Network Manager
nominated by
the European Commission

EUROCONTROL

ICAO/ACAO A-CDM Workshop

Integrating A-CDM and ATFM

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Oct 2019

Collaborative Management of Flight Updates

- Today, Networks get a non-optimal traffic demand picture (EOBT+ Default Taxi Time)

- To work at its optimum it needs a stable and predictable demand picture.

This avoids;-

- *Applying unnecessary restrictions*
- *Wasting ATFM slots*
- *Overload and traffic bunching*

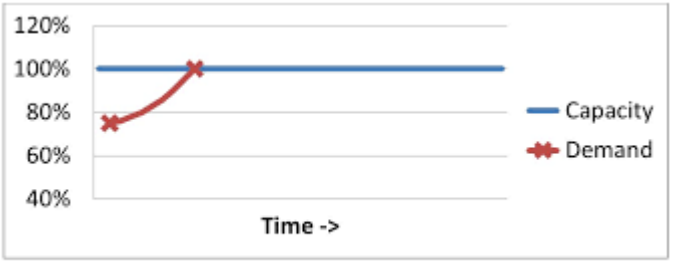
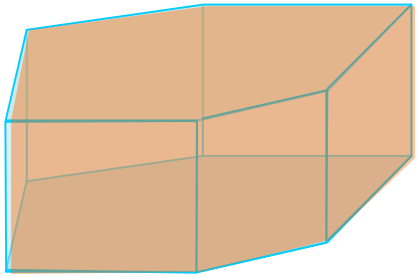


Figure 3a – Demand Improves

Collaborative Management of Flight Updates

ATFM basic principle

Avoiding congestion
Safety Issue



ATFM basic principle

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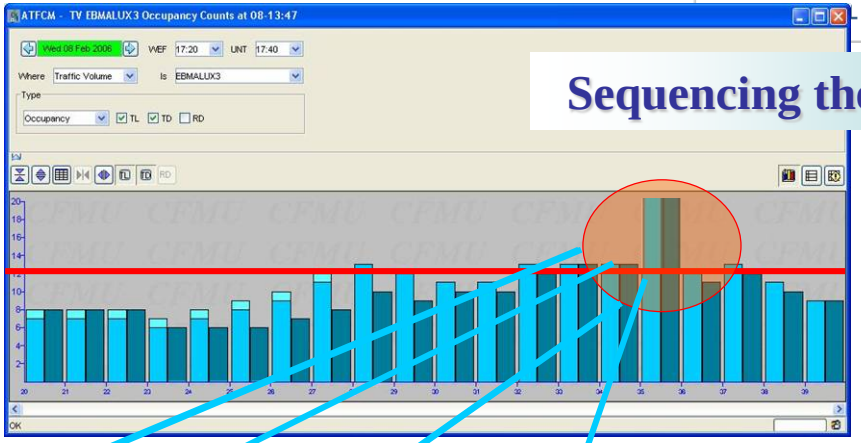
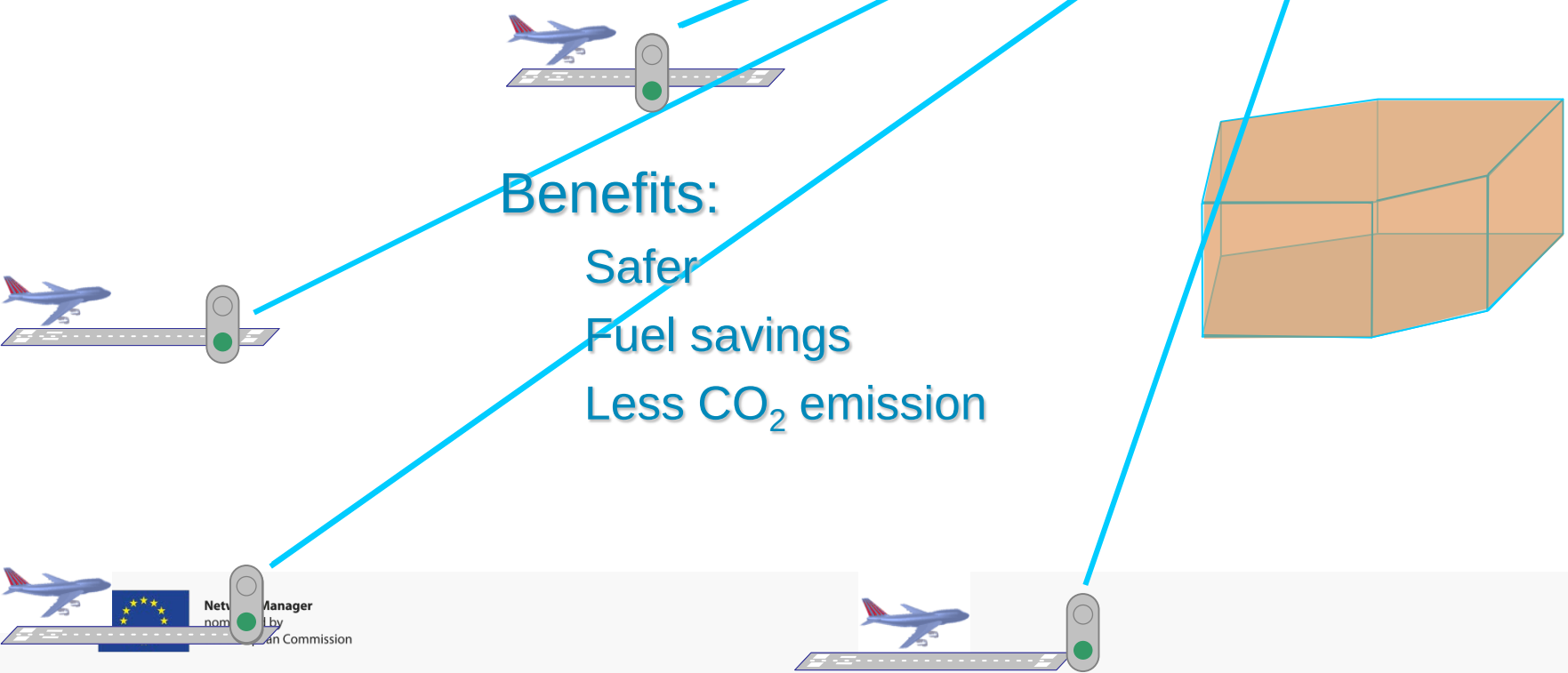


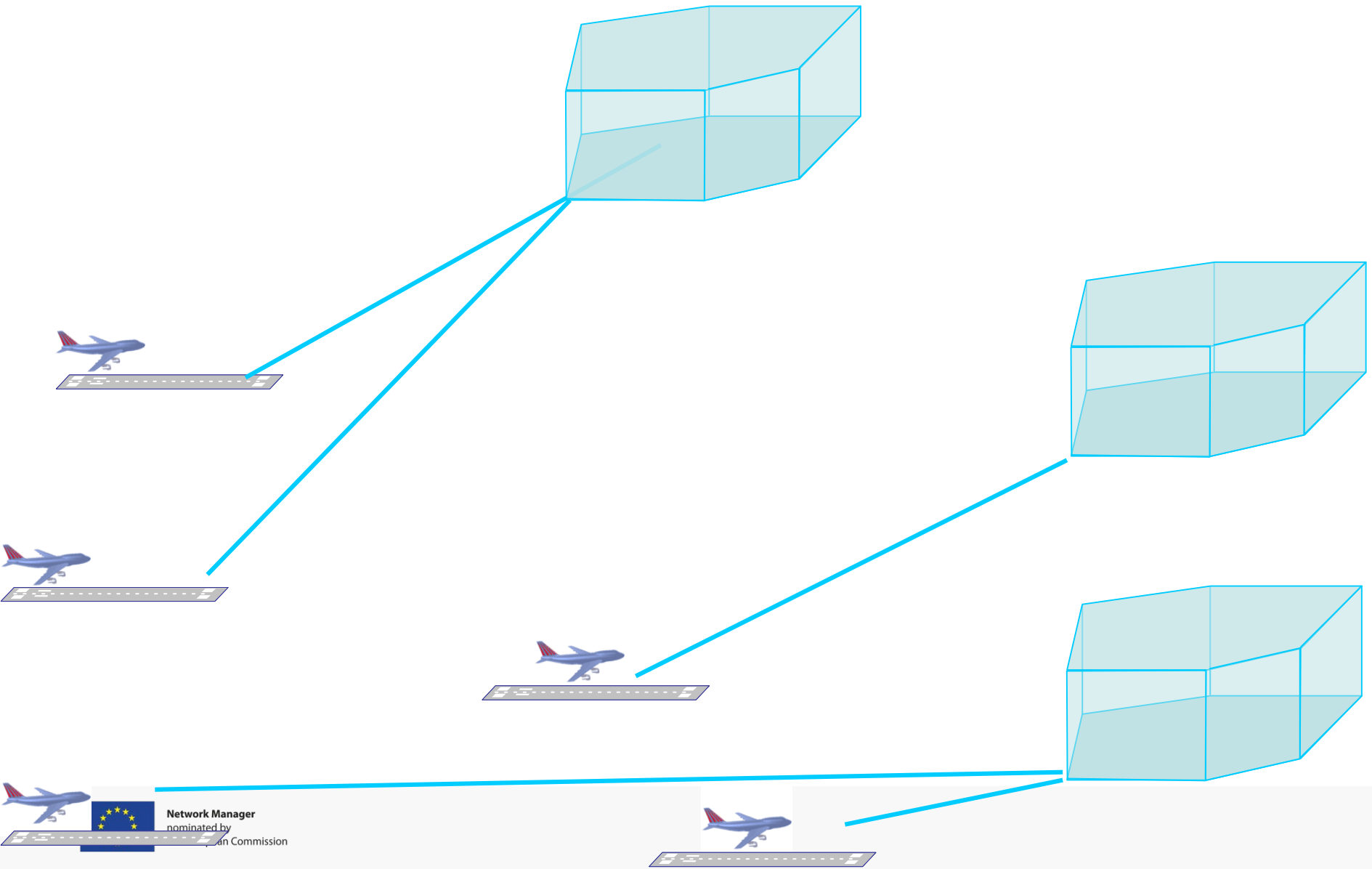
Sequencing the traffic

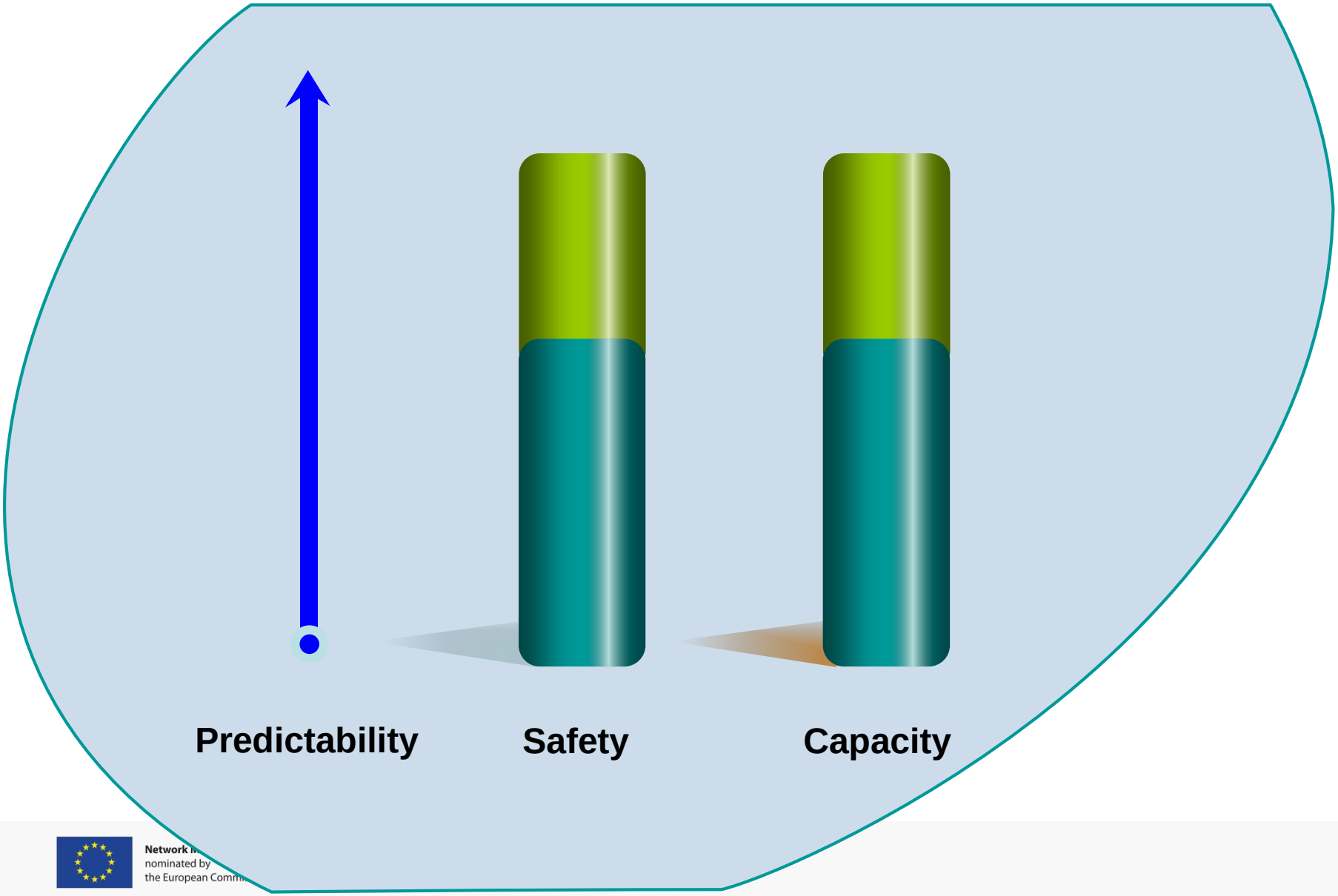


Benefits:

- Safer
- Fuel savings
- Less CO_2 emission

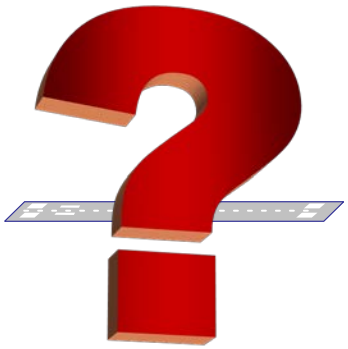
Sequence traffic




Predictability
Safety
Capacity

Predictability

Arrival



Departure

How can Airport CDM help?

DPI (Departure Planning Information)

- The purpose of DPI is to provide Flow Units with the most up to date flight data currently available.

- DPI messages can be triggered by ATC (TWR) systems, by sequencing tools (e.g. DMAN) or by Collaborative Decision Making (CDM) systems at airports.

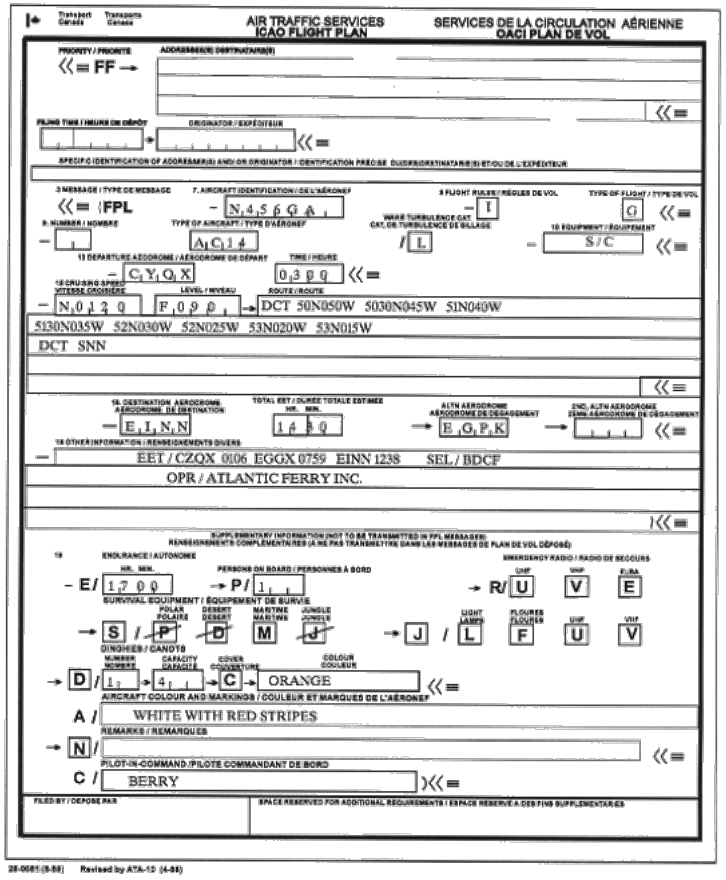
  - <u>The main data to be received via the DPI message are:</u>
    - An accurate estimation of the take-off time (TTOT)
    - The individual taxi-time (EXOT)
    - The SID

DPI Types

DPI type	DPI status	Filing time frame
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

Airport Schedule

AT EOBT-3h


AIR TRAFFIC SERVICES
ICAO FLIGHT PLAN

SERVICES DE LA CIRCULATION AÉRIENNE
OACI PLAN DE VOL

PRIORITY / PRIORITÉ: FF

FILING TIME / HEURE DE DÉPÔT

ORIGINATOR / EXPÉDITEUR

SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND/OR ORIGINATOR / IDENTIFICATION PRÉCISE DU(DES) DESTINATAIRE(S) ET/OU DE L'EXPÉDITEUR

3 MESSAGE / TYPE DE MESSAGE: FPL

7. AIRCRAFT IDENTIFICATION / IDENTIFICATION DE L'AÉRONEF: N456GA

8 FLIGHT RULES / RÈGLES DE VOL: I

TYPE OF FLIGHT / TYPE DE VOL: G

9. NUMBER / NOMBRE: 1

TYPE OF AIRCRAFT / TYPE D'AÉRONEF: A1C14

WAKE TURBULENCE CAT. / CAT. DE TURBULENCE DE SILLAGE: L

10 EQUIPMENT / ÉQUIPEMENT: S/C

13 DEPARTURE AERODROME / AÉRODROME DE DÉPART: CYQX

TIME / HEURE: 0300

15 CRUISING SPEED / VITESSE CROISIÈRE: N0420

LEVEL / NIVEAU: F090

ROUTE / ROUTE: DCT 50N050W 5030N045W 51N040W 5130N035W 52N030W 52N025W 53N020W 53N015W DCT SNN

16 DESTINATION AERODROME / AÉRODROME DE DESTINATION: EINN

TOTAL EET / DURÉE TOTALE EST. HR. MIN.: 1450

ALTN AERODROME / AÉRODROME DE DÉGAGEMENT: EGPK

2ND ALTN AERODROME / 2ÈME AÉRODROME DE DÉGAGEMENT

18 OTHER INFORMATION / RENSEIGNEMENTS DIVERS: EET/CZQX 0106 EGGX 0759 EINN 1238 SEL/BDCF OPR/ATLANTIC FERRY INC.

SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES) / RENSEIGNEMENTS COMPLÉMENTAIRES (À NE PAS TRANSMETTRE DANS LES MESSAGES DE PLAN DE VOL DÉPOSÉ)

19 ENDURANCE / AUTONOMIE: E/ 1700

PERSONS ON BOARD / PERSONNES À BORD: P/ 1

EMERGENCY RADIO / RADIO DE SECOURS: R/ U

SURVIVAL EQUIPMENT / ÉQUIPEMENT DE SURVIE: S/ P

POLAR / POLAIRE: P

DESERT / DÉSERT: D

MARITIME / MARITIME: M

JUNGLE / JUNGLE: J

DINGHIES / CANOTS: J/ L

LIGHT / LAMPE: L

FLUORES / FLUORES: F

UHF: U

VHF: V

ELBA: E

NUMBER / NOMBRE: D/ 1

CAPACITY / CAPACITÉ: 4

COVER / COUVERTURE: C

COLOUR / COULEUR: ORANGE

AIRCRAFT COLOUR AND MARKINGS / COULEUR ET MARQUES DE L'AÉRONEF: A/ WHITE WITH RED STRIPES

REMARKS / REMARQUES: N/

PILOT-IN-COMMAND / PILOTE COMMANDANT DE BORD: C/ BERRY

FILED BY / DÉPOSÉ PAR

SPACE RESERVED FOR ADDITIONAL REQUIREMENTS / ESPACE RÉSERVÉ À DES FINS SUPPLÉMENTAIRES

28-0081 (5-88) Revised by ATA-10 (4-88)

Schedule Off Block Time

Discrepancy between FPL EOBT
and Airport Slot
Scheduled OBT: SOBT
Indicated in the E-DPI

FPL Estimated Off Block Time

(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 >= 5 min.
  - At any change of EXOT>3 min.

Milestones and updates

Updated during the Turn-Round process

(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 >=5 min

Pre-departure Sequencing

Runway

ATC

TSAT update

Congestion

(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 >=5 min

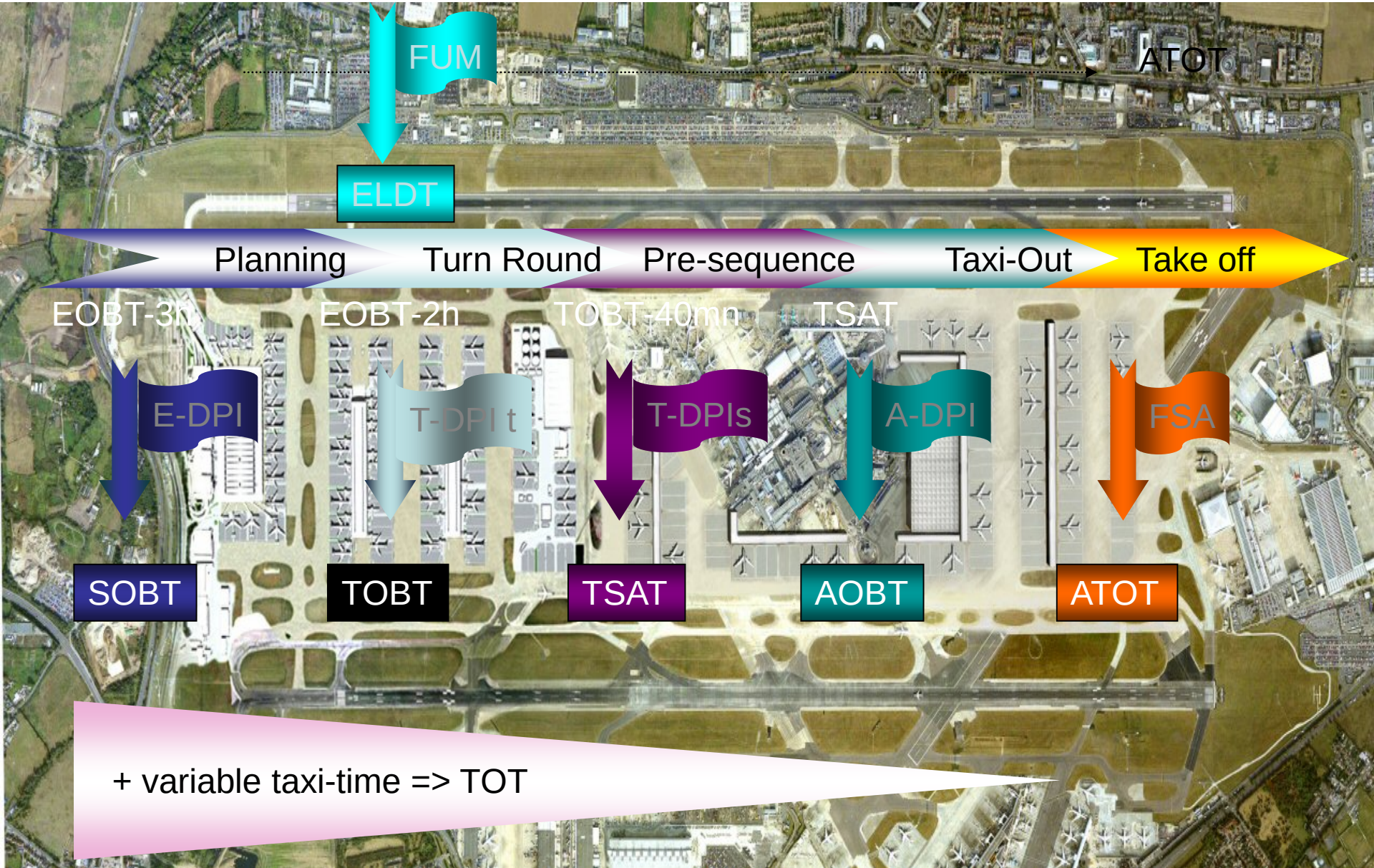
(A-DPI) ATC DPI

- 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= Actual Off-Block + EXOT.
  - SID, Taxi-Time, ARCTYP, REGistration.
- Sent:
  - Between Push-back/Actual Off Block and Take-Off.
  - At general trigger events

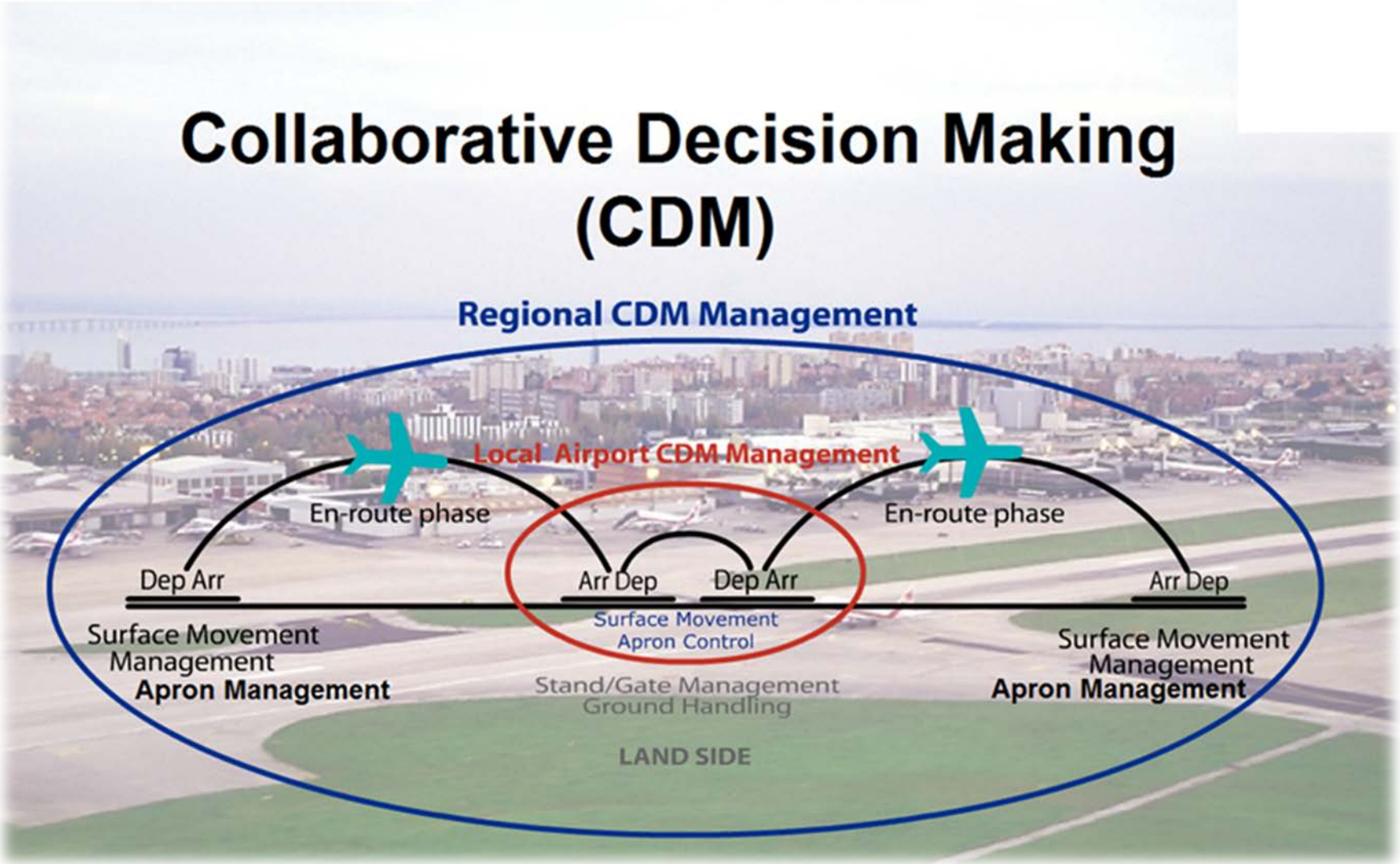
C-DPI (Cancel DPI) and Flight Suspension

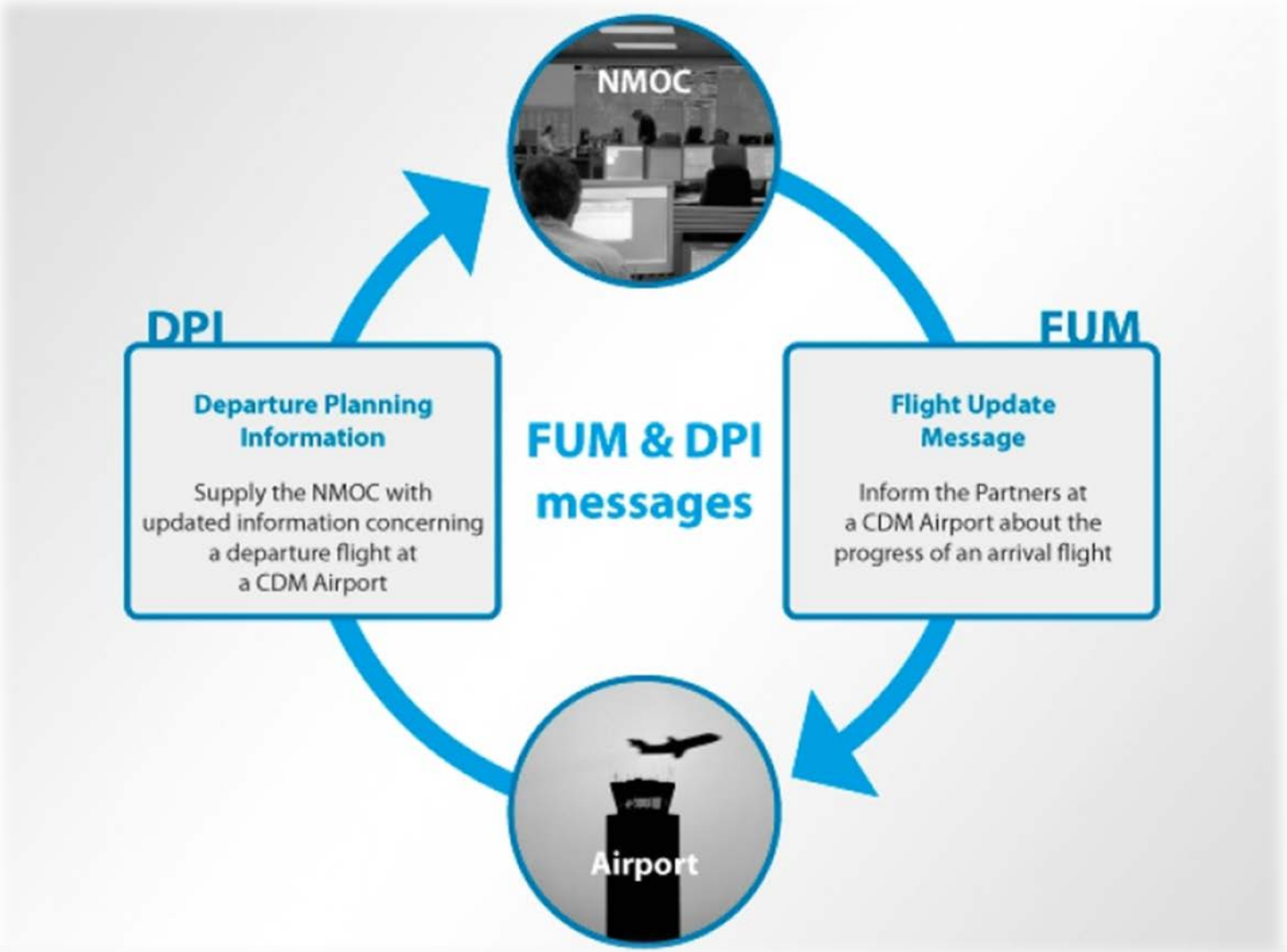
- A C-DPI is sent by the airport either when the CDM system is not working or previous CDM information is not valid anymore. Most used when flight has to return to the stand. (technical reason).
- ETFMS will suspend the flight when a C-DPI is received.
- New data is expected for such a flight and all 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

Departure Planning Information (DPI)

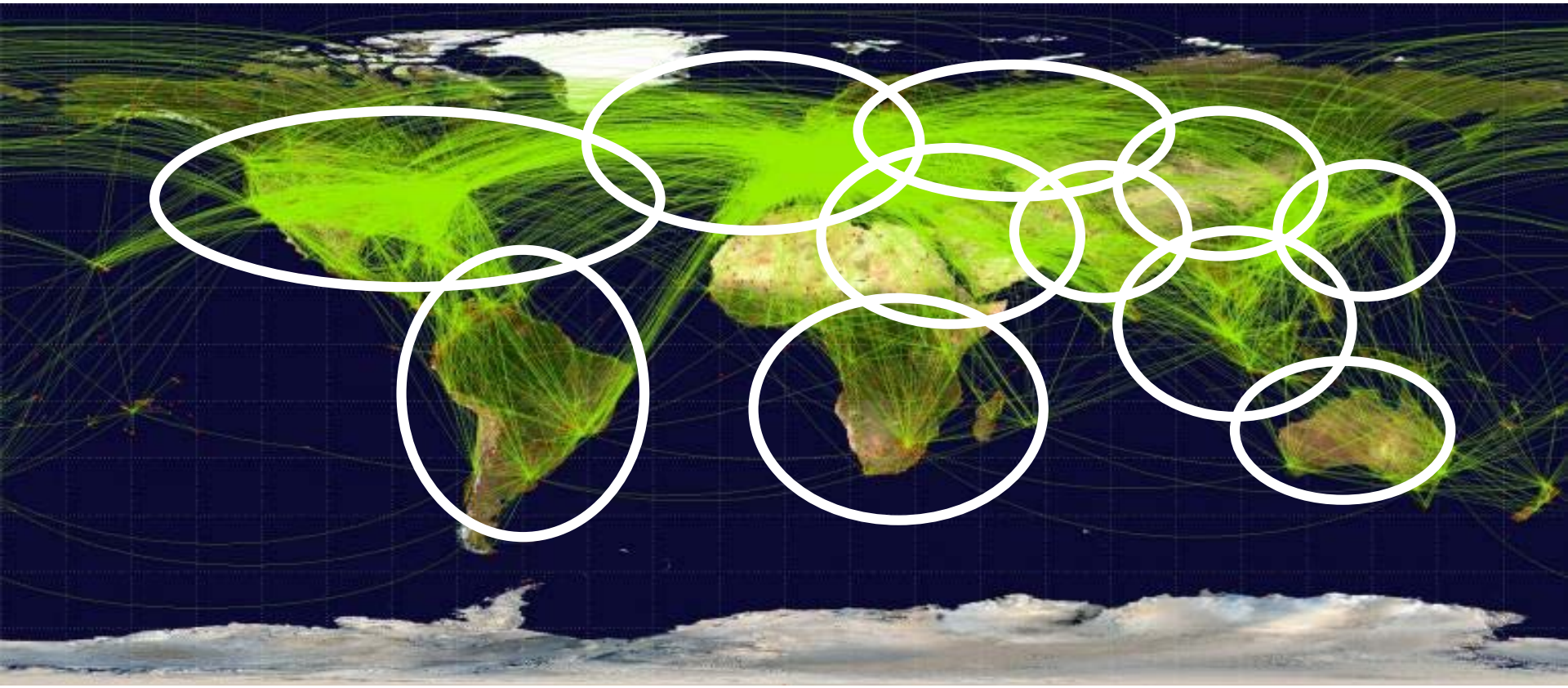


Collaborative Decision Making (CDM)




NMOC
DPI
Departure Planning Information
Supply the NMOC with updated information concerning a departure flight at a CDM Airport
FUM & DPI messages
FUM
Flight Update Message
Inform the Partners at a CDM Airport about the progress of an arrival flight
Airport

The vision for Global ATFM
A set of interlinked operational ATFM regions fed by ACDM



Thank you