

A DRAFT POTENTIAL USES A-CDM SYSTEM OPERATED AIRPORTS

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The airport is one of the most complex interdependent operating environment and a joint decision-making at the airport (A-CDM) is an excellent solution to improve the overall efficiency of the airport using shared information, without major capital expenditures. The paper analyzes the introduction of co-decision in airports, which aims to summarize the benefits and possible drawbacks and therefore to assess its effectiveness.

K e y w o r d s: aerodrome traffic, capacity, slot, airspace.

1 INTRODUCTION

Nowadays when continually increasing air operation is the fact that for all airports need to devote ever greater efforts to achieve effective operation and this issue does ever more complex. For this reason, most European airports gradually approaches the introduction of the CDM methodology that defines not only technical, but also the procedural steps leading to the maximum efficient use of all resources, not only for the airport operator but also by all the partners, who in the operation of air traffic at the airport also involved (eg carrier or air traffic control).

The basic building block implementation of the CDM is data sharing between all partners. This process of information exchange in an institutionalized form is called decision making. Joint decision-making airports would reduce subsequent delays at the network level and facilitate a return to normal operation after disturbances due to bad weather or other phenomena that lead to the loss of capacity of the airport. Enhanced decision-making by sharing information between all airport partners are the source of many quantitative and qualitative benefits not only for the operation of airports, but especially for the operation of the airport network.

2 THE PLACE AND ROLE OF THE AIRPORT IN AVIATION

For quite a simple question, what exactly is the airport, we can find different answers depending on what point of view and what is the width of looking at the issue. Also, the internal organization of airport companies may vary depending on the scope of activities that are within their competence conferred. Has long been true that the airport is state noncommercial organization.

The airport user of aviation in the broadest measure interferes with the services of entities that are involved in this process. Here takes place the beginning and end of transport, the decision is based on efficiency and quality

Functions of airports:

- *Initial and final point of the air transport process,*
- *Transfer between land and air transport,*
- *Point-stop routes (transit) and transfer / translation between airlines (transfer).*

Advantage and a disadvantage of these features can be uniquely placed in that geographic area - allows only limited growth outside of this area. Practically the maximum number of operations is as airport capacity. Airport capacity is defined as the ability of certain airport facilities, in cooperation with other resources and services of the airport, check in regularly peak traffic flows in a given time period at a given level of service quality.

The allocation and capacity planning are implemented at airports slots. Airport slots allow airlines to use the busiest place in Europe. The process begins with a request for the allocation of slots for slot, which sent the airline slot coordinator. The request must be in writing and delivered on time. According to IATA standards for flights for commercial purposes is given in the format SCR. This process is described in detail in the IATA Worldwide Scheduling Guidelines (global instruction scheduling), which contains a set of procedures used as a basis for planning capacity at busy airports.

Slots are allocated for winter and for summer season (summer season lasts from late March to late October). The series consists of at least 5 slots allocated to the same time on the same day of the week during the season.

3 FLOW MANAGEMENT AND AIR TRAFFIC CAPACITY

Air Traffic Control (ATC) system is the organization of aircraft movements in the airspace and the 7 operational areas of airports, including methods and procedures for air traffic control and traffic. Incorporates three basic components, depending on what stage of flight services are provided, ie. Flight controls over the line, closer to the airport and the airport movement area. The essence of ATC is a collaboration between the flight crew and air traffic controllers, which is an essential part of information exchange.

3.1 CFMU- Central flow management unit

The CFMU Centre is a dynamic organization adapting to the needs of their users, seeking to equalize the requirements of air operators and air traffic service providers. The main objective of the Centre is to provide service flow management and capacity traffic (ATFCM) of the highest quality, both in favor of air traffic services that provide information flight plan that best allocates the

available capacity, offset fluctuations in air traffic and provides protection against overloads and to air operators, who provide advice and assistance in flight planning. The fact that the Centre CFMU fulfill its objectives, must maintain and increase the efficiency of its operations primarily by increasing the level of automation and technological advances.

4 AIRPORT COLLABORATION DECISION MAKING

A characteristic feature of the economy, the airport is a close link between the capacity of airport infrastructure and a large proportion of farm labor costs, which are fixed in nature. The cost of airport infrastructure are largely independent of the actual performance at the airport, they are required to maintain the capacity of the airport and its maintenance. Therefore, it is a permanent task airport management ensure optimum utilization of airport capacity, but also to organize its growth in relation to the growth in demand. Growing competition between airports and in practice are increasingly applied in a variety of regulatory measures in the main activity of the airport, t. j ensuring the flow of passengers, baggage, cargo, mail and from aircraft to aircraft. This leads to the need to take decisive action in various management process optimization airport to airport revenues.

Currently, to ensure maximum use of European airports shows the application very useful ideas bearing the A-CDM. She was introduced to Europe by the organization IATA very good experience in the USA.

The objective of the CDM is to provide the right information to the right people at the right time and in high quality and with appropriate frequency. Joint decision-making increases the rate of situational awareness that allows each participant to optimize the response to the operational situation by better understanding the situation from a tactical and strategic perspective. Decisions are made on the basis of relevant, comprehensive and balanced information for all partners involved. The concept of CDM and provides all partners the ability to assess the performance of each partner as elements of the whole system, and not least also to maximize the use of available resources within known parameters poss. their limit.

4.1 Uses of the ACDM

For the purposes of airport CDM introduced a new time data that characterize the condition of the aircraft clearance. Estimated time TOBT aircraft ground handling defines the moment when the aircraft door closed, check the bridge is disconnected and the plane is ready, after obtaining permission from the air traffic controller (ATC), immediately begin running engines, respectively. extrusion. For entry TOBT is responsible

representative of the ground clearance. First TOBT must be given at least 25 minutes before their own time value. For commercial flights and general aviation (it is not a large transport aircraft), this value is reduced to 10 minutes. Update TOBT must be performed whenever the assumption changes by more than 2 minutes. The lowest acceptable value is updated TOBT current time + 5 minutes. Number of updates TOBT is limited.

4.2 Implementation of the CDM

The idea of the CDM is implemented using the newly introduced features that together constitute the elements of the concept of the CDM.

Joint decision discusses the efficient operation of individual elements and cooperation at the operational level. This means that input power into the hands of people who are best placed to make the right decisions. Cooperation, information sharing, joint decision-making on the basis of the information needed to increase predictability and accuracy and the utilization of available capacity is not only specific requirements for airports.

4.3 Assessment of the effectiveness of the A-CDM

According to forecasts continued growth of air transport for the coming period, while increasing airspace capacity is expected that the airport will become the most constraining element in the system of air traffic management (ATM), as follows from the analysis of the flow of air traffic delays.

Introducing the concept of A-CDM makes sense only on the assumption that all partners work together in the CDM-defined procedures. Benefits airport CDM but are not limited to the airports. Nowadays, more and more confirms that the more airports establishes procedures for joint decision-making, the more it benefits reflected on the ATM system as a whole.

4.4 Expected benefits

Expectations of all partners involved in the Airport CDM are largely identical to most, but individual users have their exact requirements.

General expectations:

- *Increase efficiency through greater accuracy,*
- *Increased planning accuracy and reliability of operational procedures,*
- *Determining the order of increasing transparency,*
- *Reduction of engine running time,*
- *Optimization of re-commissioning after cessation of activity,*
- *Automatic and timely exchange of data,*
- *Optimizing the use of available capacity under all conditions.*

Expectations of airlines and ground handling:

- *Reduction of waiting times on the track,*

- *Minimize the impact of delayed arrival at the subsequent departures,*
- *More efficient use of resources,*
- *Optimization of circulation machine*
- *Prizerania the requirements and priorities to determine the order*
- *More predictable deviations from the plan.*

Expectations airport operators:

- *Reducing the burden on the apron and taxiways,*
- *Better use of infrastructure,*
- *Better use of airport slots*
- *Greater consideration to the wishes of customers*

4.5 System benefits of implementing the A-CDM

System flow management and air traffic capacity (ATFCM) requires the most accurate data for correct estimation of the demand for air traffic. System benefits and will mainly depend on the accuracy of estimating the demand for air traffic. Accurate information about demand contribute to a more efficient flow management and air traffic capacity. Better picture of demand allows to take appropriate action (eg stratification or divert flights flight levels) in order to make better use of available capacity and provide more freedom of choice for air operators. Freedom of choice should have a positive impact on the airline operator. By selecting from the various options offered by the Centre CFMU will improve planning and joint decision-making and reduce the operating costs of airline operators.

5 CONCLUSION

To ensure the safe and efficient movement of aircraft in the airspace that are at airports, air traffic control system must be ready to receive an increasing volume of air traffic. The solution may be in measures aimed at increasing the capacity of the system and facilitate the handling of air traffic services and air traffic control.

Conceptually, the A-CDM becomes part of airport and air traffic control clearance shall support the functions of its elements. The biggest advantage of the A-CDM is in terms of flow management and air traffic capacity as it provides accurate information about the take-offs, fundamental for the allocation of slots. The more airports implement A-CDM, the more efficient use the available slots will be possible by using the system also reducing the actual cache capacity.

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