



भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA





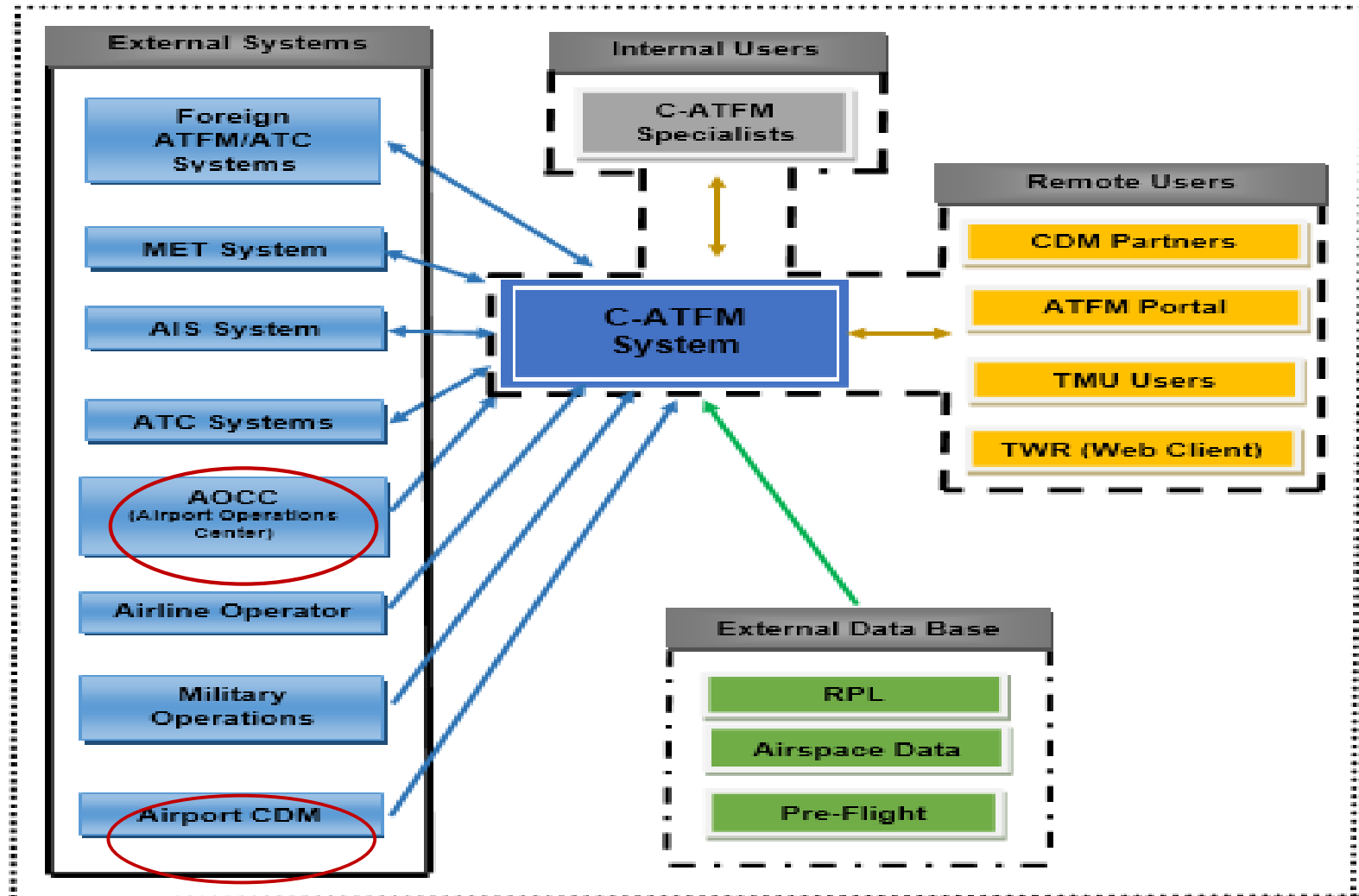
भारतीय विमानपत्तन प्राधिकरण
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C-ATFM AND A-CDM/AOCC INTEGRATION

ATFM & A-CDM/AOCC INTEGRATION



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C-ATFM & AOCC INTERFACE



OPERATIONAL CONTEXT OF INTEGRATION BETWEEN C-ATFM AND AOCC SYSTEM



AOCC (Airport Operations Control Center)

Provides:

➤ **Update aircraft departure data**

AOI (Airport Operations Information) request for DEP information
(EOBD, EOBT, AOBD, AOBT, ATOT etc.)

➤ **Update aircraft arrival data**

AOI (Airport Operations Information) request for ARR information
(EOBD, EOBT, ALDT etc.)

➤ **Update aerodrome operational data (if the AOCC system can provide this information).**

AERODROME OPERATION

(RWY INFO, RWY CONDITION, ILS CAT etc.)

ADEXP format is used for sending Airport Operations Information (AOI) information



AOI request for DEP information (STANDARD ADEXP)

Primary Field	Description	Classification
-TITLE	Message title. In this case should be "AOI"	M
-EVENT	Identifies the event. In this case should be used "DEP"	M
-ORGNID	The designator of an addressee having originated a message.	O
-ARCID	Aircraft Identification. May be the registration marking of the aircraft, or the ICAO designator of the aircraft operator followed by the flight identifier.	M
-ADEP	ICAO location indicator of the aerodrome of departure or the indication 'AFIL' meaning an aird filed flight plan or 'ZZZZ' when no ICAO location indicator is assigned to the aerodrome of departure.	M
-ADES	The ICAO location indicator of the aerodrome of destination or 'ZZZZ' when no ICAO location indicator is assigned to the aerodrome of destination.	M
-EOBD	Estimated Off-Block Date (YYMMDD)	M
-EOBT	Estimated Off-Block Time (EOBT) (HHMM)	M
-AOBD	Actual Off_Block Date (YYMMDD)	M
-AOBT	Actual Off_Block Time (HHMM)	M
-ATOT	Actual Take Off Time (HHMM)	M
-RWYDEP	Departure Runway.	M
-PKDEP	Parking position for a departing flight.	M
-TIMESTAMP	The time at which an event occurred (YYMMDDHHMMSS).	M

Classification: M-Mandatory ; O-Optional





AOI request for DEP information

Example:

- TITLE AOI
- EVENT DEP
- ORGNID VIDPAOCC
- ARCID AIC111
- ADEP VIDP
- ADES VABB
- EOBD 141018
- EOBT 1030
- AOBD 141018
- AOBT 1040
- ATOT 1052
- RWYDEP 28
- PKDEP 26
- TIMESTAMP 141018105200



AOI request for ARR information (STANDARD ADEXP)

Primary Field	Description	Classification
-TITLE	Message title. In this case should be "AOI"	M
-EVENT	Identifies the event. In this case should be used "ARR"	M
-ORGNID	The designator of an addressee having originated a message.	O
-ARCID	Aircraft Identification. May be the registration marking of the aircraft, or the ICAO designator of the aircraft operator followed by the flight identifier.	M
-ADEP	ICAO location indicator of the aerodrome of departure or the indication 'AFIL' meaning an aird filed flight plan or 'ZZZZ' when no ICAO location indicator is assigned to the aerodrome of departure.	M
-ADES	The ICAO location indicator of the aerodrome of destination or 'ZZZZ' when no ICAO location indicator is assigned to the aerodrome of destination.	M
-EOBD	Estimated Off-Block Date (YYMMDD).	M
-EOBT	Estimated Off-Block Time (EOBT) (HHMM)	M
-ALDT	Actual Landing Time (HHMM)	M
-RWYARR	Arrival Runway.	M
-PKARR	Parking position for an arriving flight	M
-TIMESTAMP	The time at which an event occurred. (YYMMDDHHMMSS)	M

Classification: M-Mandatory ; O-Optional



AOI request for ARR information

Example:

- TITLE AOI
- EVENT ARR
- ORGNID VABBAOCC
- ARCID AIC111
- ADEP VIDP
- ADES VABB
- EOBD 141018
- EOBT 1030
- ALDT 1241
- RWYARR 27
- PKARR 51
- TIMESTAMP 141018124100



AOI request for Aerodrome operation (STANDARD ADEXP)

Primary Field	Sub-Field	Description	Classification
-TITLE		Message title. In this case should be "AOI"	M
-EVENT		Identifies the event. In this case should be used "ASC"	M
-ORGNID		The designator of an addressee having originated a message.	O
-AD	ADID	The ICAO designator of an aerodrome.	M
	PTRULCHG	Indication of a change in "flight rules"(VFR/IFR).	M
-AREASTS		The status of an airspace expressed as free text indicating if the area is active or inactive and the type of activity.	M
-COMMENT		A general comment in free text without hyphen.	O
-RWYLIST	BEGIN	Beginning of the list.	M
	RWYINFO	Contains configuration data for a specific runway. Should contain Runway identifier (Rwyid), Availability of the runway (Rwyavail) and optionally the active status of ILS category [Ilscat]	M
	END	End of the list	M
-TIMESTAMP		The time at which an event occurred (YYMMDDHHMMSS).	M

Classification: M-Mandatory ; O-Optional



AOI request for AERODROME OPERATION

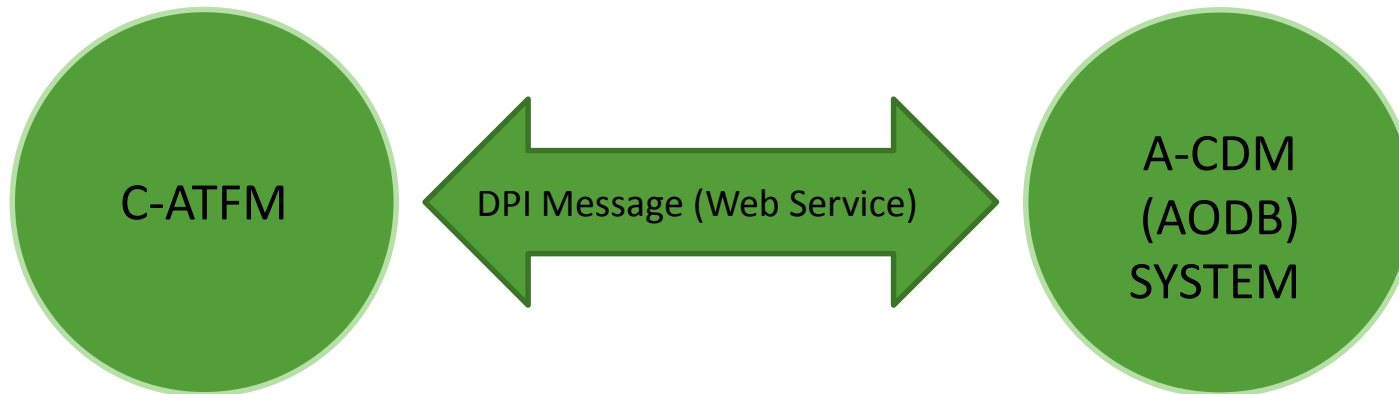
Example:

-TITLE AOI
-EVENT ASC
-ORGNID VIDPAOCC
-AD
-ADID VIDP
-PTRULCHG IFR
-AREASTS ACTIVE
-COMMENT RUNWAY 27 SLIPERRY
-BEGIN RWYLIST
-RWYINFO -RWYID 27 -RWYAVAIL B –ILSCAT CATI
-RWYINFO -RWYID 29 -RWYAVAIL C –ILSCAT CATIII
-END RWYLIST
-TIMESTAMP 141217104100





ATFM/A-CDM INTERFACE



OPERATIONAL CONTEXT OF INTEGRATION BETWEEN C-ATFM AND A-CDM SYSTEM





The message should be sent by A-CDM (AODB System) in the events of:

- Modification on take-off or off-block time of more than 5 minutes.
- Modification of the aircraft type and/or aircraft registration.

The message should be sent by C-ATFM in the events of:

- Modification on Estimated Landing Time (ELDT) more than 3 minutes.
- Application of ATFM program for Calculated Time of Arrival (CTA) and Calculated Take-Off Time (CTOT).





Airport CDM

Provides:

- Update aircraft departure data and aircraft arrival data

Departure Planning Information (DPI) Message (From A-CDM System)

(EOBD, EOBT, AIBT, TOBT, TSAT, TTOT, ATOT, AOBD, AOBT, ALDT etc.)

Departure Planning Information (DPI) Message (From ATFM System)

(EOBD, EOBT, ELDT, CTA, CTOT ETC.)

ADEXP format is used for sending Airport Operations Information (AOI) information



ATFM & A-CDM/AOCC INTEGRATION



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PrimaryField	Description	Classification
TITLE	Message title. In this case should be "DPI"	M
ORGNID	The designator of an addressee having originated a message.	O
ARCID	Aircraft Identification. Maybe the registration marking of the aircraft, or the ICAO designator of the aircraft operator followed by the flight identifier.	M
ADEP	ICAO location indicator of the aerodrome of departure or the indication 'AFIL' meaning an air filed flight plan or 'ZZZZ' when no ICAO location indicator is assigned to the aerodrome of departure.	M
ADES	The ICAO location indicator of the aerodrome of destination or 'ZZZZ' when no ICAO location indicator is assigned to the aerodrome of destination.	M
EOBD	Estimated Off-Block Date.	M
EOBT	Estimated Off-Block Time.	M
AIBT	Actual In-Block Time. This information is sent from A-CDM (AOBD System) to C-ATFM.	O
TOBT	Target off-block time. The message should contain this field and/or TSAT. This information is sent from A-CDM (AOBD System) to C-ATFM.	O
TSAT	Target startup approval time. The message should contain this field and/or TOBT. This information is sent from A-CDM (AOBD System) to C-ATFM.	O
TTOT	Target take-off time. This information is sent from A-CDM (AOBD System) to C-ATFM.	O
ATOT	Actual Take Off Time. This information is sent from A-CDM (AOBD System) to C-ATFM.	O
AOBD	Actual Off-Block Date. This information is sent from A-CDM (AOBD System) to C-ATFM.	O
AOBT	Actual Off-Block Time. This information is sent from A-CDM (AOBD System) to C-ATFM.	O
ALDT	Actual Landing Time. This information is sent from A-CDM (AOBD System) to C-ATFM.	O
ARCTYP	Type of aircraft (ICAO identification of the type) or ZZZZ. This information is sent from A-CDM (AOBD System) to C-ATFM.	O
REG	Registration markings, as ICAO field 18 REG/. This information is sent from A-CDM (AOBD System) to C-ATFM.	O
ETA	Estimated time of arrival. This information is sent from C-ATFM to A-CDM (AOBD System).	O
CTA	Calculated Time of Arrival. This information is sent from C-ATFM to A-CDM (AOBD System).	O
CTOT	Calculated Take-Off Time. This information is sent from C-ATFM to A-CDM (AOBD System).	O
TIMESTAMP	The time at which an event occurred.	M

Classification: M-Mandatory ; O-Optional

Departure Planning Information (DPI) Message

Some Examples:

-TITLE DPI
-ORGNID VIDPACDM
-ARCID ETH3739
-ADEP VIDP
-ADES HAAB
-EOBD 141217
-EOBT 1030
-AIBT 1700
-TOBT 1035
-TSAT 1035
-TTOT 1036
-ATOT 1039
-AOBD 141217
-AOBT 1040
-ALDT 1645
-ARCTYP B773
-REG ETAPS
-TIMESTAMP 141217104100

-TITLE DPI
-ORGNID VIDPACDM
-ARCID ETH3739
-ADEP VIDP
-ADES HAAB
-EOBD 141217
-EOBT 1030
-ETA 1230
-TIMESTAMP 141217104100

-TITLE DPI
-ORGNID VIDPACDM
-ARCID ETH3739
-ADEP VIDP
-ADES HAAB
-EOBD 141217
-EOBT 1030
-CTA 1240
-CTOT 1045
-TIMESTAMP 141217104100



ATFM & A-CDM/AOCC INTEGRATION



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Operator aksoni Login 26/11/2018 - 07:19 Expires: 19:41

Logout

07:21 UTC
26/11/2018

Flow Security Control Flight Plans Meteorology Support Operability Basic Data Air Situation

> Flight Plans > ADEXP Messages

Messages: Received Sent

Receiving date:

Message Type:

Error Type:

ARCID:

ADEP:

ADES:

Search

Receiving date	Message Type	Error Type
25/11/2018 - 03:04:06	UFN (Undefined)	Problem of syntax
24/11/2018 - 09:03:32	UFN (Undefined)	Problem of syntax
24/11/2018 - 08:58:11	UFN (Undefined)	Problem of syntax
22/11/2018 - 07:08:29	UFN (Undefined)	Problem of syntax
21/11/2018 - 01:41:48	UFN (Undefined)	Problem of syntax
20/11/2018 - 10:45:08	UFN (Undefined)	Problem of syntax
20/11/2018 - 06:12:26	UFN (Undefined)	Problem of syntax
17/11/2018 - 10:36:43	UFN (Undefined)	Problem of syntax
16/11/2018 - 17:49:14	UFN (Undefined)	Problem of syntax
16/11/2018 - 10:17:38	UFN (Undefined)	Problem of syntax
16/11/2018 - 02:53:07	DPI (Departure Planning I...	Without error
16/11/2018 - 02:48:12	DPI (Departure Planning I...	Without error
15/11/2018 - 17:10:13	UFN (Undefined)	Problem of syntax
15/11/2018 - 17:08:09	UFN (Undefined)	Problem of syntax
15/11/2018 - 07:14:06	ASC (Operational Status A...	Without error
15/11/2018 - 05:15:47	ASC (Operational Status A...	Without error
14/11/2018 - 12:33:18	ASC (Operational Status A...	Without error
14/11/2018 - 12:23:57	ASC (Operational Status A...	Without error
14/11/2018 - 12:22:29	ASC (Operational Status A...	Without error
14/11/2018 - 01:07:00	UFN (Undefined)	Problem of syntax

Message Data

Error Message

Original Message

```
-TITLE DPI
-EVENT DPI
-ORGNID VECCACDM
-TIMESTAMP 1811160253
-EOBT 0235
-EOBD 181116
-ADEP VECC
-ADES VEBN
-ARCID IGO713
-AOBD 181116
-AOBT 0234
-ATOT 0248
-RWYDEP 19L
```

3832 of 4000 character(s) remaining.

Changed Message

```
-TITLE DPI
-EVENT DPI
-ORGNID VECCACDM
-TIMESTAMP 1811160253
-EOBT 0235
-EOBD 181116
-ADEP VECC
-ADES VEBN
-ARCID IGO713
-AOBD 181116
-AOBT 0234
-ATOT 0248
-RWYDEP 19L
```

3832 of 4000 character(s) remaining.

Validate Message

ATFM & A-CDM/AOCC INTEGRATION



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Flight Plan Detail

Flight Data

Indicative: ADEP: EOBD: EOBT: ETOT: Flight Type:
Airline Callsign: AOBD: AOBT: ATOT:

Aircraft

Number: Aircraft type: Wake Turbulence Category:

Additional Information

Nav/Com: Flight Rule:

Frequency

Plan Type: Frequency:

Additional Information

ADES: EET: SLDT: Alternative Aerodrome:
Flight Speed: Flight Level: ELDT:
ALDT: AIBT:

Route:

R460

796 of 800 character(s) remaining.

Other informations

PBN/A1B2B3B4C2D2O2 NAV/TCAS II EQUIPPED RNP2 CONTINENTAL DOF/181116 REG/VTITB SEL/HJBK
CODE/800B73 RMK/RT DESIGNATOR IFLY EET/VECF0006

666 of 800 character(s) remaining.

Results

Warnings:

16/11/2018 02:53:07 OLDI message received.
EOBT: 0235
ATOT: 0248

Show Flight Plan Messages

Details

Close

ATFM & A-CDM/AOCC INTEGRATION

Operator aksoni Login 26/11/2018 - 07:16 Expires: 19:47

Logout

07:17 UTC
26/11/2018

Flow
Security Control
Flight Plans
Meteorology
Support
Operability
Basic Data
Air Situation

> Flight Plans > ADEXP Messages

Messages: Received Sent

Sending Date:

Message Type:

ARCID:

ADEP: ADES:

Sending Date	Message Type
26/11/2018 - 07:16:10	DPI (Departure Planning I...
26/11/2018 - 07:15:40	DPI (Departure Planning I...
26/11/2018 - 07:14:44	DPI (Departure Planning I...
26/11/2018 - 07:14:41	DPI (Departure Planning I...
26/11/2018 - 07:14:41	DPI (Departure Planning I...
26/11/2018 - 07:13:57	DPI (Departure Planning I...
26/11/2018 - 07:13:57	DPI (Departure Planning I...
26/11/2018 - 07:13:16	DPI (Departure Planning I...
26/11/2018 - 07:13:15	DPI (Departure Planning I...
26/11/2018 - 07:13:11	DPI (Departure Planning I...
26/11/2018 - 07:11:51	DPI (Departure Planning I...
26/11/2018 - 07:11:47	DPI (Departure Planning I...
26/11/2018 - 07:11:42	DPI (Departure Planning I...
26/11/2018 - 07:11:07	DPI (Departure Planning I...
26/11/2018 - 07:11:06	DPI (Departure Planning I...
26/11/2018 - 07:11:02	DPI (Departure Planning I...
26/11/2018 - 07:10:18	DPI (Departure Planning I...
26/11/2018 - 07:10:12	DPI (Departure Planning I...
26/11/2018 - 07:09:43	DPI (Departure Planning I...
26/11/2018 - 07:09:43	DPI (Departure Planning I...

1 - 20 (62024) << < 1 2 3 4 5 > >>

Message Data

ACDM Status

Aerodrome	URL Web Service	Observation	Status
VIDP	https://apps.dialit.co.in/AcdmToCatfm/AcdmDepartureEP?wsdl	Connection settings disabled by the C-ATFM Administrator.	■

(1)

■ Sent Successfully
■ Processing
■ Warning
■ Disabled

Message Sent:

```

-TITLE DPI
-EVENT DPI
-TIMESTAMP 1811260715
-EOBT 0505
-EOBD 181126
-ADEP VIDP
-ADES VIDPN
-ARCID IGO364
-ELDT 0752
                    
```

ATFM & A-CDM/AOCC INTEGRATION



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ATFM

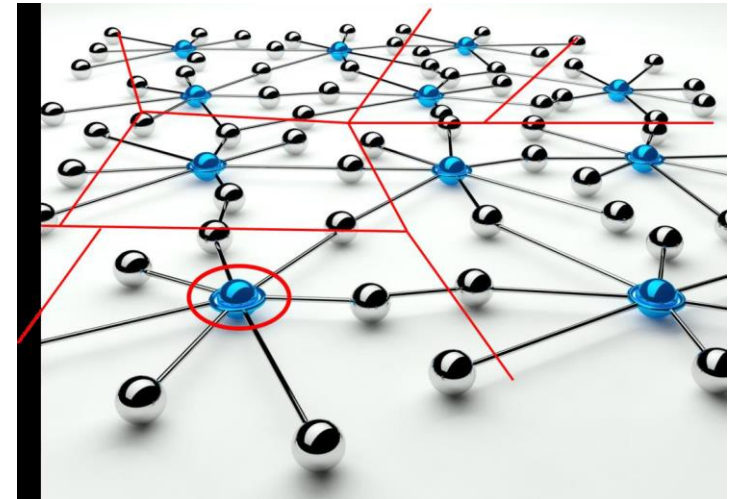
- Why: Efficient Use of Airspace Capacity
- How: Prediction of Demand

AIRPORT CDM

- Why: Efficient Use of Airport Resources
 - Runway
 - Gates
 - Equipment & Services
- How: Prediction of Pushback and take-Off

Integration of ACDM with ATFM enables

- Arrival Predictability;
- Off-Block Predictability;
- Take-Off Predictability



Benefits

- **Economically**
 - Reduced costs for fuel & resources
- **Capacity**
 - Reduced planning buffers
- **Flight Schedule times**
- **Turnaround times**
- **Airport slots**
 - Reduced network capacity buffers
- **Environment**
 - Reduced fuel and noise emissions
- **Safety**
 - Contribution to Workload reduction





*Thank
You*

