Supporting
European
Aviation

EUROCONTROL

Airport - Collaborative Decision Making Information sharing

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FOUNDING MEMBER SESAR JOINT UNDERTAKING

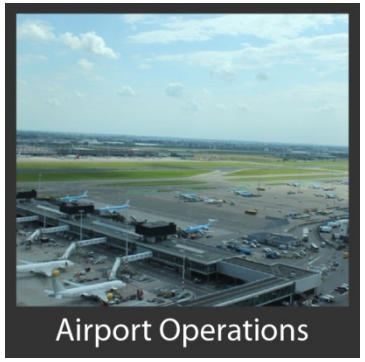
NETWORK MANAGER

Challenges

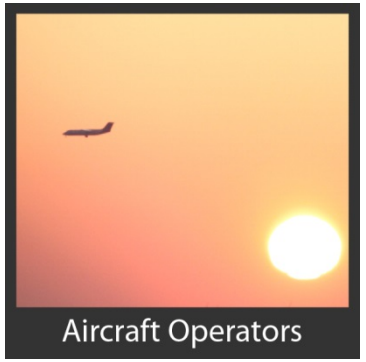
-
  Missing Link [turn-roun
- No complete & common picture on the flight progress
- Partners are dealing with the flight independently from each other
- Conflicting decisions

Airport-CDM is…

Airport CDM



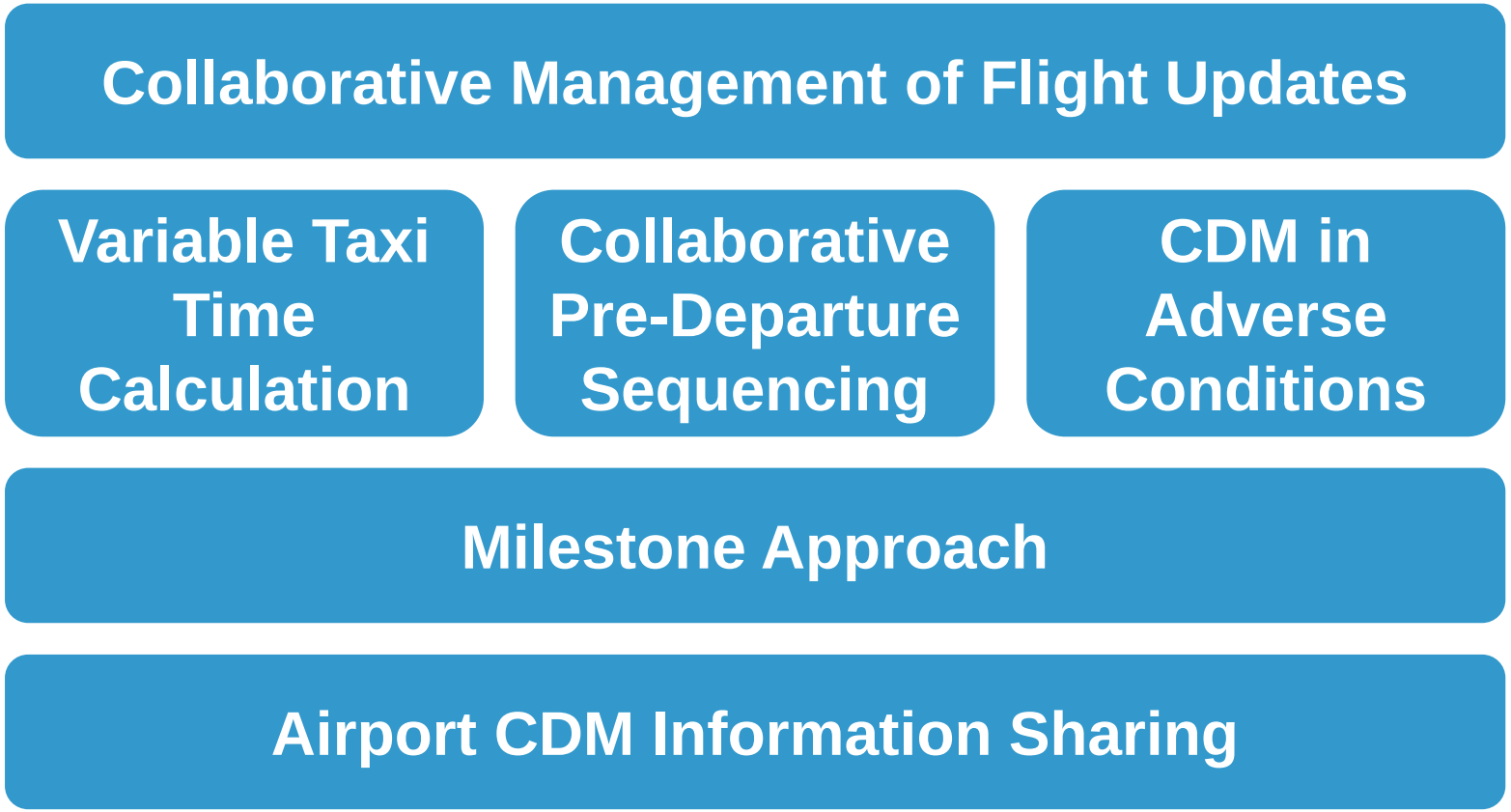
- Improve predictability
- Reduce ground movement costs
- Optimise use of infrastructure & reduce congestion
- Reduce ATFM slot wastage
- Flexible pre-departure planning
- Reduce apron & taxiway congestion



Aim of A-CDM

A-CDM is about people working together, not technology!

A-CDM - Elements



Information Sharing

Late arrival = late departure?

Information Sharing

Foundation for Airport CDM

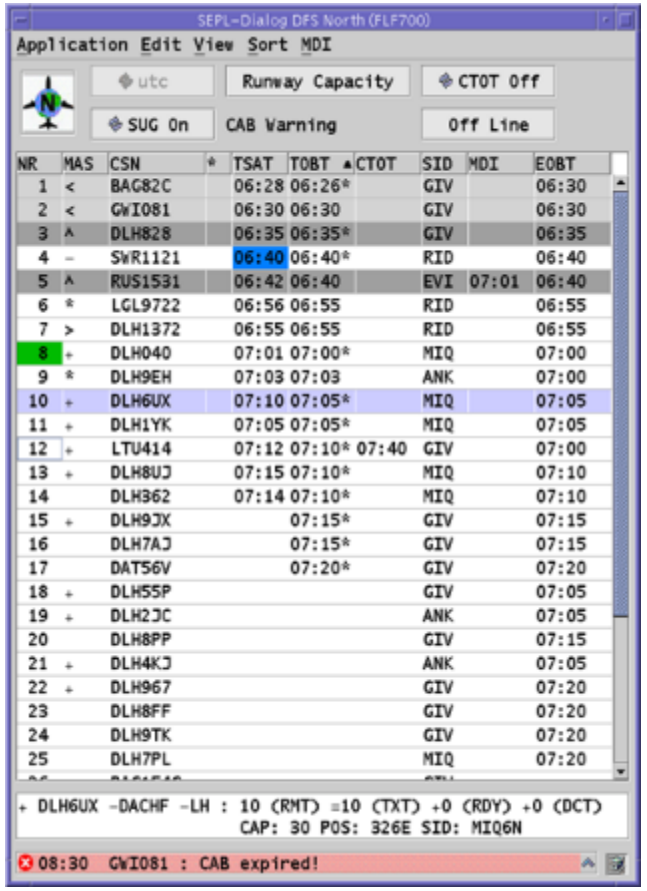
The **right** information

To the **right** people

At the **right** time

Information Sharing

If a realistic departure time is available…



…the information should be shared!

Information Sharing

If an accurate take off time can be estimated…

…the network can benefit from it!

Requirement for Information Sharing

Airport Operator

- Airport slot data
- Stand & gate allocation
- Special events
- Reduction in airport capacity

Network Operations

- Flight plan data
- ATFM departure slots
- Arrival information (Flight Status/ELDT)

ATC

- Real-time updates of LDG
- Taxi times & SIDs
- Runway operational capacity
- A-SMGCS data/radar information

AO/GH

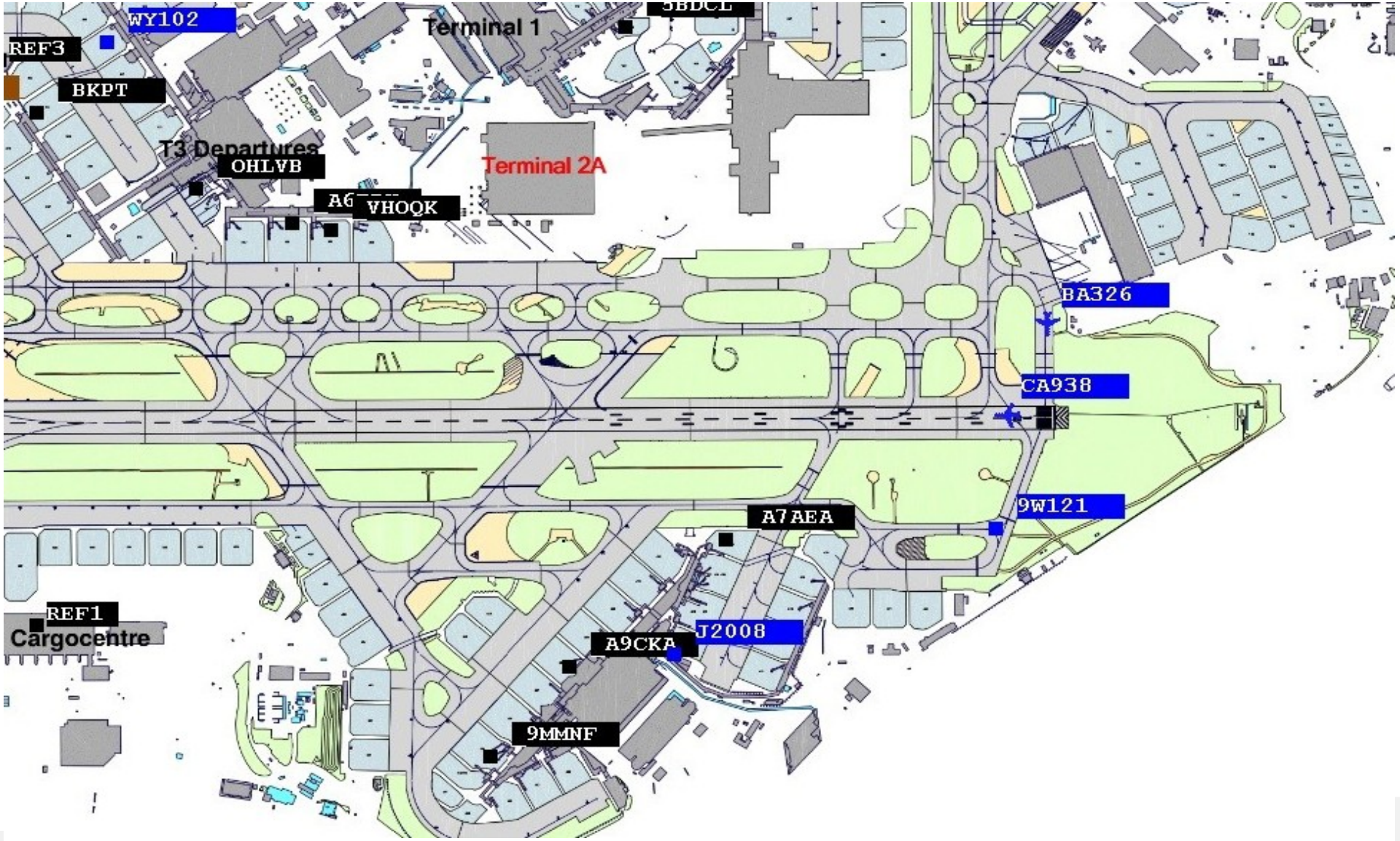
- Flight plans
- Turn-round times
- Priority of flights
- Aircraft registration
- Aircraft movement data

Other service providers

- De-icing companies (de-icing times)
- Met office (met info)

Single Platform

Information Sharing - example



Information Sharing – LHR example

EUROCONTROL

Home | Departures | Turn-round

Auto-Refresh Off Last Updated: 31/3/2016 11:55:25 UTC

Filters

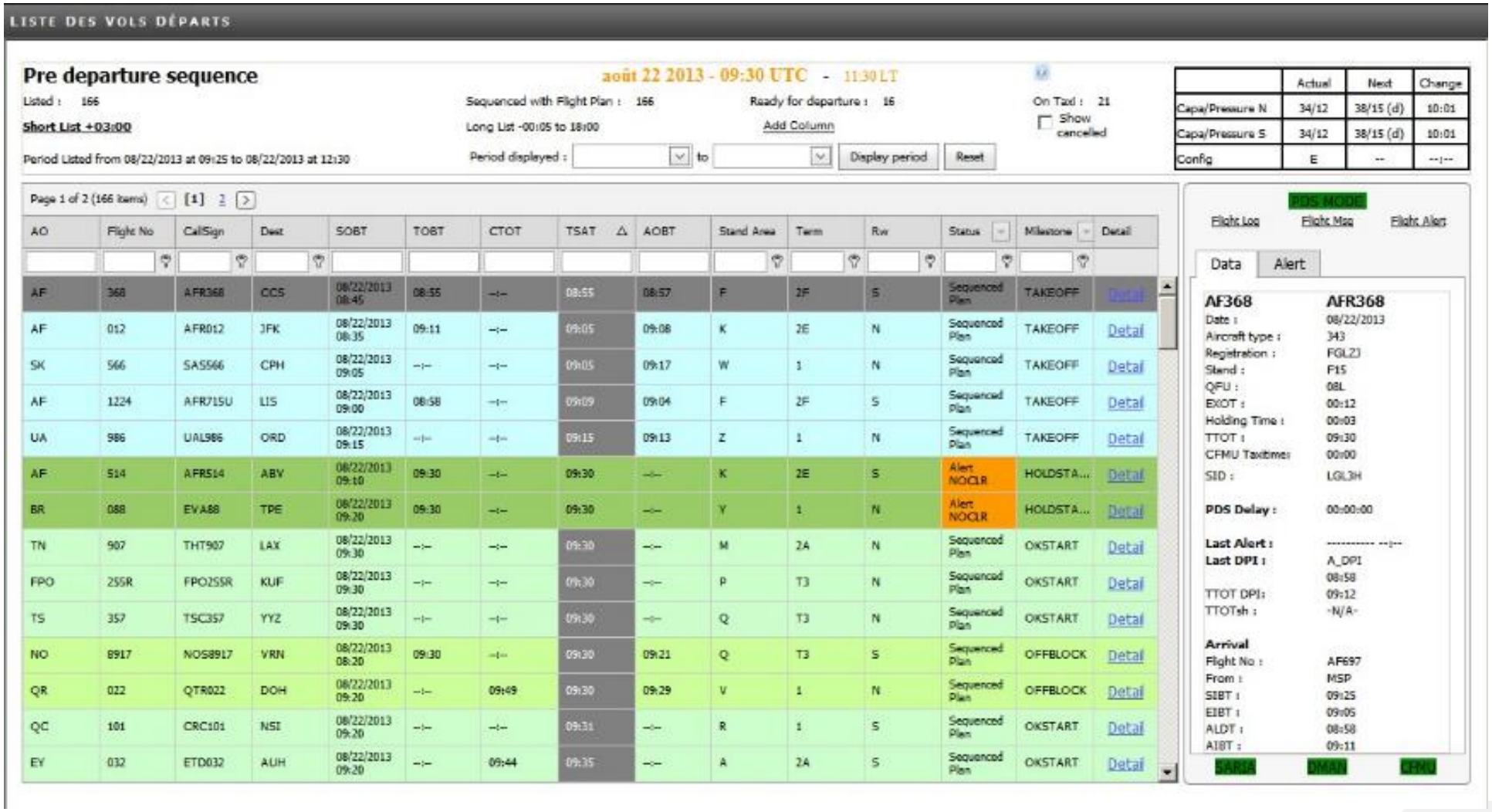
Save Filter Carriers Terminals Has Alert Hide CX & DV

Flights Handlers End Status Time: Current Hide Off-Block Hide Airborne

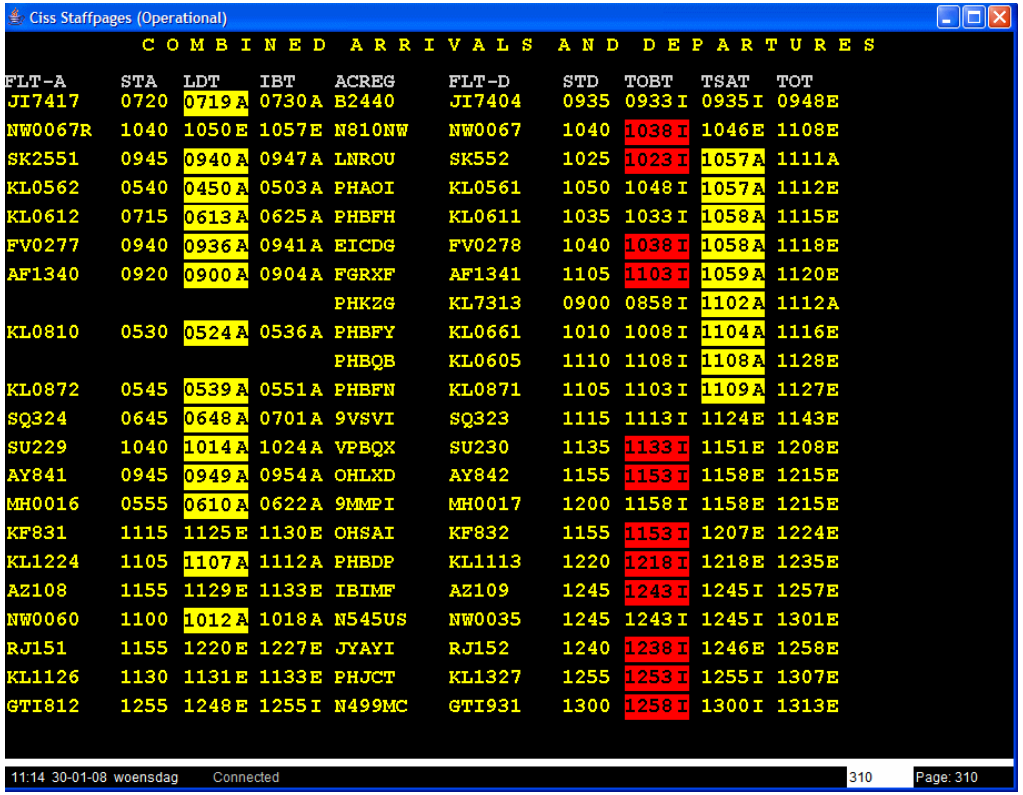
Alert	Flt	Call Sign	Reg	Typ	Std	Status	SOBT	EOBT	TOBT	Strt Req	TSAT	AOBT	TOT	Rwy	Lnk Flt	Dest	SID
	BA1342	SHT20B	GEUPW	A319	508	Taxied	11:45	11:45	11:40 D		11:45	11:47	12:12 T	27R	BA977	LBA	WOBUN3F
	BA9171E	BAW9171	GBNWM	B763	568	Taxied	11:30	11:30	11:40 D		11:49	11:49	12:20 T	27R	BA228	CWL	CPT3F
	BA434	BAW2JA	GEUPH	A319	511	Taxied	10:50	11:50	11:50 D		11:50	11:50	12:14 T	27R	BA919	AMS	BPK7F
	BA816	BAW816	OYJTT	B737	531	Taxied	11:55	11:55	11:55 D		11:55	11:54	12:24 T	27R	BA1479	CPH	BPK7F
	BA766	BAW766	GEUOF	A319	527	Taxied	11:55	11:55	11:55 D		11:55	11:57	12:34 T	27R	BA949	OSL	BPK7F
	BA1416	SHT86Y	GEUUK	A320	505	Taxied	11:55	11:55	11:55 D		11:55	11:55	12:24 T	27R	BA1477	BHD	WOBUN3F
011	BA874	BAW874	GEUUS	A320	351	Gate Closed	11:50	11:50	11:55 D	3	12:00		12:21 T	27R	BA799	BUD	BPK7F
008	BA510	IBE31YC	ECJDM	A321	517	Start Req	10:35	11:13	11:55 D		12:00		12:26 C	27R	IB3160	MAD	MID4F
	ME202	MEA202	T7MRE	A320	329	Taxied	12:00	12:00	12:00 E		12:00	11:58	12:20 C	27R	ME201	BEY	DET2F
	DL029	DAL29	N831MH	B764	412	Start Req	11:50	11:50	11:45 D		12:02		12:21 T	27R	DL018	ATL	CPT3F
	BA632	BAW82GR	GBNWX	B763	556	Start Req	11:55	11:55	11:55 D		12:04		12:32 C	27R	BA903	ATH	DET2F
011	AA081	AAL81	N759AN	B772	305	Gate Closed	11:50	11:50	11:55 D	3	12:04		12:27 T	27R	AA104	DFW	CPT3F
	VS005	VIR5C	GVWKD	A346	317	Start Req	12:00	12:00	11:55 D		12:05		12:27 T	27R	VS010	MIA	CPT3F
	BA169	BAW169	GYMML	B772	535	Gate Closed	12:05	12:05	12:05 D		12:05		12:31 T	27R	BA114	PVG	BPK7F
	AC865	ACA865	CGFAH	A333	141	Gate Closed	12:00	12:00	12:00 E	-2	12:05		12:31 T	27R	AC864	YUL	CPT3F
	AA087	AAL87	N784AN	B772	365	Gate Closed	11:25	12:10	12:00 D	-2	12:07		12:33 T	27R	AA078	ORD	CPT3F
	BA984	BAW984G	GEUXE	A321	532	Gate Closed	12:00	12:00	12:00 D	-2	12:09		12:37 T	27R	BA431	TXL	BPK7F
	QF010	QFA10	VHOQB	A388	301	Gate Closed	12:05	12:05	12:05 E		12:11		12:37 C	27R	QF001	DXB	DET2F
	AC851	ACA851	CGHQY	B788	233	Gate Closed	12:05	12:05	12:05 E		12:14		12:41 T	27R	AC850	YYC	CPT3F
	VS011	VIR11B	GVEIL	A346	322	Start Req	12:05	12:05	12:00 D		12:14		12:38 T	27R	VS012	BOS	CPT3F
	LO282	LOT282	SPLRE	B788	218	Gate Closed	09:15	12:00	12:05 D		12:15		12:42 T	27R	LO281	WAW	BPK7F
	BA035	BAW35	GZBJH	B788	545	Last Call	12:10	12:10	12:10 D		12:15		12:41 C	27R	BA188	MAA	DET2F
	BA177	BAW04A	GCIVV	B744	542	Last Call	12:10	12:10	12:10 D		12:19		12:44 T	27R	BA262	JFK	CPT3F
	BA081	BAW81	GCIVA	B744	303	Last Call	12:20	12:20	12:20 D		12:20		12:50 C		BA054	ACC	GOGSI
	FI451	ICE451	TFISZ	B752	241	Last Call	12:10	12:10	12:10 E		12:21		12:43 T	27R	FI450	KEF	WOBUN3F

Rows: 26-50

Information Sharing – CDG example



Requirements A-CDM ISP HMI



- Clearly link arrivals & departures
- Avoid information overload
- Create consistent look and feel
- Avoid extra display
- Tailor to each partner's needs

Airport database: the best platform to store, process and share Airport CDM information

Exercise

- Explain the following term

EOBT

- What are the rules for updating this information?

- What does the NMOC use EOBT for?

Estimated off-block time. The estimated time at which the aircraft will commence movement associated with departure.
Field 13 of the ICAO FPL

Definitions

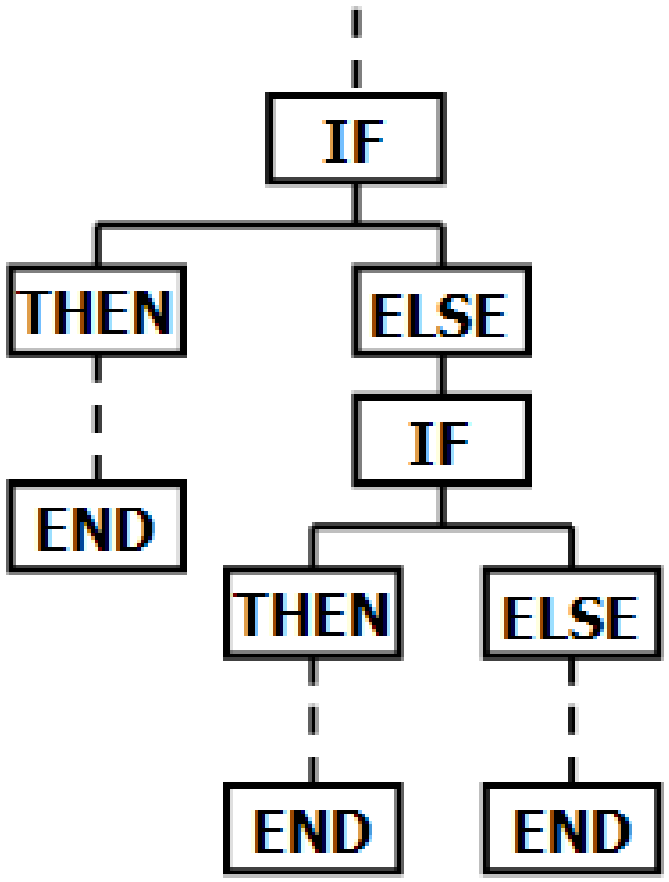
- **Target Off-Block Time (TOBT):**

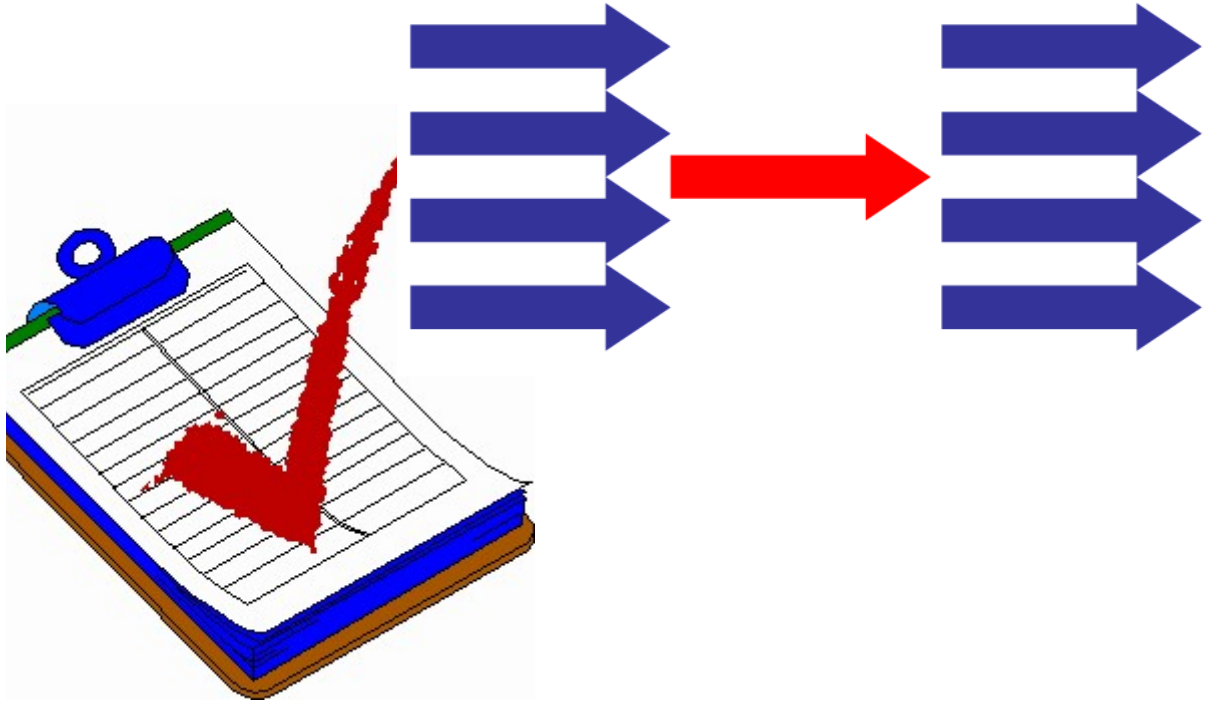
  The time that an **Aircraft Op[illegible]r Ground Handler** estimates that an aircraft will be read[illegible]closed, boarding bridge removed, push back vehicl[illegible]nd ready to start up / push back immediately upon rece[illegible]earance from the Tower

- **Target Start Up Approval Time (TSAT):**

  The time provided by ATC tak[illegible]o account TOBT, CTOT and / or the traffic situation that an[illegible]expect start up / push back approval

Airport CDM Generic Processes and Alerts





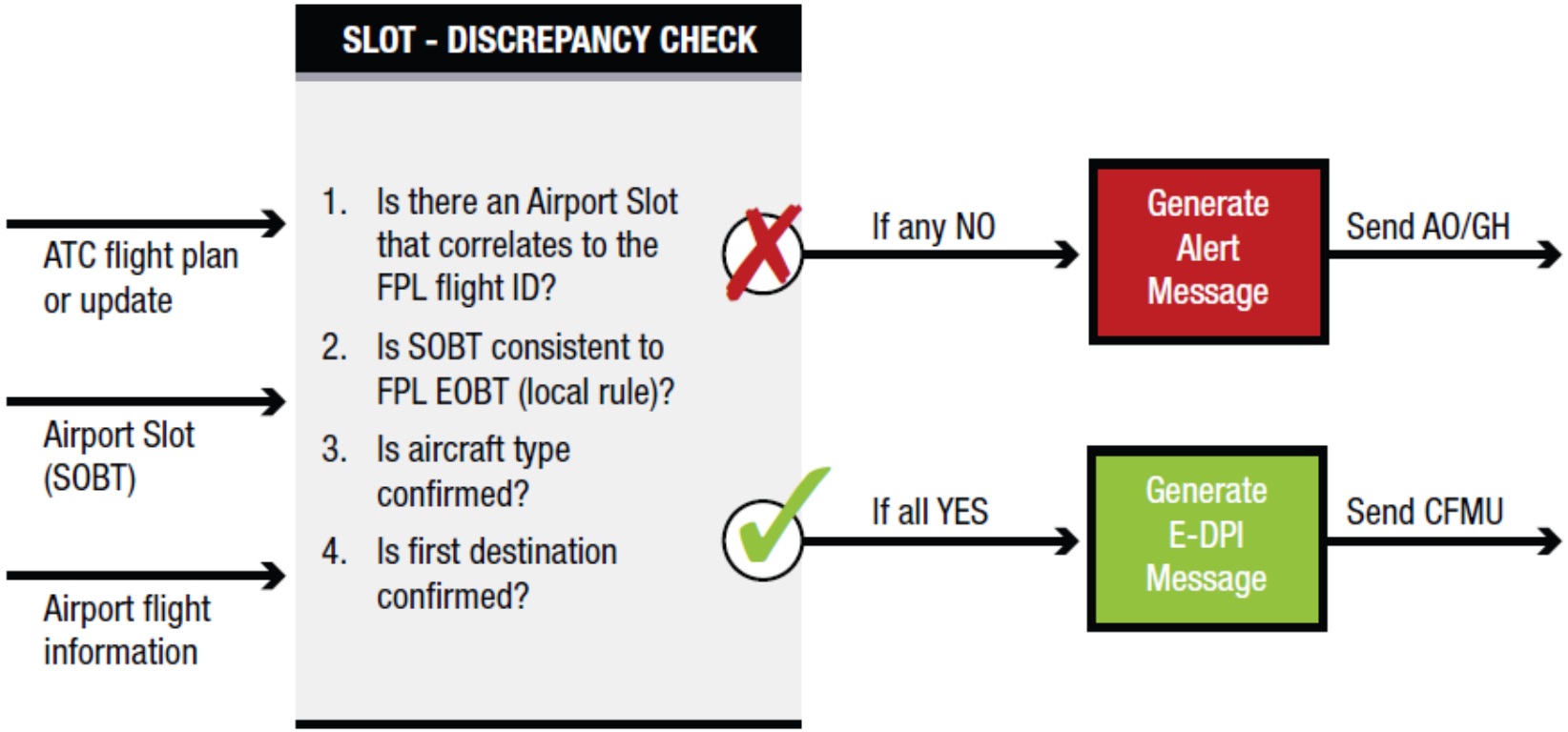
Why do we need processes?

Generic Processes and Output

- **Processes** are time information checks related to Milestone **events**
- **Alerts** are outcome of the processes, and trigger **actions** in case inconsistencies are detected
- **DPI messages** are an outcome of the processes and **inform ATFM** on predicted take-off time

Airport CDM Generic Procedures and Alerts

- **Example:** Milestone 1 process (ATC FPL activated)



Airport CDM Generic Procedures and Alerts

- **Example:**
- **Airport CDM Alert Message – SOBT vs. EOBT Discrepancy (CDM01)**

FLT ID/CDM02/Timestamp

ATC Flight Plan EOBT is not consistent with Airport Slot SOBT. Immediate update of Airport Slot or ATC Flight Plan EOBT needed.

Note: The Airport CDM process will be suspended until reception of your rectification.

Airport CDM Generic Procedures and Alerts

ID	Code	Description	Link with Network Management Operations DPI ERRor Reply Messages*	Applicable on Milestone Process
1.	CDM01	No Airport Slot Available, or Slot already correlated	N/A	1

Codes	Group Description
1-14	Existing allocated codes (basic + 7a, 11a, 12a)
15-29	Flight phase (Departure, Arrival, Diversion, etc.)
30-39	Stand and Gate Management
40-49	De-icing
50+	Local airport codes

10.	CDM10	TOBT Rejected or Deleted	N/A	9-14
11.	CDM11	Flight not Compliant with TOBT/TSAT	N/A	12-13
12.	CDM12	TSAT not respected by ATC	N/A	13
13.	CDM13	No ATC Flight Plan Available	Not existing flight	1-14
14.	CDM14	Automatic TOBT Generation not Possible	N/A	4-9

Information Sharing

- **Benefits**
- **Bringing Partners together**
- ➔ Promotes trust
- **Common situational awareness**
- ➔ Enables monitoring of operations
- ➔ Optimises the use of resources
- **Improved predictability**
- ➔ Improves runway planning
- ➔ Maximises operational efficiency

Information Sharing

- **Key messages**
- **Information sharing** through a transparent platform
- **Link** arrivals, turn-round and departures
- **Monitor progress** of a flight using adapted procedures and alerts – linked to Milestones
- **Target times**:
  - **TOBT** = flight ready to leave the block
  - **TSAT** = flight authorised to move by ATC

Thank you

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