# Airport Collaborative Decision Making

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# SCOPE OF PRESENTATION

- Need for A-CDM
- What do we really mean by A-CDM?
- What it is
- Partners
- Solutions
- Concepts
- Co-operation with ICAO on Industry Guidance Material

# Need for A-CDM

- ACI forecasts suggest that the number of passengers travelling by air will double to more than 10 billion (arr and dep) by 2029.

- many airports will face constraints in their ability to expand their infrastructure to cater for this growth.

- enhancing the operational efficiency of existing aerodrome and terminal infrastructure is an important objective for airports.

- the real-time management of airport operations becomes more difficult as airports become busier.

- potential for disruption to normal operations increases along with the impact on passengers and airport operations.

- Airports need to constantly monitor operations and identify and solve problems before they escalate into protracted disruptions and crises.

# What do we really mean by A-CDM?

- Airport CDM aims at <u>improving operational efficiency</u> at airports by reducing delays, <u>improving the predictability</u> of events during the progress of a flight and <u>optimizing the utilization of resources</u>

- Most useful at capacity-constrained and major hub airports

- Airports are the nodes of flight networks

- Major benefit during Irregular Operations (IROPS)

- A-CDM complements en-route CDM and Air Traffic Flow Management (ATFM) across a country or region.

# What A-CDM is, and what it is not

## A-CDM is about:

- ✓ **Bringing benefits to airports & the ATM network**
- ✓ **An important cultural change**
- ✓ **Harmonization of non-commercially sensitive data**
- ✓ **Implementing the foundation steps ("milestones")**
- ✓ **Free local choice of additional A-CDM steps**
- ✓ **Rapid benefits and high return on investment**
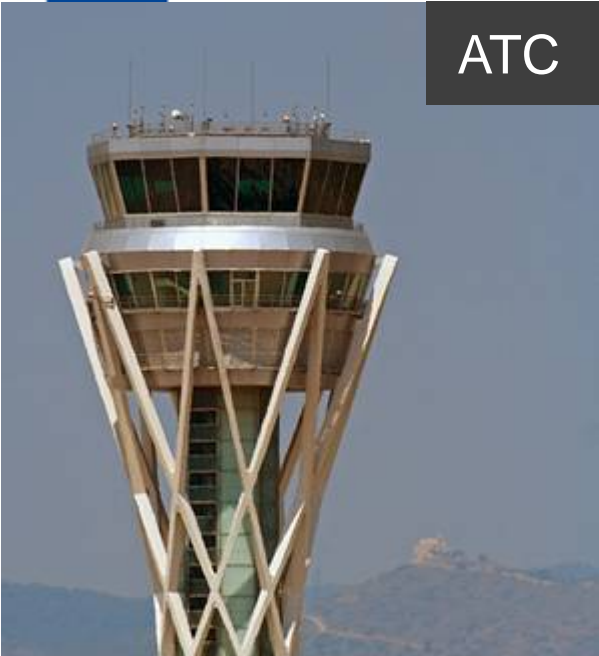- ✓ **Important operational benefits**

## A-CDM is not:

- ■ **Implementing a new system**
- ■ **An obligation to share commercially sensitive data**
- ■ **Implementing all the A-CDM steps**
- ■ **Only providing financial benefits**

# A-CDM Partners
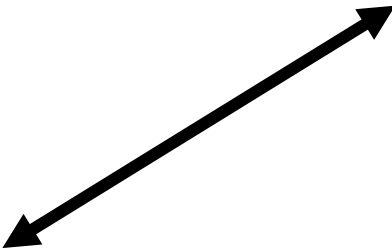


ATC

ATM / Flow Management
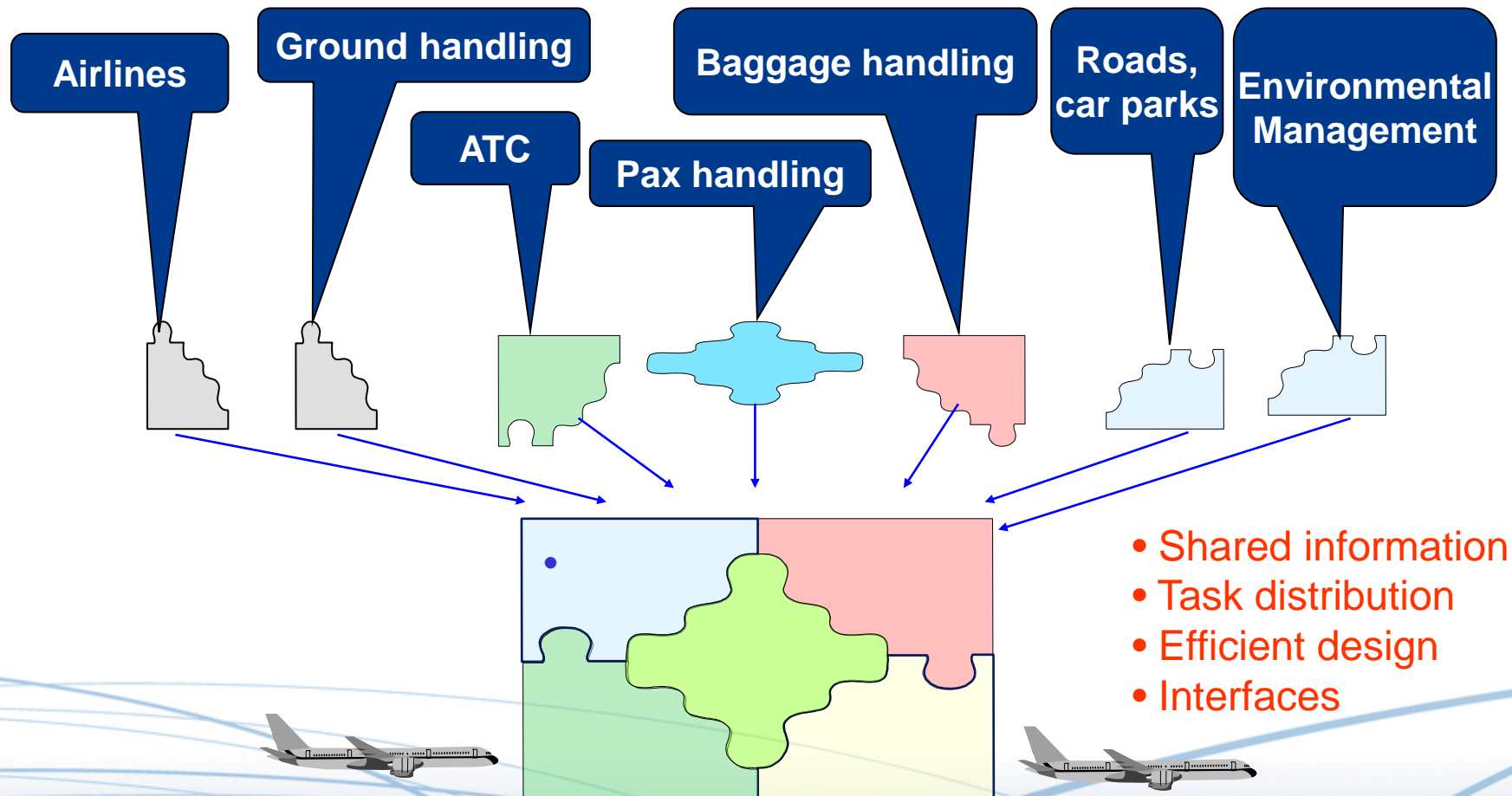
Aircraft Operator

Airport Operator

MET

AIS

GA

Ground Handlers

# Airports as Ground Coordinators – reason for strong airport operator involvement in A-CDM

Airlines

Ground handling

ATC

Pax handling

Baggage handling

Roads, car parks

Environmental Management

- Shared information
- Task distribution
- Efficient design
- Interfaces

# Solutions

■■■A typical A-CDM solution comprises both "hard" and "soft" components.

■■■The hard components include a communications system that links up all the operators on the airport platform so that real time operational information can be exchanged and when incidents occur operators can coordinate their responses, to minimize the impact of the incident on airport operations. It does not necessarily require a shared platform.

■■■The soft component involves working with the staff in the various operators on the airport platform to cultivate an environment of collaboration, mutual understanding and trust, which is essential for A-CDM to work.

# A –CDM Concepts

- ACI recognizes the considerable work done in Europe on standardization of A-CDM (see following slides)

- Longer-term objective of ACI with A-CDM: not just aircraft surface management – to extend the reach of A-CDM into landside operations, including ground handling and airport passenger and baggage processes

# Eurocontrol's concept of A-CDM elements

- Milestones
- Variable taxi time
- Pre-departure sequencing
- Adverse conditions
- Flight updates

**Airport CDM Concept Elements**

**5** Collaborative Management of Flight Updates enhances the quality of arrival and departure information exchanges between the Network Operations and the CDM airports.

**4** (CDM in) Adverse Conditions achieves collaborative management of a CDM airport during periods of predicted or unpredicted reductions of capacity.

**3** (Collaborative) Pre-departure Sequence establishes an off-block sequence taking into account operators preferences and operational constraints.

**2** Variable Taxi Time is the key to predictability of accurate take-off in block times especially at complex airports.

**1** The Milestones Approach (Turn-Round Process) aims to achieve common situational awareness by tracking the progress of a flight from the initial planning to the take off.

(Airport CDM) Information Sharing is essential in that it forms the foundation for all the other elements and must be implemented first.

# Eurocontrol Milestone approach

- 16 milestones
- 10 considered essential, the others are optional
- Standard definitions of time points, providing a consistent time reference

| Number | Milestones | Time Reference | Mandatory / Optional for Airport CDM Implementation |
|---|---|---|---|
| 1 | ATC Flight Plan activation | 3 hours before EOBT | Highly Recommended |
| 2 | EOBT – 2 hr | 2 hours before EOBT | Highly Recommended |
| 3 | Take off from outstation | ATOT from outstation | Highly Recommended |
| 4 | Local radar update | Varies according to airport | Highly Recommended |
| 5 | Final approach | Varies according to airport | Highly Recommended |
| 6 | Landing | ALDT | Highly Recommended |
| 7 | In-block | AIBT | Highly Recommended |
| 8 | Ground handling starts | ACGT | Recommended |
| 9 | TOBT update prior to TSAT | Varies according to airport | Recommended |
| 10 | TSAT Issue | Varies according to airport | Highly Recommended |
| 11 | Boarding starts | Varies according to airport | Recommended |
| 12 | Aircraft ready | ARDT | Recommended |
| 13 | Start up request | ASRT | Recommended |
| 14 | Start up approved | ASAT | Recommended |
| 15 | Off-block | AOBT | Highly Recommended |
| 16 | Take off | ATOT | Highly Recommended |
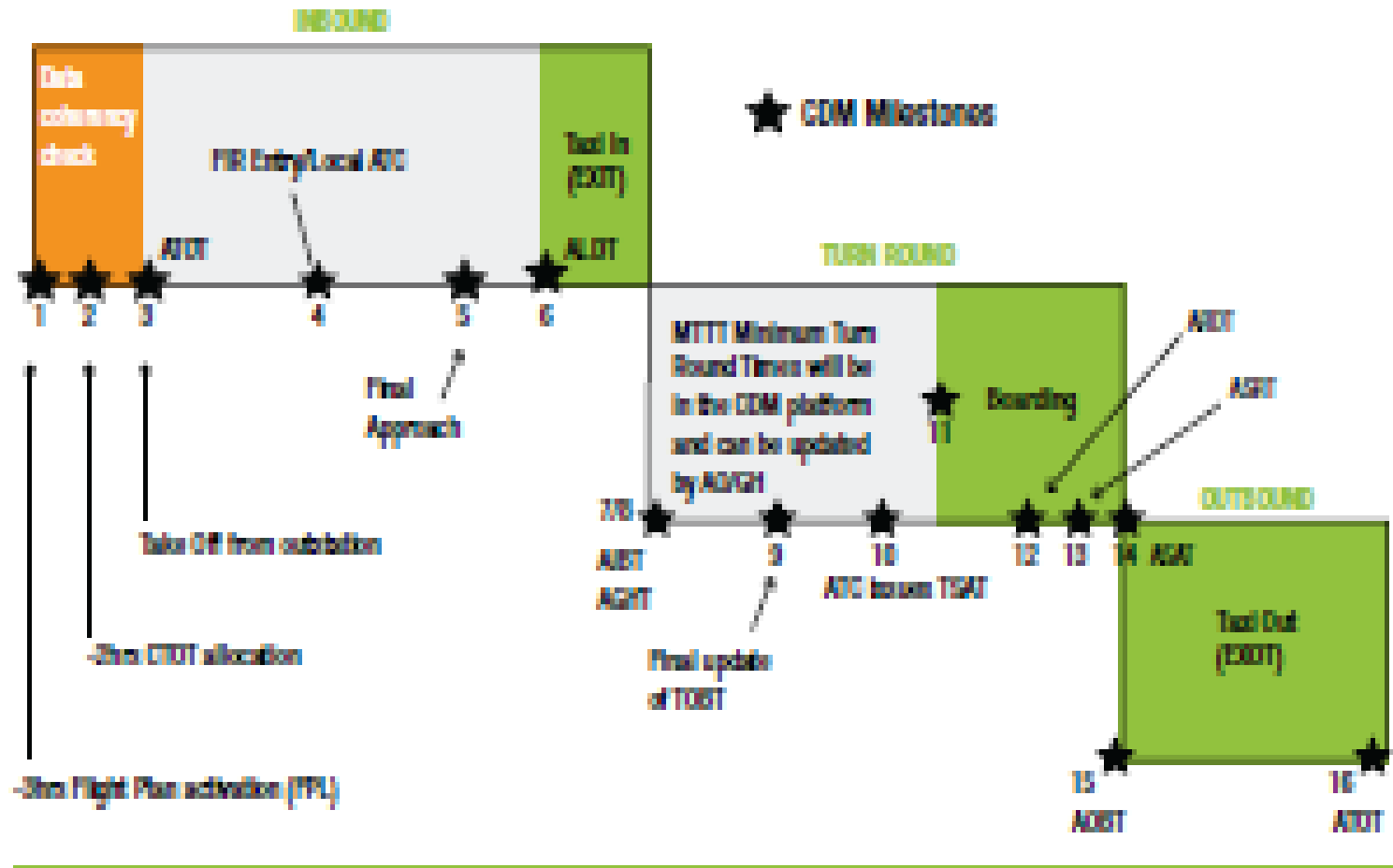
# Co-operation with ICAO

- ICAO has developed Aviation System Block Upgrade modules on A-CDM :
    - B0 –A-CDM (Surface management) and B1 – A-CDM (Total airport management)
- ICAO (at ACI's suggestion) agreed on the need for global guidance material and technical standards for A-CDM
- The ACI STSC started in 2014 to write a "primer" for Airport Operators wishing to implement A-CDM with their partners - to be given to ICAO for use in its planned document on Airport CDM
- Change of plan in mid-2014:
    - ICAO set up a task force on A-CDM and requested the industry organizations to join it to write worldwide guidance material
    - ACI agreed to participate
    - IATA, CANSO, China, Eurocontrol, FAA joined the task force
- Draft manual to be produced by end of 2015

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