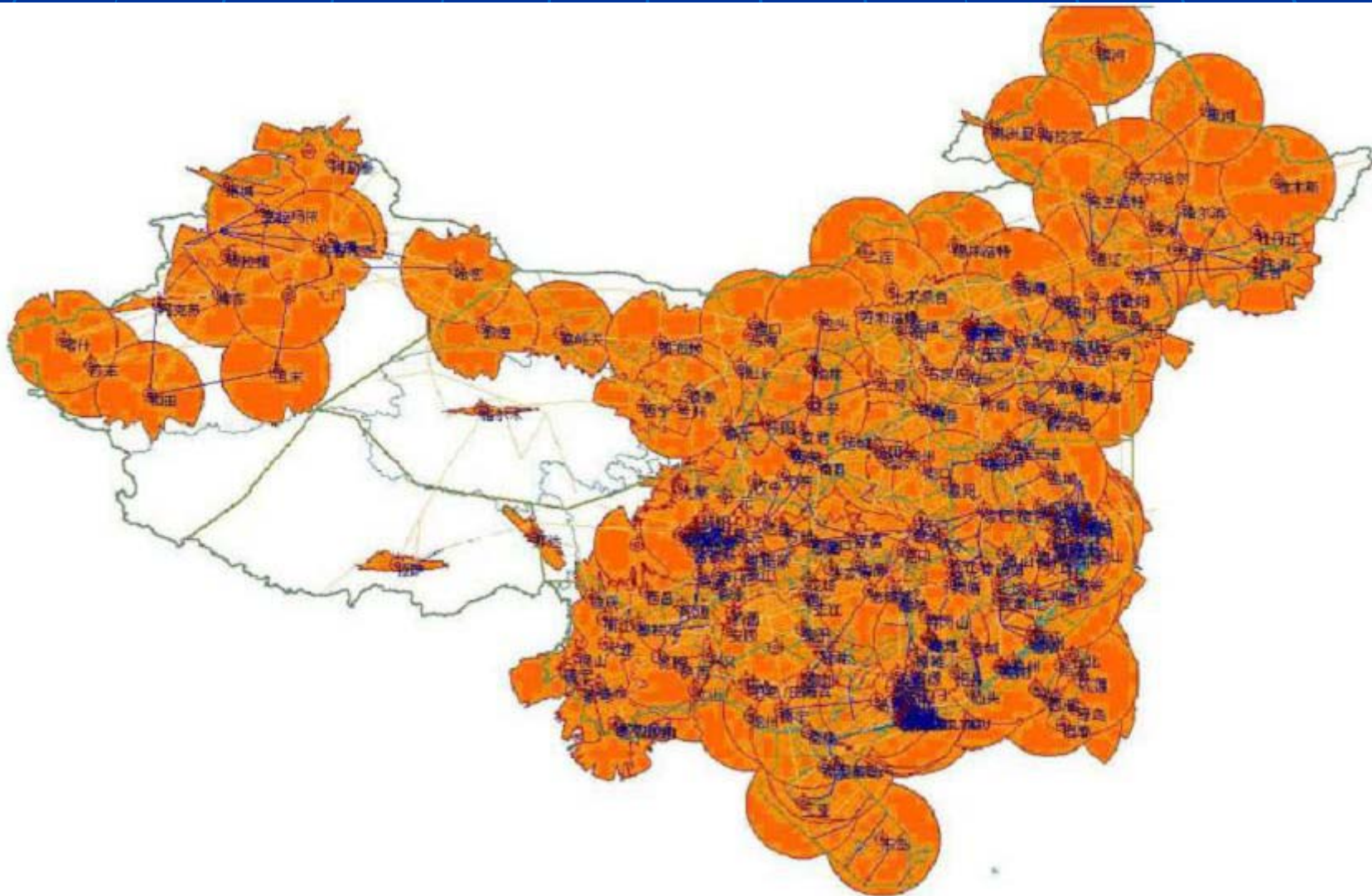
➤ NDB

More than 446 sets at airports and along air-routes.





■ Navigation system





■ The constitution of ATC surveillance system

Primary Surveillance Radar (PSR)

32 sets PSR

Secondary Surveillance Radar (SSR)

90 sets SSR at airports and along Air-routes by the end of 2008

Surface Monitor Radar

In Major Airport like Beijing, ShangHai, GuangZhou;

5 Mobile SSR add 2 new mobile radar up to 8 radars

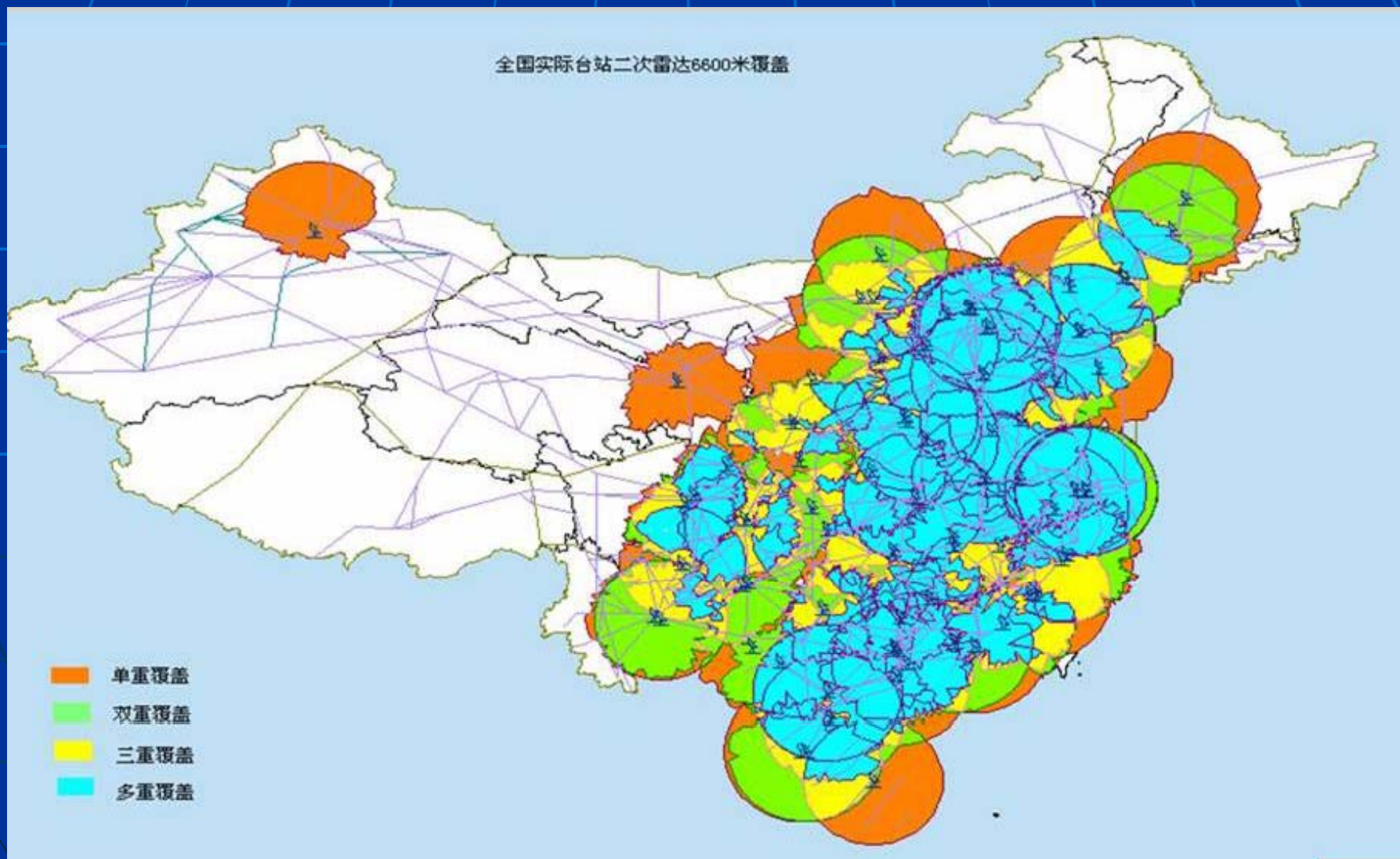
Others:

More than 79 ATC automation systems

More than 50 control tower automation systems



■ SSR Coverage on 6600m





CAAC



中国民用航空总局
空中交通管理局
Air Traffic Management Bureau, CAAC

Thanks!

