



*International Civil Aviation Organization*

**Aerodrome Safety & Planning Implementation Group**

**First Meeting (ASPIG/1)**  
*(Cairo, Egypt, 19-21 November 2019)*

---

**Agenda Item 6: Coordination between RASG-MID and MIDANPIRG in the area of Aerodromes**  
**6.3 Airport Planning Challenges (State/Airports)**

**AIRPORT PLANNING**

*(Presented by the Secretariat)*

**SUMMARY**

This paper presents the Airport Planning Challenges faced by both State and Airports.

Action by the meeting is at paragraph 3.

**REFERENCES**

- Annex 14 Volume I
- ICAO Airport Planning Manual Doc 9184 - Part 1-2nd Edition 1987

**1. INTRODUCTION**

1.1 With increasing airspace capacity, there is an urgent need to increase airport capacity. Airports face numerous significant challenges such as unpredictable growth and conflicting demands of the multitude of stakeholders. A lack of strategic planning can lead to the development of objectives that fail to consider how airport projects contribute to the longer-term sustainable development strategy. Without a coherent strategy, projects may not address basic functional requirements and intrinsic needs for the future.

**2. DISCUSSION**

***Airport Master Plans***

2.1 In many cases, inadequate planning processes have resulted in budget overruns, delays, quality issues, and lack of stakeholder engagement and acceptance. The result can create a disconnect with stakeholders and an inability to effectively manage the scope of projects as operational, political and budgetary changes occur. While these issues have become increasingly problematic in dynamic operating environments, most airport companies have failed to recognize the need to improve their strategic planning processes.

2.2 Consequently, the need for a coordinated airport master plan recognizes the importance placed on a systematic and consultative process for long-term development of airports, thereby enhancing safety and efficiency of aircraft operations while increasing capacity. As a result, airports are now successfully shifting to a new approach on airport development. Positive elements of this new approach include focusing on actual needs, developing airports as holistic systems focused on functionality, preparing for changes, creating a 'top-down' strategic fit of projects and engaging stakeholders while aligning business strategies and expertise.

2.3 The meeting may wish to note the importance of a strategic airport planning process has led to the development of a proposal to amend Annex 14, Volume 1, to support the provision of airport capacity enhancements in a timely manner. Among other provisions, the proposed Annex 14 amendment includes a Recommended Practice for Member States to establish a master plan for the development of airport infrastructure. In conjunction, a revision to Doc 9184 Airport Planning Manual, Part 1 — Master Planning is being developed to provide updated guidance that supports airport development according to the following principles:

- a) utilizing needs-driven rather than design-driven processes;
- b) embracing flexibility and accommodating change rather than attempting to ignore or negate change;
- c) focusing on holistic integrated and capacity balanced systems rather than specific technical decisions that exclude stakeholder engagement;
- d) ensuring alignment of expertise rather than the silo mentality; and
- e) employing a top-down rather than bottom-up development strategy.

2.4 The Airport Master Plan is a document that presents the short-term (1-5 years), intermediate-term (6-10 years) and long-term (10-20 year) development goals of an airport and is typically evaluated and updated every 5 to 10 years. It provides the following:

- a graphic presentation of the future development of the airport and anticipated land uses in the vicinity of the airport;
- a schedule for development;
- an achievable financial plan;
- justification for the plan technically and procedurally; and
- an implementation plan that satisfies State regulations.

2.5 The Master Plan should be reviewed at least annually and adjusted as appropriate to reflect conditions at the time of review. It should be thoroughly evaluated and modified every five years or more often if changes in economic, operational, environmental and financial condition indicate an earlier need for such revision. It is recommended that the aerodrome operator should be proactively involved in the master planning to eliminate potential hazards being created by aerodrome infrastructure, such as the runway and taxiway layout, etc., and to accommodate future aircraft developments.

2.6 The meeting may wish to highlight that Airport master plans are therefore essential components to the Civil Aviation Master Plan. As such, these plans should consider how investments in airport infrastructure support the State's national development goals as well as synergies and impacts on other forms of transportation.

### ***Traffic Forecasts and Trends***

2.7 The availability of accurate, credible air traffic forecasts is the basis for the State's aviation planning activities. Accurate forecasts are critical to effectively implement strategic planning initiatives by estimating aviation's future contributions to the State's development objectives. Such forecasts allow the State to develop sound business cases and conduct gap analyses between forecasted demand and current capacity based on existing infrastructure and human resources.

2.8 The meeting may wish to note that The State Civil Aviation Master Plan should contain traffic forecast scenarios to support various investment or policy strategies. Additional forecasts can be used to determine fleet and personnel requirements associated with each strategy.

2.9 The meeting may wish to highlight that, it may be necessary to forecast trends in multiple areas to define the scope of initiatives and related financing requirements needed to attain the State's aviation objectives. The following are examples of forecasts that may be used in the context of strategic planning:

- a) number of departures or available seat kilometers;
- b) traffic in terms of total passengers, revenue passenger kilometers or load factors according to specific routes, regions or country pairs;
- c) cargo traffic;
- d) aircraft fleet requirements; and
- e) personnel requirements to staff pilot, air traffic controller, maintenance and other essential positions.

2.10 Forecasts developed by the State should be validated by independent sources to ensure accuracy. ICAO's Long-term Forecast tool, which can be found on the iCADS platform, is an online resource that can be used for this purpose. The updated ICAO traffic forecasts have been integrated into a newly-developed electronic interface, allowing States and other users to generate customized traffic and departure forecasts at different levels of granularity (for example, by route, country-pair, city-pair, fleet type and for each country of departure). One important facet of this application is the ability to view the total personnel forecasts by Country as well as the new personnel that will need to be inducted over the forecast period. Member States with the application can take informed planning measures and that personnel training and infrastructure capacity gaps are addressed and keeps pace with the forecasted growth of traffic. (<https://www4.icao.int/icads/Product/View/26>).

2.11 In connection with the above, the meeting may wish to recognize that effective airport master planning is vital in building the airport capacity in a timely and phased approach, thus avoiding significant delays in the future due to capacity constraints. The meeting may wish to highlight that Airport capacity may be increased and airport delays may be reduced through more precise and up-to-date airport planning.

### 3. ACTION BY THE MEETING

3.1 The meeting is invited to review and agree to the following Draft Conclusion:

<b>Why</b>	to raise awareness about the importance of systematic process for long-term development of airports
<b>What</b>	organize an Airport Planning Seminar
<b>Who</b>	ICAO MID Office and States
<b>When</b>	Q2 of 2021

**DRAFT CONCLUSION 1/XX: AIRPORT PLANNING SEMINAR**

*That, in order to raise awareness about the importance of systematic process for long-term development of airports to enhance safety and efficiency of aircraft operations while increasing capacity:*

- a) ICAO to organize an Airport Planning Seminar; and*
- b) States are encouraged to participate actively in this event.*

-END-