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ASSEMBLY — 40TH SESSION

TECHNICAL COMMISSION

Agenda Item 30: Other issues to be considered by the Technical Commission

CONSTRUCTION OF FOUR CHARACTERISTICS AIRPORT IN CHINA

(Presented by China)

EXECUTIVE SUMMARY

The total amount of civil aviation transport in China has ranked the second in the world, and it is still developing at a high speed. Under such circumstances, how to ensure the target of safety, environmental protection, efficiency and benefit achieved successfully is the biggest challenge we face. Therefore, the Civil Aviation Administration of China proposes to construct “four characteristics airport” with "safe, green, smart and humanistic" as the core, so as to promote the development patterns of China's airports transforming from extensive to refinement, achieving high-quality development.

Strategic Objectives:	This information paper relates to Strategic Objectives of Safety, Air Navigation Capacity and Efficiency, and Environmental Protection.
Financial implications:	
References:	

[1] English and Chinese versions provided by China.

1. INTRODUCTION

1.1 The total amount of civil aviation transport in China has ranked the second in the world, and it is still developing at a high speed. Under such circumstances, how to ensure the target of safety, environmental protection, efficiency and benefit achieved successfully is the biggest challenge we face. Therefore, the Civil Aviation Administration of China proposes to construct “four characteristics airport” with "safe, green, smart and humanistic" as the core, so as to promote the development patterns of China's airports transforming from extensive to refinement, achieving high-quality development.

2. SIGNIFICANCE OF CONSTRUCTING FOUR CHARACTERISTICS AIRPORT

2.1 In recent years, the number of civil airports and airport traffic obtained continuous high-speed growth, along with the rapid development of China's civil aviation industry. In 2018, the annual passenger throughput of civil airports in China (excluding Hong Kong, Macao and Taiwan) reached 1.26 billion person-times, and the flight movements reached 11.089 million; the average annual growth rate over the past decade has been 11% and 19% respectively. The number of civil transport airports has reached 236 (excluding Hong Kong, Macao and Taiwan), which means 7 new airports a year for the past decades. There are 37 airports with an annual passenger throughput of more than 10 million, and 10 airports with an annual passenger throughput of more than 30 million. It is predicted that by 2035, the number of transport airports in China will reach 450, with 1 trip per capita and a total throughput of 3 billion passengers.

2.2 Although China has made great achievements in the speed and scale of airport construction and operation, many deep-seated contradictions have not been well solved, such as unbalanced and insufficient development, increasing resource and environmental constraints, etc.

2.3 Only rely on the traditional mode of infrastructure construction or exhausting the saturated or restricted resources has been unable to meet the needs of development. It is becoming a common consensus that we have to seek greater development space by applying new technologies, such as cloud computing, big data, internet of things, mobile internet and artificial intelligence, and promoting the new technologies deeply integrated with the operation mode, service mode and management pattern, to foster new mode, new forms of business and new drivers of growth, which makes the operation more safe and efficient, resource consumption reduced, and passenger more convenient to travel.

2.4 Some international organizations on civil aviation and CAAs of some countries have proposed and implemented intelligent transformation plans respectively. Besides, projects such as "smart city", "intelligent transportation" and "smart public security" have entered the construction and application stage.

2.5 Hereby, the Civil Aviation Administration of China puts forward the high-quality development strategy in the new era, and proposes to construct “four characteristics airport” with "safe, green, smart and humanistic" as the core, to achieve the development mode transformed from the type of scale and speed to the type of quality and efficiency, and the development power from inefficient input of resources to efficient utilization of resources and innovation driven.

3. DEFINITION OF FOUR CHARACTERISTICS AIRPORT

3.1 Four Characteristics Airport: the Airport which rely on scientific and technological progress, reform and innovation, as well as departments coordination, taking "safe, green, smart and humanistic" as the core target, optimize all of production factors of airports a full range, from planning to operation, to ensure the safe operation, fine and intelligent production management, convenient and efficient passenger travel, green and harmonious environment, fully embodying the requirement of high quality development.

3.2 Safe airport is the airport with solid foundation on safety, complete security capacity and system, keeping the whole airport operating steadily and controllable.

3.3 Green airport is the airport which is resource-conserving, low-carbon and environment-friendly in the whole life cycle.

3.4 Smart airport is an airport with all-round physical association, data sharing, collaborative efficiency and intelligent operation of production factors.

3.5 Humanistic airport is an airport that fully reflects humanistic care, pays attention to passenger experience, and is rich in cultural deposits and value.

3.6 Safe is the basic requirement, Green is the important connotation, Smart is the motive force of innovation, and Humanistic is the final goal.

4. WORKING PROGRESS

4.1 Top-level design. The “Action Outline for the Construction of Four Characteristics Airport” has being drawn up to set clear the objectives, direction and main tasks for 2020 to 2035. The action outline is scheduled to be published by the end of 2019.

4.2 Formulate relevant technical standards. Adjust and optimize the current standard system. Formulate the “Guidelines for the Construction of Four Characteristics Airport”, “Standard of the Intelligent Energy Management System in Airports”, and so on. Report of “Development of Four Characteristics Airport in China” and Report of “Research and Best Practice on Future Airport in the World” have being prepared.

4.3 Form a collaborative work mechanism. Building a sound ecological system in which research first, experiment for verification, and then summarize experiences, improve regulations and standards, promote industry-wide at last. Coordinate resources of all parties, mobilize their enthusiasm, build a shared mechanism and platform, and work together for development.

5. PRACTICE OF CHINESE AIRPORTS

5.1 Some airports in China have carried out positive and beneficial explorations and practices in the construction of Four Characteristics Airport.

5.2 In terms of strategic planning, China West Airport Group published “Planning for the implementation of the Four Characteristics Airport, and Capital Airport Holding Company published the "Guidelines for the Construction of Smart Airport in Capital Airport".

5.3 In terms of operation, Guangzhou Baiyun Airport utilizes intelligent AOC system to monitor 38 nodes of the passenger flow, detects and deals with the abnormality in time, so that the on-time rate of departure flights exceeded 80% last year. The "Changshui always normal" Operating Cooperative System of Kunming Changshui Airport has made the on-time rate of flights and the usage of gates higher than other airports in China, and the telephone inquiries from passengers are reduced by 65%.

5.4 In terms of passenger service, the first whole-process passenger self-service system was launched in the No.1 terminal of Hongqiao Airport. It takes passenger going through the whole process 7 minutes on average, and experienced passengers took no more than 3 minutes, which was 53% more efficient than the traditional mode. When "facial-recognition self-service boarding gate" and "facial-recognition security check" projects applied in Shenzhen Airport, it only takes 5-6s for one passenger to pass through the gate, and 1.5s to check the identity information.

5.5 In terms of energy conservation and emission reduction, the AEMS (Airport Energy Management System) developed by Capital Airport can monitor the energy consumption and analyse data in real time, to optimize energy supply and improve the utilization rate, which makes the energy consumption of No.1 Terminal reduced by 39.5% in one year.

6. CONCLUSION

6.1 The Assembly is invited to note the information in this paper and instruct the Secretary General to collect and share the best practice from Member States.

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