

Supporting  
European  
Aviation



# Airport - Collaborative Decision Making

## Connecting airports with the ATM network

Dave Booth

A-CDM Implementation Manager

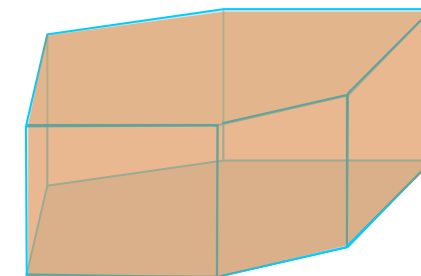
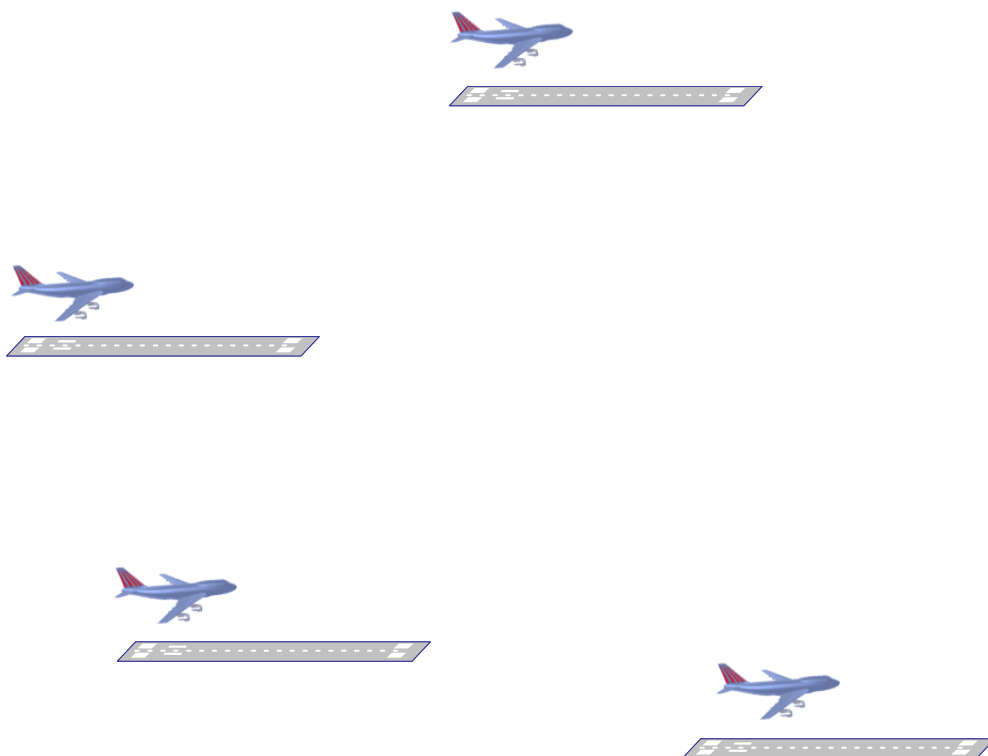


# Collaborative Management of Flight Updates

- Today, NMOC needs optimal traffic demand picture (EOBT+ Default Taxi Time)
- To avoid unnecessary restrictions applied
- Wasted ATFM slots
- Overload and traffic bunching

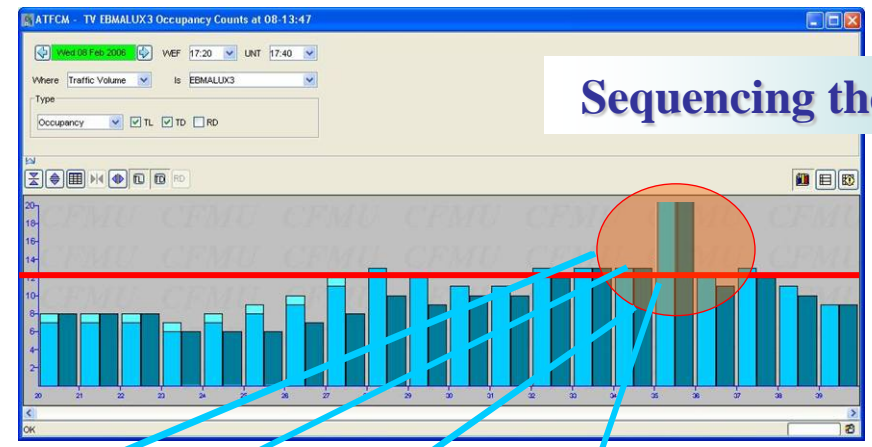
# ATFM basic principle

**Avoiding congestion**  
**Safety Issue**



# ATFM basic principle

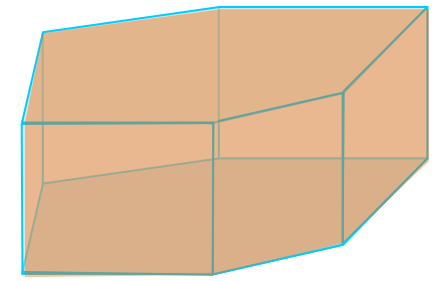
**Avoiding congestion**  
**Safety Issue**



**Sequencing the traffic**



**Benefits:**  
Safer  
Fuel savings  
Less CO<sub>2</sub> emission



# Turn Turn-round process: The milestone approach

## **INBOUND**

**Flight is scheduled/FPL is filed**  
**Estimated Landing Time (FUM)**  
**Aircraft departed from previous station**  
**Aircraft 20mn off**  
**Actual Landing Time (ALDT)**  
**Aircraft In Block Time (AIBT)**  
**Doors Open**  
**Start Disembarking**  
**End Disembarking**  
**End of Services**



## **OUTBOUND**

**Gate Open**  
**Start Boarding**  
**End Boarding**  
**Gate Closed**  
**Doors Closed**  
**Start Up Request**  
**Push Back Request**  
**Push Back Clearance**  
**Aircraft Off Block Time (AOBT)**  
**Taxi Request**  
**Taxi Clearance**  
**Actual Take Off Time (ATOT)**

# DPI Types



<b>DPI type</b>	<b>DPI status</b>	<b>Filing time frame</b>
-E-DPI (Early DPI)	DPISTATUS-Early	3h till 2h before EOBT
-T-DPI_t (Confirmed)	DPISTATUS- Target	2h till 40min before EOBT
-T-DPI_s (Sequenced)	DPISTATUS- SEQ	40min till 10min before EOBT
-A-DPI (ATC DPI)	DPISTATUS- ATC	30min before EOBT till take-off
-C-DPI (Cancel DPI)	DPISTATUS- CNL	Anytime

# (E-DPI) Early DPI

- Purpose:
  - An E-DPI informs NMOC about the airport slot (SOBT) for a particular flight
  - Provides first update of TTOT, SID, EXOT, ARCTYP and REG if available.
- Content:
  - SID, Taxi-Time, ARCTYP, REGistration.
  - TTOT
  - SOBT
  - TOBT
- Sent:
  - At EOBT-3h
  - At any update of TOBT  $\geq 5$  min.
  - At any change of EXOT  $> 3$  min.

# E-DPI



03-14:30 KLM1770 Incoming Message - Dpi EDDFYDYX @AFTN

Message :

Received from: EDDFYDYX @AFTN. Est. Xmit at: 18/11/03 14:30:00. Message

description:-TITLE DPI

-DPISTATUS EARLY

-ARCID KLM1770

-ADEP EDDF

-ADES EHAM

-EOBT 1730

-EOBD 181103

-TAXITIME 0013

-TTOT 1743

-SOBT 1730

-SID MARUN5E

-ARCTYP E190

-IFPLID AA07669970

-ORIGIN

-NETWORKTYPE AFTN

-FAC EDDFYDYX



# (T-DPI\_t) Target DPI-Target

- Purpose:
  - Inform ETFMS about the time when A/C is ready (door closed) from an AO and handler point of view.
  - This time is based upon A/C & crew connections, fueling, boarding etc.
- Content:
  - TTOT (from AO/Handler)
  - Possibly SID, Taxi-Time, ARCTYP, REGistration
  - **TOBT**
  - **TSAT (only after TSAT issue time)**
- Sent:
  - First one at EOBT-2h
  - At any updates of SID, Taxi-Time, ARCTYP, REGistration
  - At updates of TOBT or TSAT  $\geq 5$  min

# T-DPI\_t

03-15:30 KLM1770 Incoming Message - Dpi EDDFYDYX @AFTN

Message :

Received from: EDDFYDYX @AFTN. Est. Xmit at: 18/11/03 15:30:00. Message

description:-TITLE DPI

-DPISTATUS TARGET

-ARCID KLM1770

-ADEP EDDF

-ADES EHAM

-EOBT 1730

-EOBD 181103

-TAXITIME 0013

-TTOT 1743

-SID MARUN5E

-ARCTYP E190

-IFPLID AA07669970

# (T-DPI\_s) Target DPI-Sequenced

- Purpose:
  - Inform the network about the TTOT from the pre-departure sequence.
- Content:
  - TOT of ATC pre-departure sequence (in the TTOT field)
  - Possibly SID, Taxi-Time, ARCTYP, REGistration
  - **TOBT and TSAT**
- Sent:
  - **Non Regulated flights:**
    - Between TOBT-40 min and Actual Off-Block Time.
  - **Regulated Flights:**
    - Between TSAT-10 min and Actual Off-Block
    - At updates of TOBT or TSAT  $\geq 5$  min

# T-DPI\_s



03-14:07 DLH464 2 Incoming Message - Dpi EDDFYDYX @AFTN

Message :

Received from: EDDFYDYX @AFTN. Est. Xmit at: 18/11/03 14:07:00. Message

description:-TITLE DPI

-DPISTATUS SEQ

-ARCID DLH464

-ADEP EDDF

-ADES KMCO

-EOBT 1350

-EOBD 181103

-TOBT 1410

-TSAT 1410

-TAXITIME 0016

-TTOT 1428

-SID SOBRA1L

-ARCTYP B744

-REG DABTL

-IFPLID AA07669834

# (A-DPI) ATC DPI

- Purpose:
  - Supplies the Actual Off-Block event.
  - Supplies accurate estimation of the Take-Off Time.
  - Freezes CTOT
  - Freezes flight plan updates.
- Content:
  - Accurate estimate of the Actual Take-Off Time.
  - $TTOT = \text{Actual Off-Block} + EXOT$ .
  - SID, Taxi-Time, ARCTYP, REGistration.
- Sent:
  - Between Push-back/Actual Off Block and Take-Off.
  - At general trigger events

# (A-DPI) ATC DPI

- 03-14:17 DLH464 2 Incoming Message - Dpi EDDFYDYX @AFTN
- Message :
- Received from: EDDFYDYX @AFTN. Est. Xmit at: 18/11/03 14:17:00. Message
- description:-TITLE DPI
- -DPISTATUS ATC
- -ARCID DLH464
- -ADEP EDDF
- -ADES KMCO
- -EOBT 1350
- -EOBD 181103
- -TAXITIME 0016
- -TTOT 1433
- -SID SOBRA1L
- -ARCTYP B744
- -REG DABTL
- -IFPLID AA07669834

# C-DPI (Cancel DPI) and Flight Suspension

- A C-DPI is sent by the airport either when the CDM system is not working or previous CDM information is not valid anymore. Most used when flight has to **return to the stand**. (technical reason).
- **ETFMS will suspend the flight when a C-DPI is received.**
- New data is expected for such a flight and all information currently available is considered as obsolete.
- A **FLS** will be sent with a comment: **SUSPENDED BY DEPARTURE AIRPORT.**
- The flight will be de-suspended after:
  - A reception of DLA/CHG
  - A new DPI message
  - The A-DPI is accepted for such a suspended flight

# C-DPI

- 03-12:57 DLH464 2 Incoming Message - Dpi EDDFYDYX @AFTN
- Message :
- Received from: EDDFYDYX @AFTN. Est. Xmit at: 18/11/03 12:57:00. Message
- description:-TITLE DPI
- -DPISTATUS CNL
- -ARCID DLH464
- -ADEP EDDF
- -ADES KMCO
- -EOBT 1240
- -EOBD 181103
- -REASON TOBTUNKNOWNOREXPIRED
- -IFPLID AA07669834
- -ORIGIN
- -NETWORKTYPE AFTN
- -FAC EDDFYDYX



# Thank you



[david.booth@eurocontrol.int](mailto:david.booth@eurocontrol.int)