



ICAO LIMA

UNITING AVIATION


# Airport operations information exchange challenges

**Fabio Salvatierra**

*SAM Regional Officer, Aerodromes*



SWIM Seminar. Lima, October 31<sup>st</sup> – November 3<sup>rd</sup> 2017



Air traffic is predicted to **double** in the next 15 years

How can we **ensure** the realization of this growth?



# Airports are the “nodes” of the network...

- Airports may become “bottlenecks” to the Network
- New/expansion at airports: very difficult / takes time
  - Airports performance **influences** Network performance
  - Network performance **impacts** Airport performance





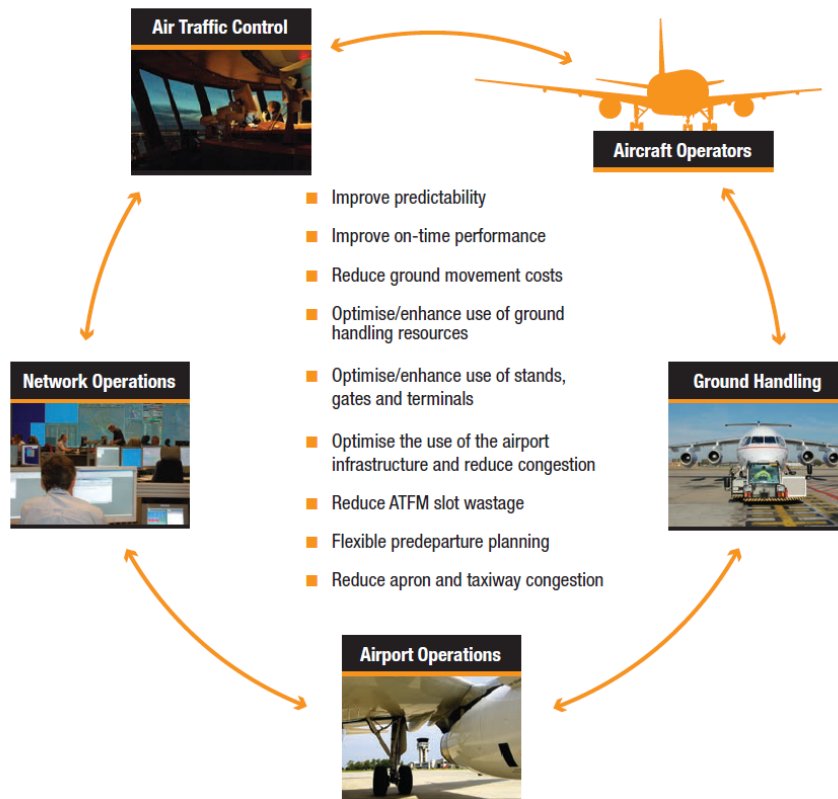
## Challenges at airports

- ✈ Improve common situational awareness between airport partners
- ✈ Enhance predictability of airport operations
- ✈ Optimise the utilisation of airport resources
- ✈ Limit the environmental impact of airport operations

## Airports... the missing link in the ATM network



# A-CDM common objectives



## Foundation for Airport CDM



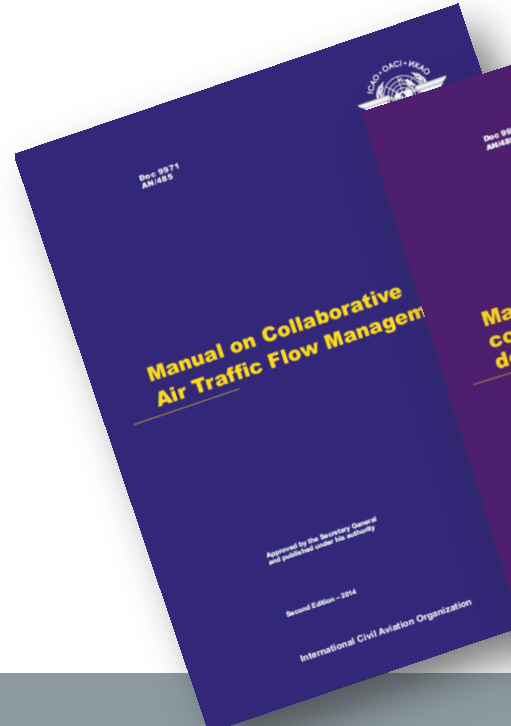
The **right** information

To the **right** people

At the **right** time



# ICAO provisions





## B0-ACDM Improved airport operations through Airport-CDM

To implement collaborative applications that will allow the sharing of surface operations data among the different stakeholders on the airport. This will improve surface traffic management reducing delays on movement and manoeuvring areas and enhance safety, efficiency and situational awareness.

### Applicability

Local for already established airport surface infrastructure.

### Benefits

<b>Capacity</b>	Enhanced use of existing infrastructure of gate and stands (unlock latent capacity). Reduced workload, better organization of the activities to manage flights.
<b>Efficiency</b>	Increased efficiency of the ATM system for all stakeholders. In particular for aircraft operators: improved situational awareness (aircraft status both home and away); enhanced fleet predictability and punctuality; improved operational efficiency (fleet management); reduced delay.
<b>Environment</b>	Reduced taxi time; reduced fuel and carbon emission; and lower aircraft engine run time.

### Cost

The business case has proven to be positive due to the benefits that flights and the other airport operational stakeholders can obtain. However, this may be influenced depending upon the individual situation (environment, traffic levels investment cost, etc.).

A detailed business case has been produced in support of the EU regulation which was solidly positive.

## B1-ACDM Optimized airport operations through A-CDM total airport management

To enhance the planning and management of airport operations and allows their full integration in air traffic management using performance targets compliant with those of the surrounding airspace. This entails implementing collaborative airport operations planning (AOP) and where needed, an airport operations centre (APOC).

### Applicability

AOP: for use at all the airports (sophistication will depend on the complexity of the operations and their impact on the network).

APOC: will be implemented at major/complex airports (sophistication will depend on the complexity of the operations and their impact on the network).

Not applicable to aircraft.

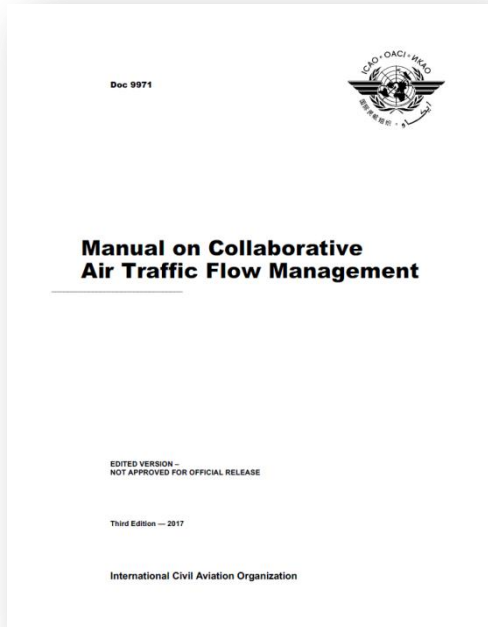
### Benefits

<b>Efficiency</b>	Through collaborative procedures, comprehensive planning and proactive action to foreseeable problems a major reduction in on-ground and in-air holding is expected thereby reducing fuel consumption. The planning and proactive actions will also support efficient use of resources; however, some minor increase in resources may be expected to support the solution(s).
<b>Environment</b>	Through collaborative procedures, comprehensive planning and proactive action to foreseeable problems a major reduction in on-ground and in-air holding is expected thereby reducing noise and air pollution in the vicinity of the airport.
<b>Predictability</b>	Through the operational management of performance, reliability and accuracy of the schedule and demand forecast will increase (in association with initiatives being developed in other modules).

### Cost

Through collaborative procedures, comprehensive planning and proactive action to foreseeable problems, a major reduction in on-ground and in-air holding is expected thereby reducing fuel consumption. The planning and proactive actions will also support efficient use of resources; however, some minor increase in resources may be expected to support the solution(s).

# Doc 9971 – 3rd edition

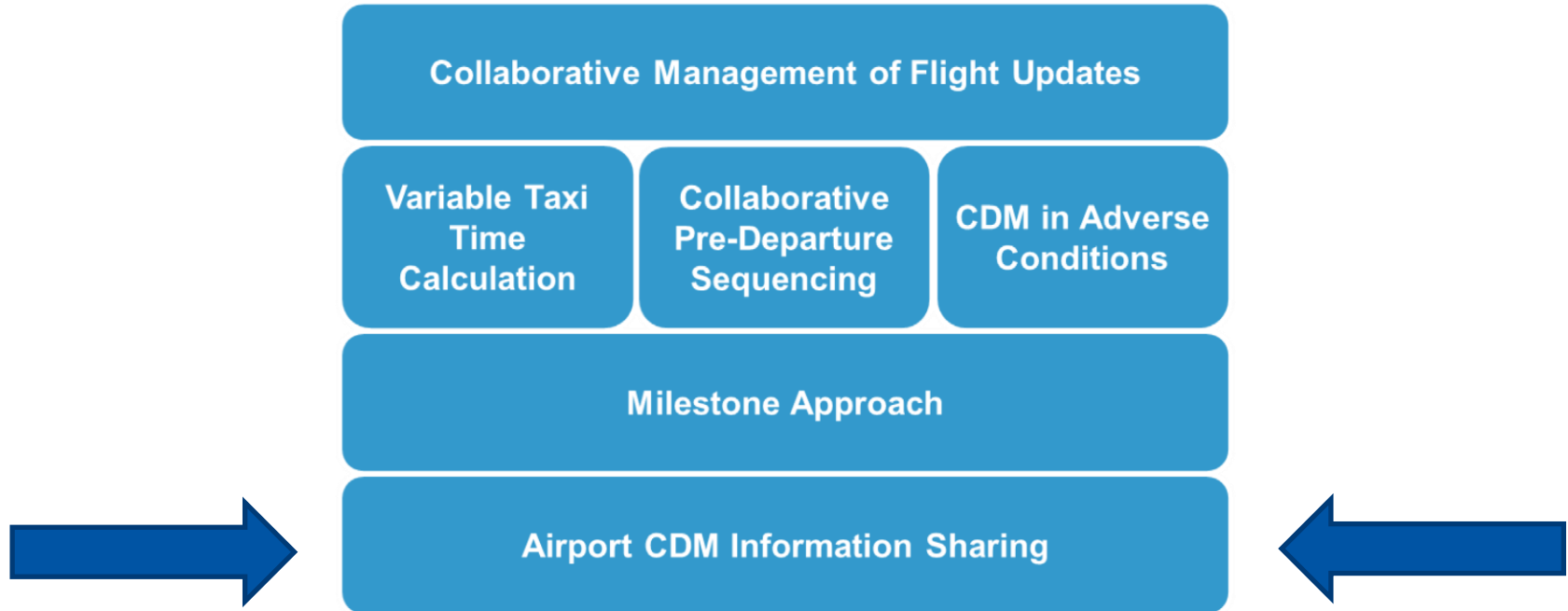


**COMING  
SOON!**

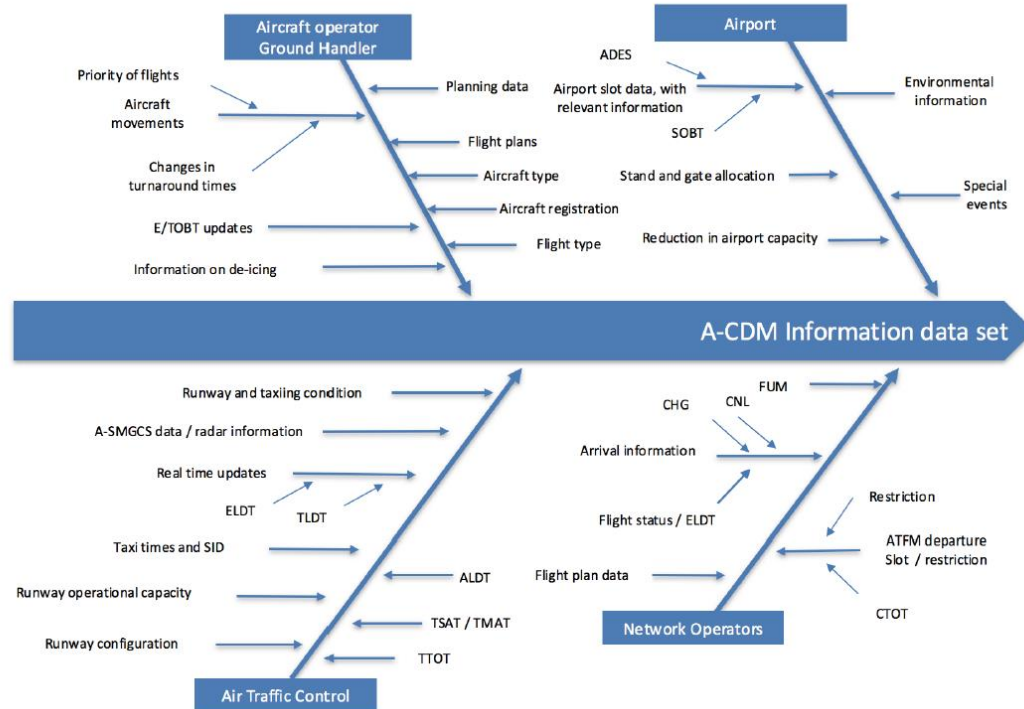
- Part 1 – CDM
- Part 2 – ATFM
- Part 3 – ACDM



## The A-CDM Elements (a.k.a “ACDM House”)



# Fundamentals of ACDM: ACIS





*“A-CDM information-sharing supports local decision-making for each of the partners and facilitates implementation of A-CDM elements. This is achieved by connecting A-CDM partners’ data processing systems to provide a single, common set of data which describes both the status and intentions of a flight. This set of inter-related, constantly updated data then forms the backbone of A-CDM and serves as a platform for information sharing between partners.”*

Doc. 9971, Part III, Chp. 3 (Unedited)







*The ATM information reference model (AIRM) is defined as a complement to the current exchange models and used as the semantic reference for SWIM information services. Existing exchange models will be consistent with the AIRM and may be used to define services for SWIM.*

*Consequently, at the global level, the AIRM is envisioned to provide support across the various individual exchange models (AIXM, FIXM, WXXM, AIDX, etc.). Specific examples of the types of support include alignment in terms of the levels of abstractions, i.e. details provided, as well as in terms of horizontal scope, i.e. content.*

Doc. 10039, MANUAL ON SYSTEM WIDE INFORMATION MANAGEMENT (SWIM) CONCEPT (Unedited)







ICAO LIMA

UNITING AVIATION



ICAO

North American  
Central American  
and Caribbean  
(NACC) Office  
Mexico City

South American  
(SAM) Office  
Lima

ICAO  
Headquarters  
Montréal

Western and  
Central African  
(WACAF) Office  
Dakar

European and  
North Atlantic  
(EUR/NAT) Office  
Paris

Middle East  
(MID) Office  
Cairo

Eastern and  
Southern African  
(ESAF) Office  
Nairobi

Asia and Pacific  
(APAC) Sub-office  
Beijing

Asia and Pacific  
(APAC) Office  
Bangkok



THANK YOU