September/Oktober 2020

Winter-Operations in der Saison 2020/2021

FTU-FB

Agenda

Winter Operations…

….in the context of the A-CDM process.

Surface De-Icing

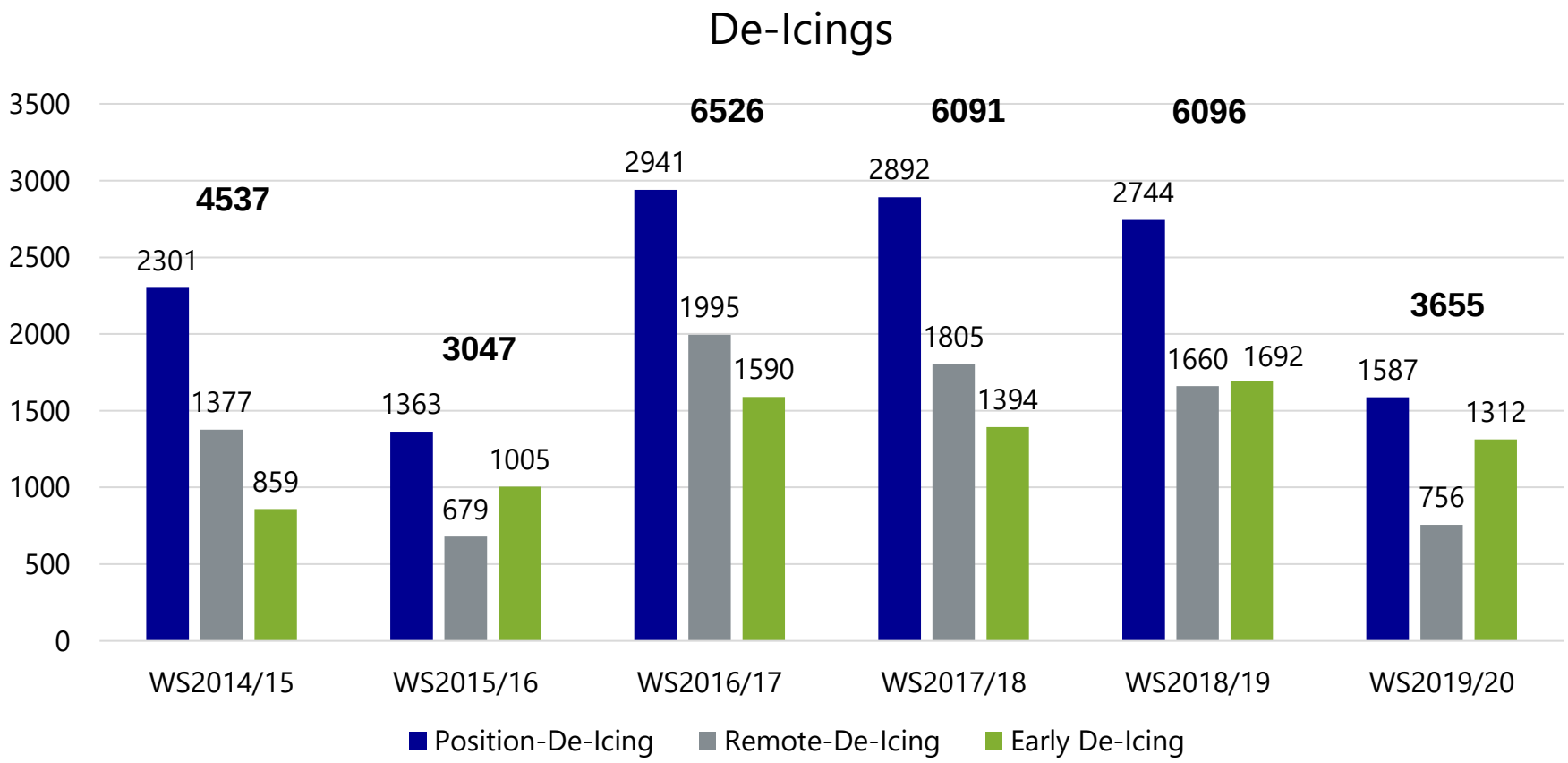
Agenda

Winter Operations…

….in the context of the A-CDM process.

Surface De-Icing

De-Icing season 2014-2020



Weather Forecast 2020/2021

Cold but dry..

Dry December

„After the heat…“

New temperature record?

Warm winter

Winter Season 2020/2021
Seasonal Aircraft De-Icing Plan

Luftfahrzeugenteisungsplan Frankfurt/Main
Wintersaison 2020/2021

Die Inhalte des Dokuments werden fortlaufend durch eine Arbeitsgruppe, bestehend aus Mitgliedern der relevanten Bereiche der Fraport AG, der FRA-Vorfeldkontrolle GmbH, der Deutschen Flugsicherung GmbH (DFS) und N°ICE Aircraft Services & Support GmbH überprüft, angepasst und weiterentwickelt.

Der Luftfahrzeugenteisungsplan Frankfurt/Main wird zur Referenz ebenfalls in englischer Version veröffentlicht.

Das verbindliche Dokument wird vor jeder Wintersaison durch die Fraport AG in deutscher Sprache veröffentlicht.

Frankfurt Aircraft Deicing Plan
Winter Season 2020/2021

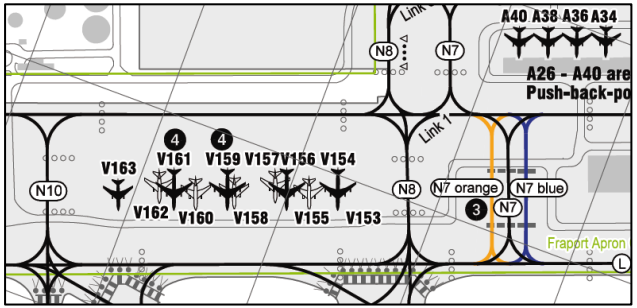
The contents of this plan are continuously reviewed, updated and developed by a working group consisting of members from the relevant departments of Fraport AG, FRA-Apron Control GmbH, German ATC (Deutsche Flugsicherung GmbH - DFS), N°ICE Aircraft Services & Support GmbH.

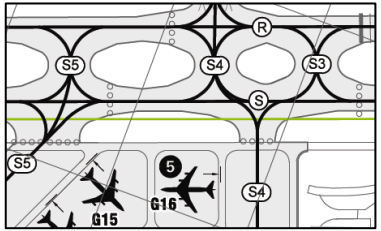
The English Version of the Aircraft Deicing Plan is for reference purposes only. The binding document will be published in the German language before the beginning of every Winter Season by Fraport AG.

AIP AD2 EDDF

Publications:

- Chapter 11: Procedures for the De-Icing of Aircraft
- EDDF 2-5 Aerodrome Chart
- EDDF 2-9 Aerodrome Ground Movement Chart





Supplementary Information

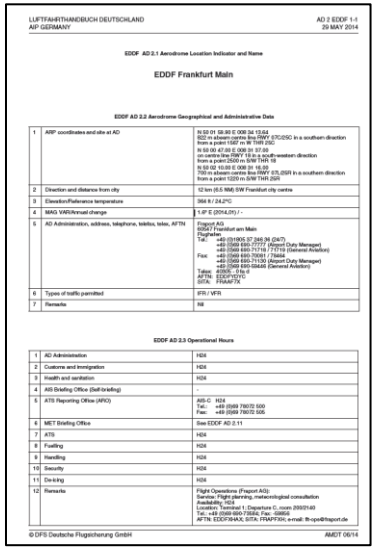
CAT IIIa and CAT IIIb (MNM RVR 75 m) approved. (EDDF AD 1.1)

TWY edge lights not shown.

1 Service road; in use under CAT I operational condition only.

2 De-icing Pad West (DPW)
- Includes DP1 & DP2
- DP2 East and DP2 West max. Code C
- **Pilot stop aircraft on De-Icing Pad in eyeline with holding point marking/lights**
- After De-Icing intersection take-off out of TWY W3 is required

3 4 5 Other areas for additional de-icing
- Designators are published in the seasonal Frankfurt aircraft de-icing plan
- Taxi instructions to the respective area for aircraft de-icing are given by apron control
- Within the area for de-icing aircraft will be guided to the exact de-icing position by a marshaller. Adhere to the instructions given by the marshaller.



LUFTFAHRTHANDBUCH DEUTSCHLAND
AIP GERMANY

AD 2 EDDF 1-1
29 MAY 2014

EDDF AD 2.1 Aerodrome Location Indicator and Name

EDDF Frankfurt Main

EDDF AD 2.2 Aerodrome Geographical and Administrative Data

1	ARP coordinates and site at AD	N 50 01 58.90 E 008 34 15.64 822 m abeam centre line RWY 07C/25C in a southern direction from a point 1587 m W THR 25C N 50 00 47.00 E 008 31 57.00 1200 m abeam centre line RWY 07R/25L in a western direction from a point 2500 m S/W THR 18 N 50 02 10.00 E 008 31 16.00 700 m abeam centre line RWY 07L/25R in a southern direction from a point 1200 m S/W THR 25R
2	Direction and distance from city	12 km (6.5 NM) SW Frankfurt city centre
3	Elevation/Reference temperature	364 ft / 24.2°C
4	MAG VAR/Annual change	1.8° E (2014,01) / -
5	AD Administration, address, telephone, telefax, telex, AFTN	Fraport AG 60547 Frankfurt am Main Flughafen Tel: +49 (0)1805 37 246 36 (24/7) +49 (0)69 690-77777 (Airport Duty Manager) +49 (0)69 690-71718 / 71719 (General Aviation) Fax: +49 (0)69 690-70681 / 70682 +49 (0)69 690-71130 (Airport Duty Manager) +49 (0)69 690-70645 (General Aviation) Telex: 410505 - 0 fra d AFTN: EDDFYSYO SITA: FRAAF7X
6	Types of traffic permitted	IFR / VFR
7	Remarks	Nil

EDDF AD 2.3 Operational Hours

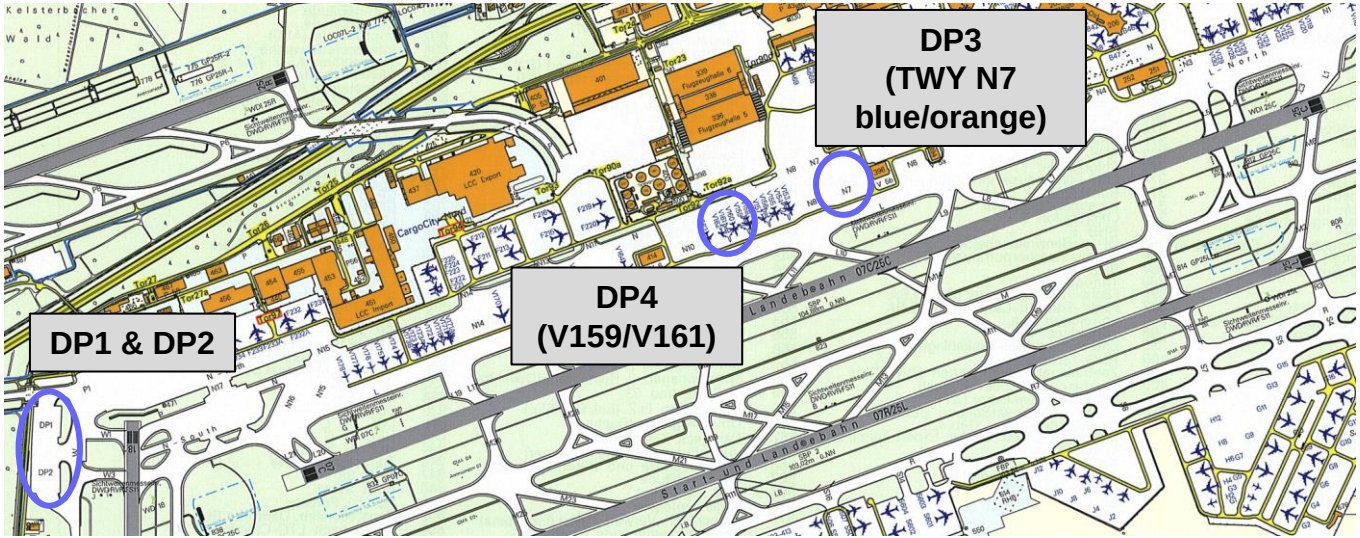
1	AD Administration	H24
2	Customs and immigration	H24
3	Health and sanitation	H24
4	AIS Briefing Office (Self-briefing)	-
5	ATS Reporting Office (APIO)	AIS-C H24 Tel: +49 (0)69 780/72 500 Fax: +49 (0)69 780/72 506
6	MET Briefing Office	See EDDF AD 2.11
7	ATS	H24
8	Fuelling	H24
9	Handling	H24
10	Security	H24
11	De-icing	H24
12	Remarks	Flight Operations (Fraport AG): Service: Flight planning, meteorological consultation Availability: H24 Location: Terminal 1, Departure C, room 2002/140 Tel.: +49 (0)69-690-73556; Fax: -50664 AFTN: EDDFXAAX; SITA: FRAFX9X; e-mail: fb-ops@fraport.de

© DFS Deutsche Flugsicherung GmbH

AMDT 06/14

Aircraft De-Icing Pads

De-Icing Pads (DPD) for Remote De-Icing (ICE = R)



DP1	DP2E	DP2C	DP2W	DP3	DP4	DP[illegible]
Code F	**Code C**	**Code F**	**Code C**	**Code C**	**Code E (2-Strahler)**	**Code C**

Provider's Capacity Allocation Matrix

Ops Category	Operational Phase	Vehicles on Position	Vehicles on DPs	Vehicles Total	Open DPs	Remarks
0.	Basic contingency	2	0	2	-	OAT >= +3°C or higher
1.	Pre de-icing	2-10	0	up to 10	-	No precipitation – OAT +1°C or lower, additionally in agreement with airlines; hoarfrost buildup overnight on aircraft possible – concerns departures until 08:00 LT
2.	Frost	2-10	8-12	up to 22	DP1 and DP2 (Alternative DP2 + DP4)	OAT +0°C or lower all day, cloudless weather, low to middle humidity hoarfrost buildup on aircraft possible (possible necessity for de-icing/anti-icing of long haul flights)
3.	Small contingency	2-14	8-16	up to 30	DP1 and DP2 DP3 or DP4 if needed due to actual day`s weather	Weather conditions such as frost (category 2) OAT >+ 0°C precipitation (SNRA, RASN,SG, FZFG) probability >/= 10% to 29% high humidity frost and ice buildup on aircraft probable
4.	50% contingency	2-25	15-19	up to 44	DP1 and DP2, DP3 DP4 if needed due to actual day`s weather	Any kind of precipitation (SN/FZFG/FZRA) >/=30% to 59% probability (or PROB40 in last TAF)
5.	100% contingency	2-33	19	up to 52	DP1, DP2, DP3, DP4	Any kind of precipitation (SN/FZFG/FZRA) >/= 60% to 90% probability (or PROB40 in last TAF)

Dispatch and Aircraft De-Icing Center (4:00 a.m. until end of operation)

Agenda

Winter Operations…

….in the context of the A-CDM process.

Surface De-Icing

Airport CDM@FRA
A-CDM elements and partners

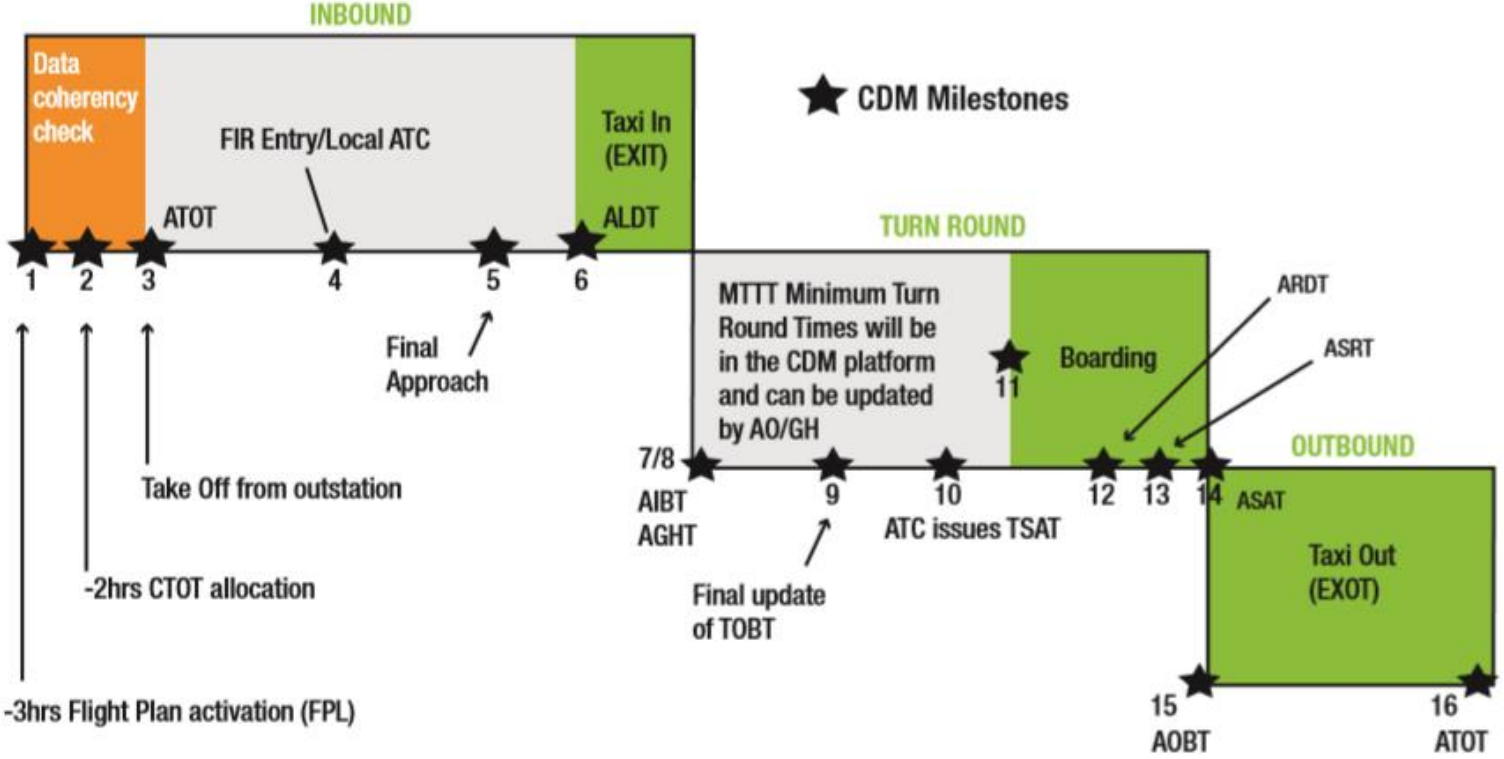
The A-CDM procedure is European standard

- Optimising the collaboration of the airport´s partners
- Comprising the time period between EOBT-3hrs and take off

Concept Elements

- Milestone approach (ACDM Status)
- Information sharing (CSA-Tool)
- Collaborative management of flight updates (FUM &DPI)
- Variable taxi times (EXOT)
- Pre-departure sequence (TSAT)
- **Adverse conditions**

Airport CDM@FRA
Milestones



Airport CDM@FRA
In Germany

FBB FLUGHAFEN BERLIN BRANDENBURG

Fraport

ACDM GERMANY

DFS Deutsche Flugsicherung

Düsseldorf Airport DUS

Hamburg Airport

Flughafen Stuttgart

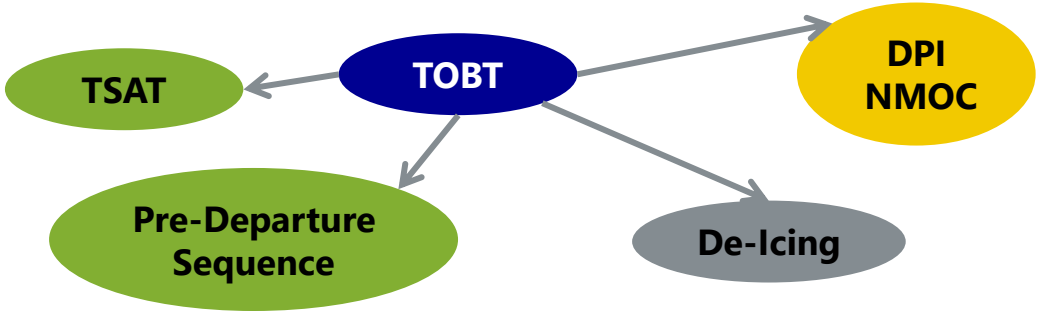
Airport CDM@FRA
„Target Off-block Time“

Definition TOBT:

The point in time at which the ground handling process, except push-back and de-icing, are finished
TOBT = forecast of "Aircraft ready"

AO/Airline responsibility

The TOBT is the basis for the following processes:



Airport CDM@FRA
„TOBT/TSAT/Cockpit – Problems“

We observe that:

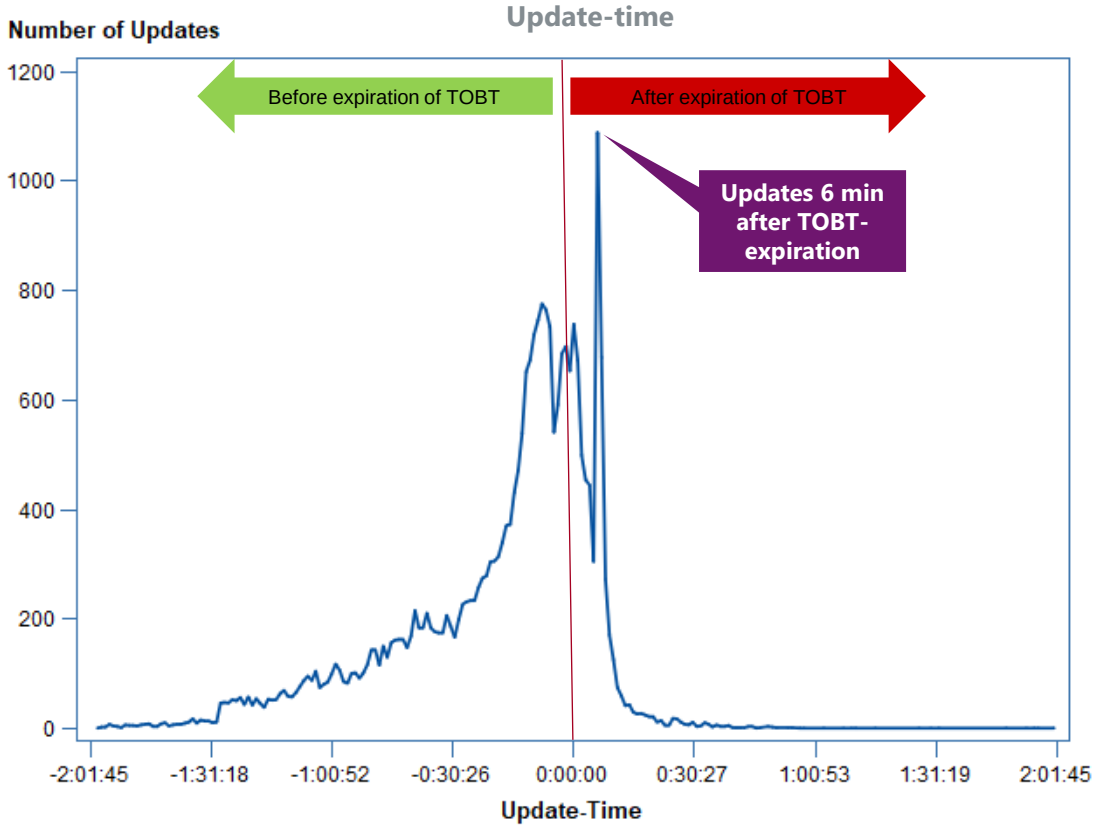
- **TOBTs are not updated at all or too late.**

  The TOBT is an important input variable for TSAT-calculation (Pre-Departure Sequence) and all following processes!

- **Start-up and Off-Block „Request“ are not sent in the given frame as a result of the bad TOBT-Quality.**

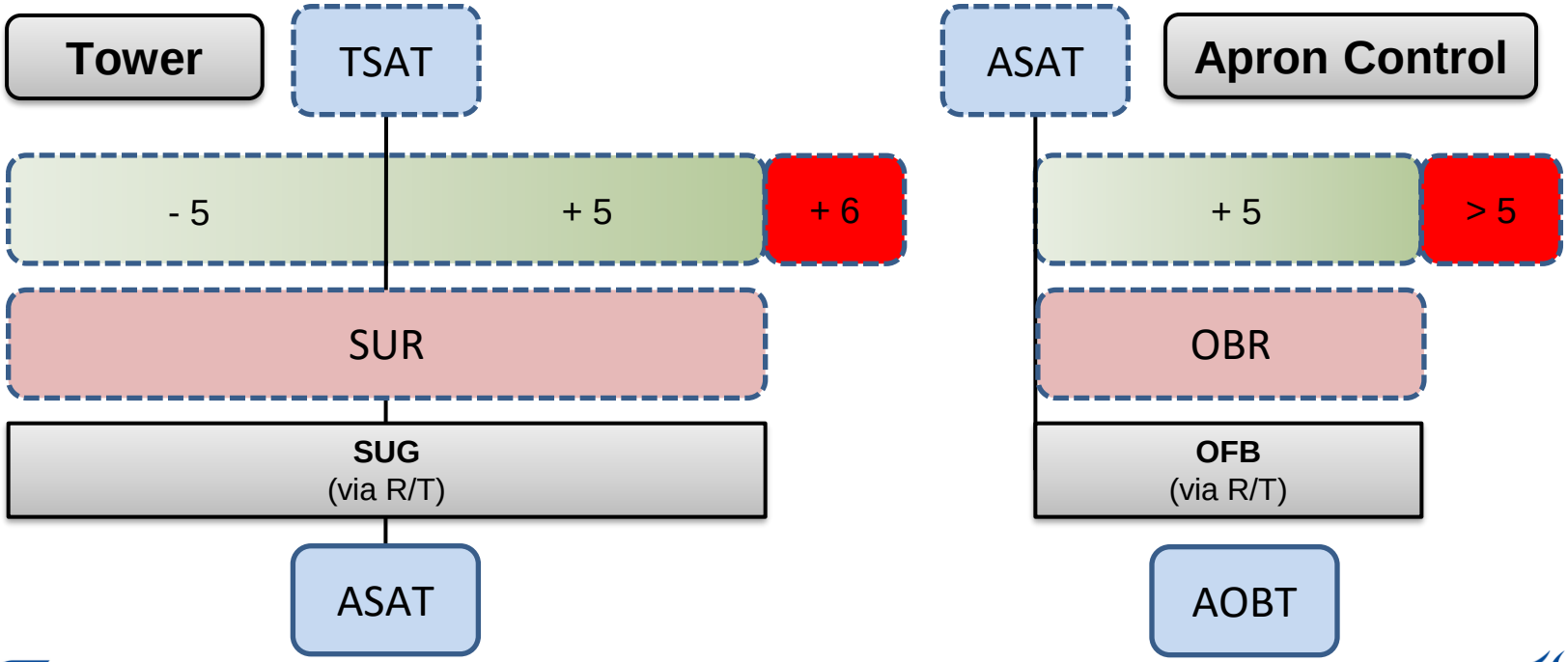
  For this reason, scheduled capacities at the airports and in European airspace cannot be used!

Airport CDM@FRA
TOBT-Updates

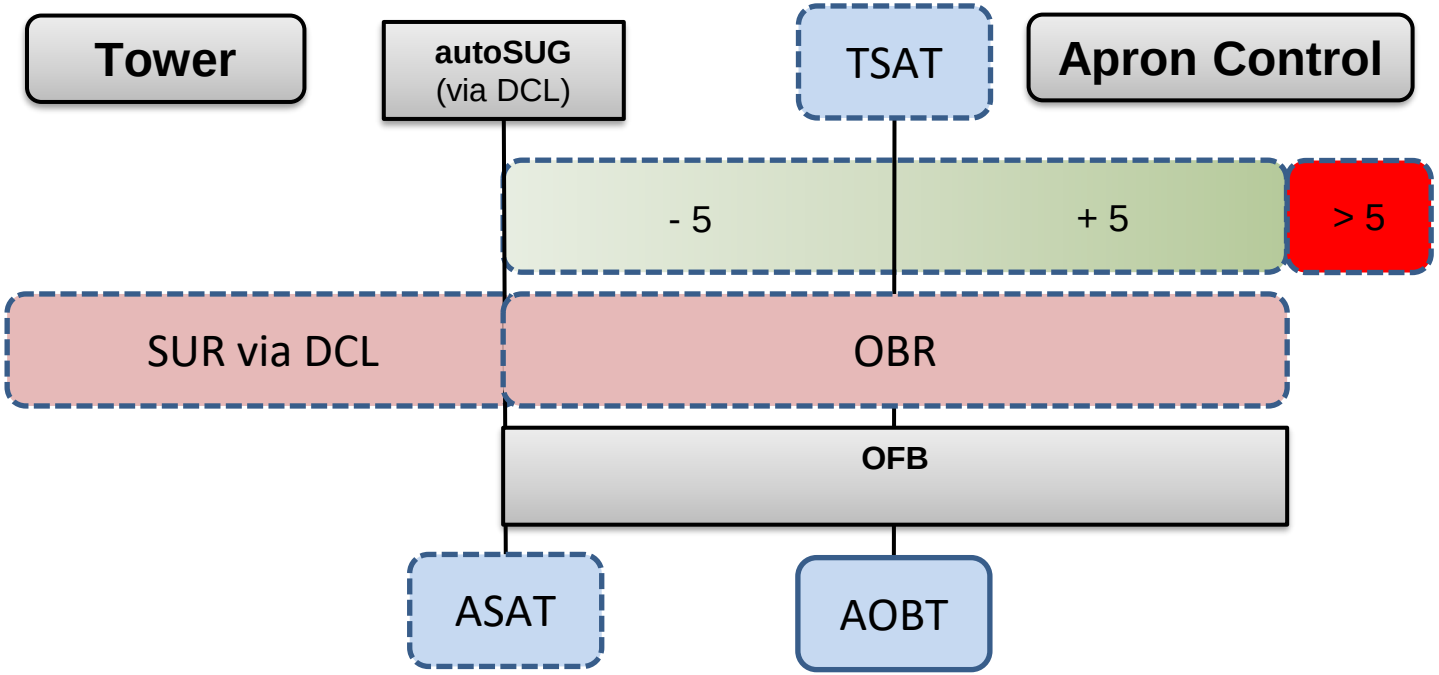


Summer 2020

Airport CDM@FRA
Start-up and Off-Block Procedure (R/T)



Airport CDM@FRA
Start-up and Off-Block Procedure (DCL)

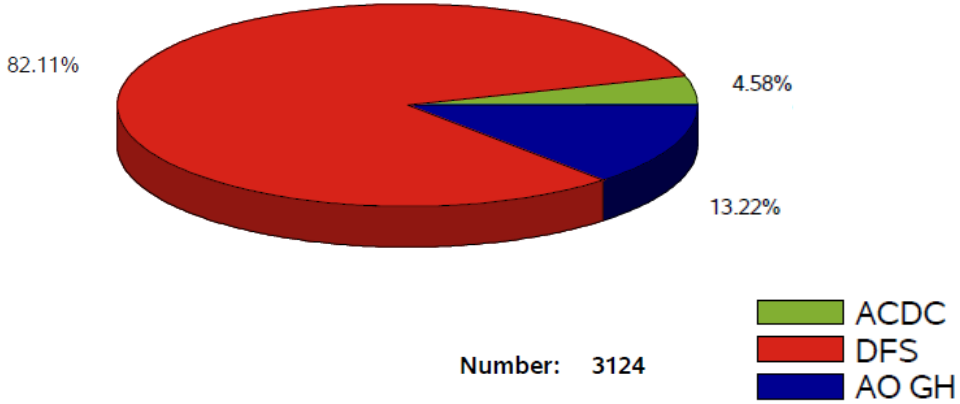


Airport CDM@FRA
Start-up and Off-Block Procedure (DCL)

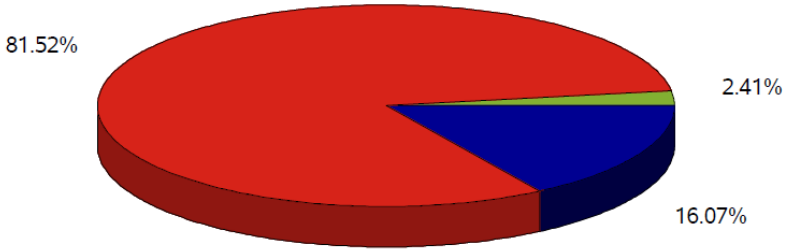
Summer 2020

Winter 2019/2020

TOBT - Deletions FRA total



Number: 3124



Number: 5023

Departures: >40.000
TOBT-deletions TWR: >2500 (**approx. 6,3%**)

Departures: approx. 90.000
TOBT-deletions TWR: approx. 4100 (approx. 4,5%)

Summer 2019: approx. 7,0%

Airport CDM@FRA
„How is the TSAT generated?“

A-CDM responsibility

Definition of TSAT:

The Target Start up Approval Time (TSAT) is the point in time calculated by the Airport CDM sequence planning system at which the start-up approval can be expected.

TOBT -40 min. „SEQ“ → Calculation/ Publication → **TSAT**

TSAT for non regulated flights:

TOBT 1200	+	EXOT 15	=	**TTOT 1215**
TTOT 1230	-	EXOT15	=	**TSAT 1215**

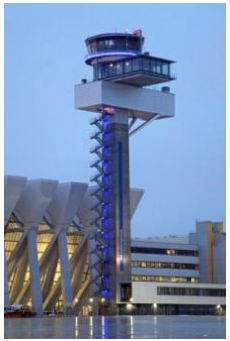
TSAT for regulated flights:

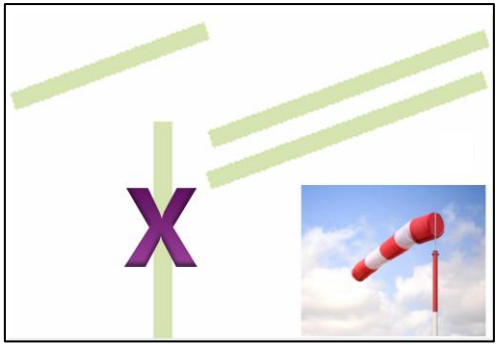
CTOT 1300	-	EXOT 15	=	**TSAT 1245**

Airport CDM@FRA
„Runway capacity"

Dependencies:

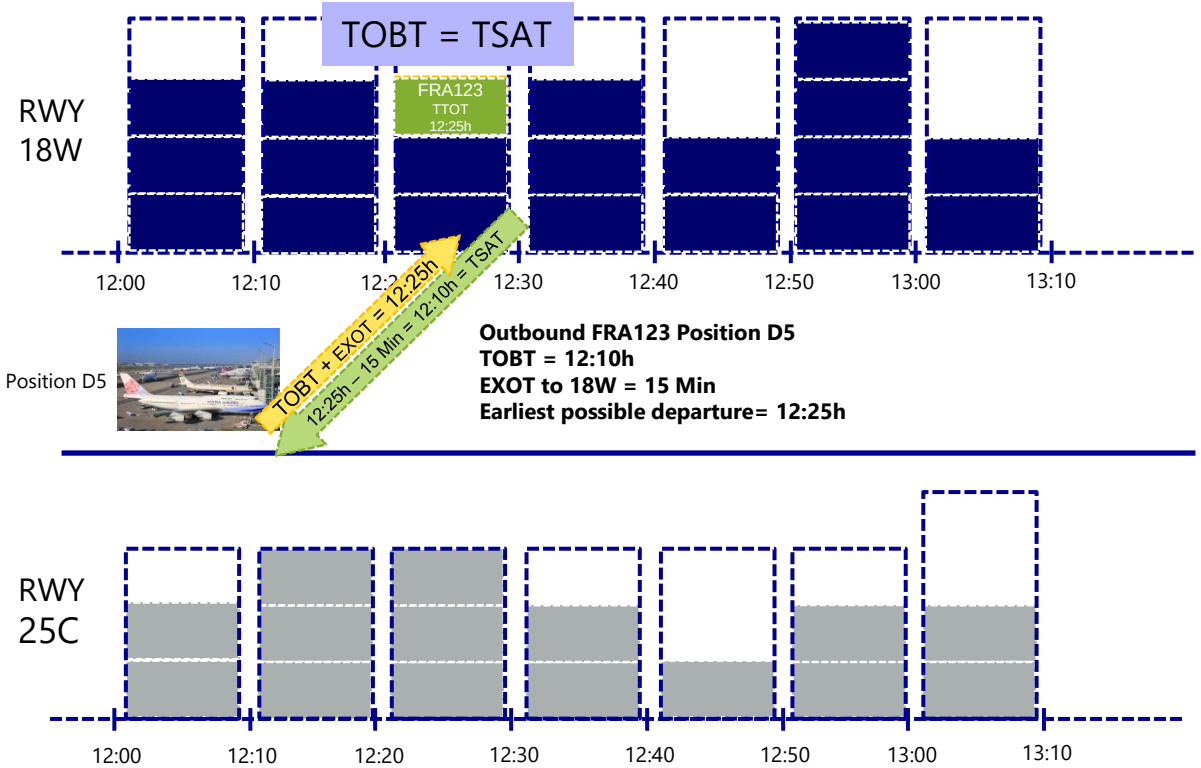
- **Operating direction: 25 or 07**
- **Available runways**
- **Weather or operations mode**

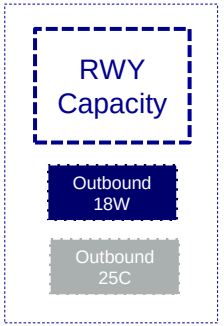




Airport CDM@FRA
„Pre-Departure Sequencer“

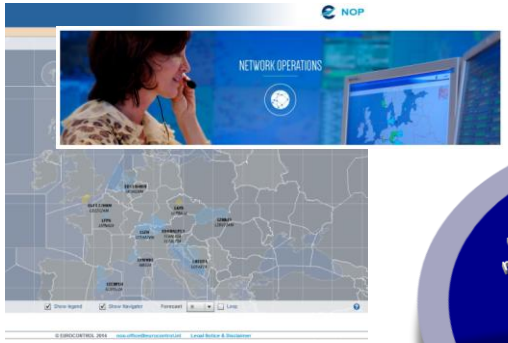
No restrictions (TOBT = TSAT)

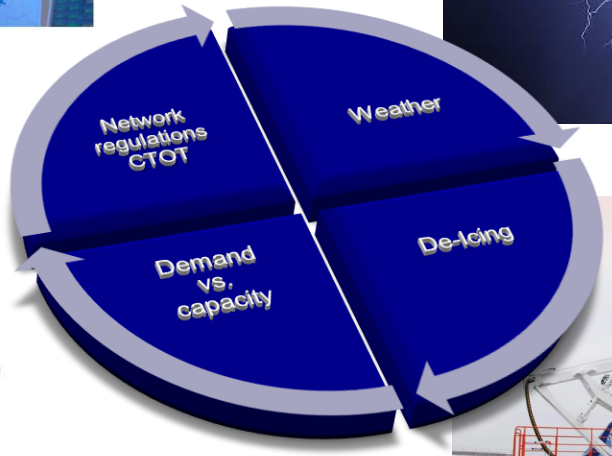


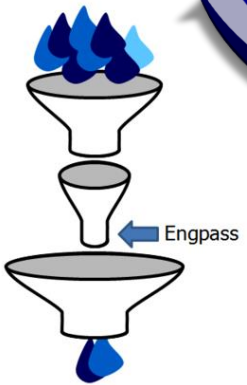


Airport CDM@FRA
„Airport restrictions“

Restrictions (TOBT ≠ TSAT)!

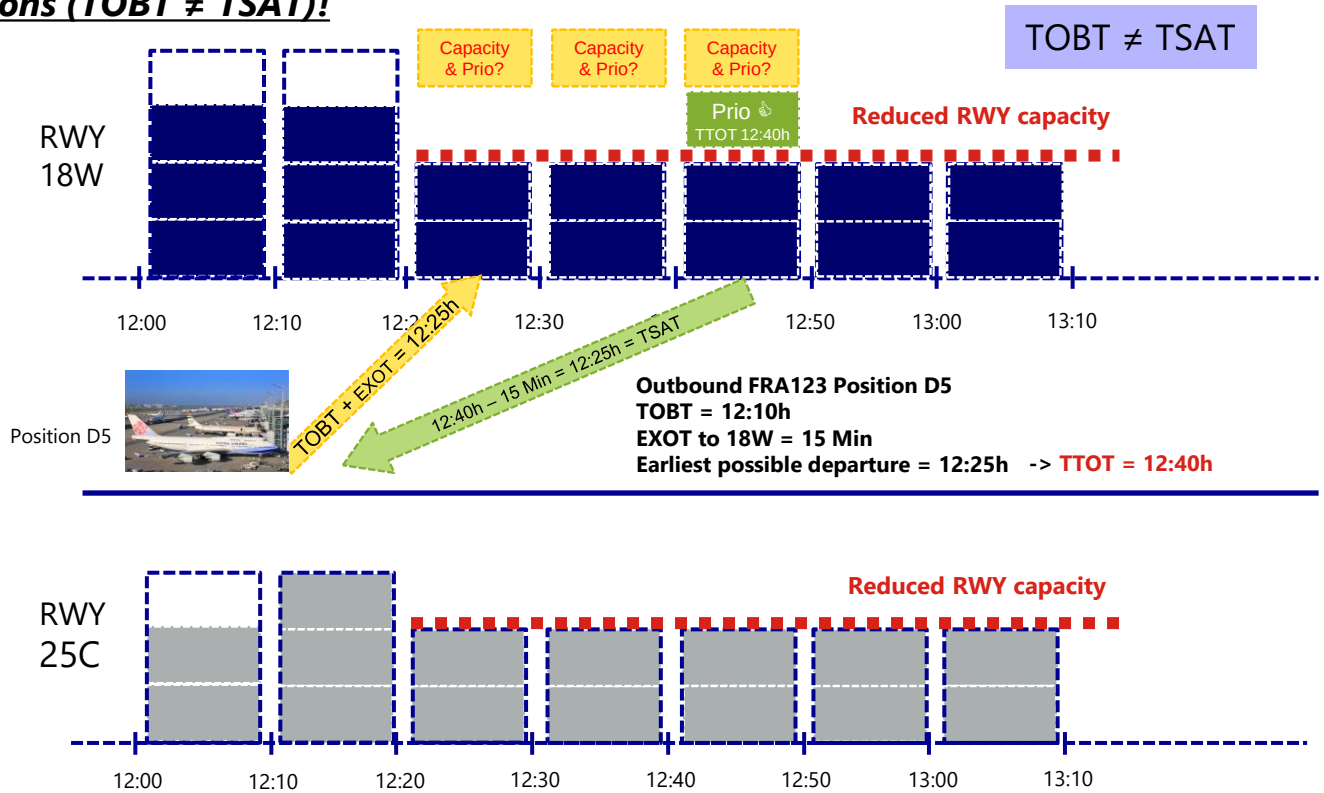


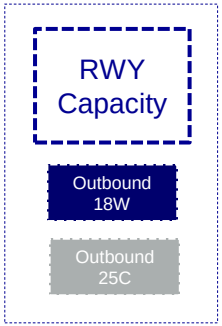




Airport CDM@FRA
„Pre-Departure Sequencer“

Restrictions (TOBT ≠ TSAT)!

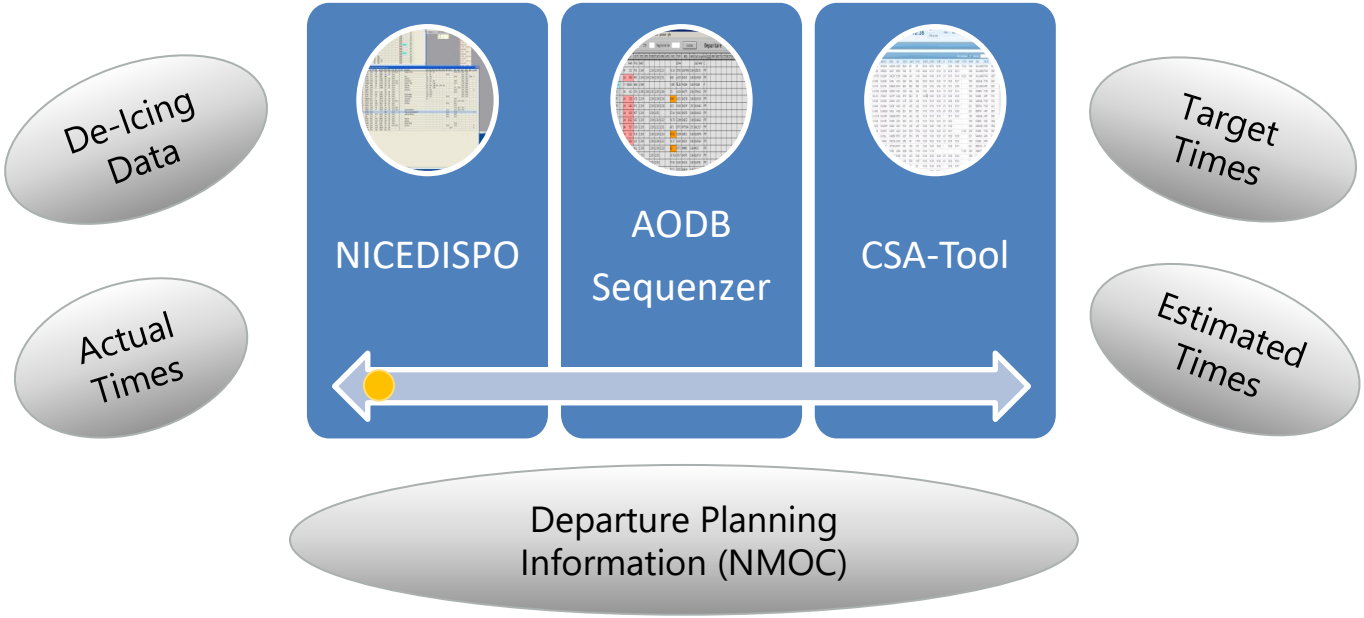




DFS Deutsche Flugsicherung

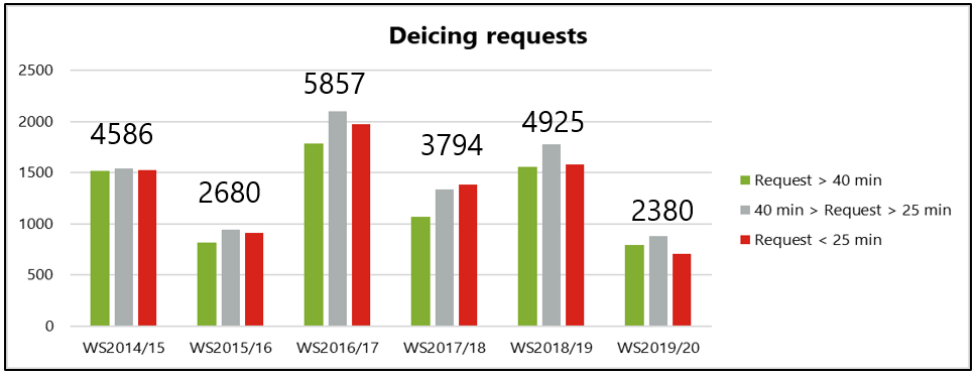
Fraport

Airport CDM@FRA
„Data exchange & Information Sharing“



Airport CDM@FRA
„De-Icing request“

Pilot De-Icing request before TOBT



De-Icing Request (ICE=E)

VHF: 121.985 MHz „Frankfurt De-Icing“
Tel.: (0 69) 6 90 – 3 02 32

ACARS (Data-Link)
Technical infrastructure needed!

De-Icing Request *(ICE = E):*

Due to the influence that aircraft de-icing has on the sequencing process it is highly advised to request aircraft de-icing at the latest **“TOBT – 40 minutes”** (which is the time that the TSAT is published).

Airport CDM@FRA
„De-Icing planning“

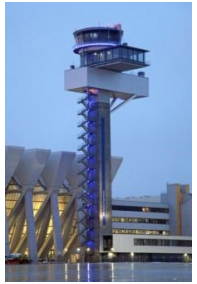
CTOT

EDIT

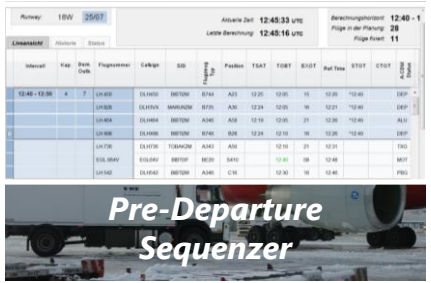
Estimated duration

ICE = P, R

De-Icing place



Runway capacity



SCZT

Allocation
N*ICE

ECZT

Estimated commencement

TSAT / TTOT

ICE = E

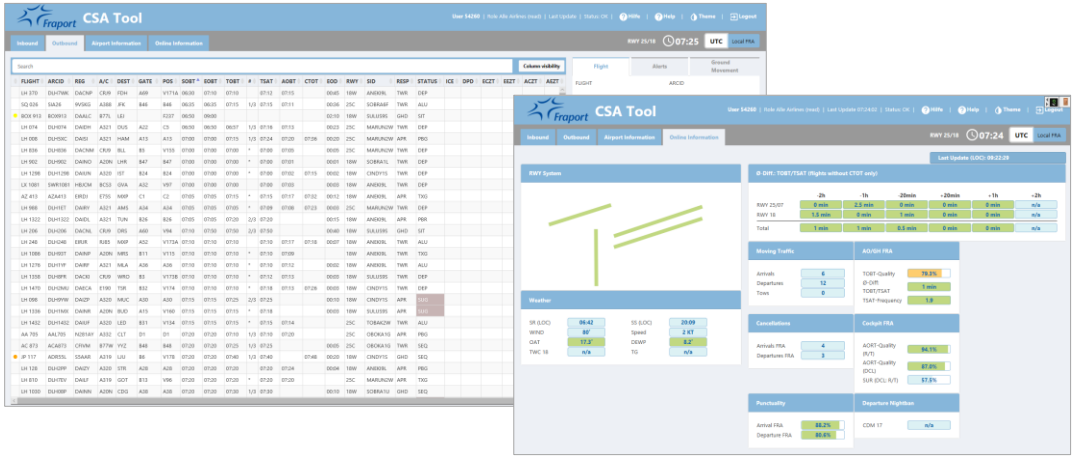
De-Icing requesttime

TOBT

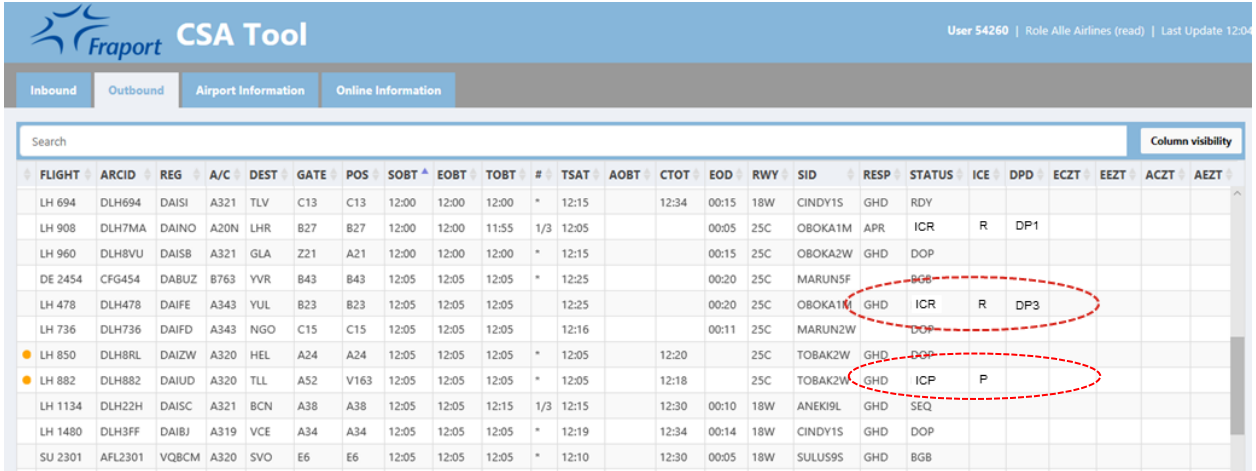
Airport CDM@FRA
„Data exchange & Information Sharing“

Information tools:

- CSA-Tool flight details incl. de-icing data
- CSA-Tool Airport Information (e.g. SNOWTAM or Snow Removal)
- CSA-Tool Online Information (e.g. Delays, current de-icing or pads opened)
- A-VDGS: De-Ice on Position – ECZT 1030 / De-Ice on Pad - DPW



Airport CDM@FRA
„CSA Tool – De-Icing display Data“



FLIGHT	ARCID	REG	A/C	DEST	GATE	POS	SOBT	EOBT	TOBT	#	TSAT	AOBT	CTOT	EOD	RWY	SID	RESP	STATUS	ICE	DPD	ECZT	EEZT	ACZT	AEZT
LH 694	DLH694	DAISI	A321	TLV	C13	C13	12:00	12:00	12:00	*	12:15		12:34	00:15	18W	CINDY1S	GHD	RDY						
LH 908	DLH7MA	DAINO	A20N	LHR	B27	B27	12:00	12:00	11:55	1/3	12:05			00:05	25C	OBOKA1M	APR	ICR	R	DP1				
LH 960	DLH8VU	DAISB	A321	GLA	Z21	A21	12:00	12:00	12:00	*	12:15			00:15	25C	OBOKA2W	GHD	DOP						
DE 2454	CFG454	DABUZ	B763	YVR	B43	B43	12:05	12:05	12:05	*	12:25			00:20	25C	MARUN5F		BGB						
LH 478	DLH478	DAIFE	A343	YUL	B23	B23	12:05	12:05	12:05		12:25			00:20	25C	OBOKA1M	GHD	ICR	R	DP3				
LH 736	DLH736	DAIFD	A343	NGO	C15	C15	12:05	12:05	12:05		12:16			00:11	25C	MARUN2W		DOP						
LH 850	DLH8RL	DAIZW	A320	HEL	A24	A24	12:05	12:05	12:05	*	12:05		12:20		25C	TOBAK2W	GHD	DOP						
LH 882	DLH882	DAIUD	A320	TLL	A52	V163	12:05	12:05	12:05	*	12:05		12:18		25C	TOBAK2W	GHD	ICP	P					
LH 1134	DLH22H	DAISC	A321	BCN	A38	A38	12:05	12:05	12:15	1/3	12:15		12:30	00:10	18W	ANEKI9L	GHD	SEQ						
LH 1480	DLH3FF	DAIBJ	A319	VCE	A34	A34	12:05	12:05	12:05	*	12:19		12:34	00:14	18W	CINDY1S	GHD	DOP						
SU 2301	AFL2301	VQBCM	A320	SVO	E6	E6	12:05	12:05	12:05	*	12:10		12:30	00:05	18W	SULUS9S	GHD	BGB						

ICE status

DIR | ICR | ICP | DVA | DVP | DCR | ADB | ADE

- DIR: De-Icing requested
- ICR: De-Icing Remote
- ICP: De-Icing Position
- DVA: De-Icing Vehicles allocated
- DVP: De-Icing Vehicles on position
- DCR: De-Icing company ready
- ADB: Actual De-Icing Begin
- ADE: Actual De-Icing End

De-Icing@FRA
Position De-Icing

ECZT

EDIT

ACZT

AEZT

TSAT=De-Icing end

Exception: regulated flight with CTOT!

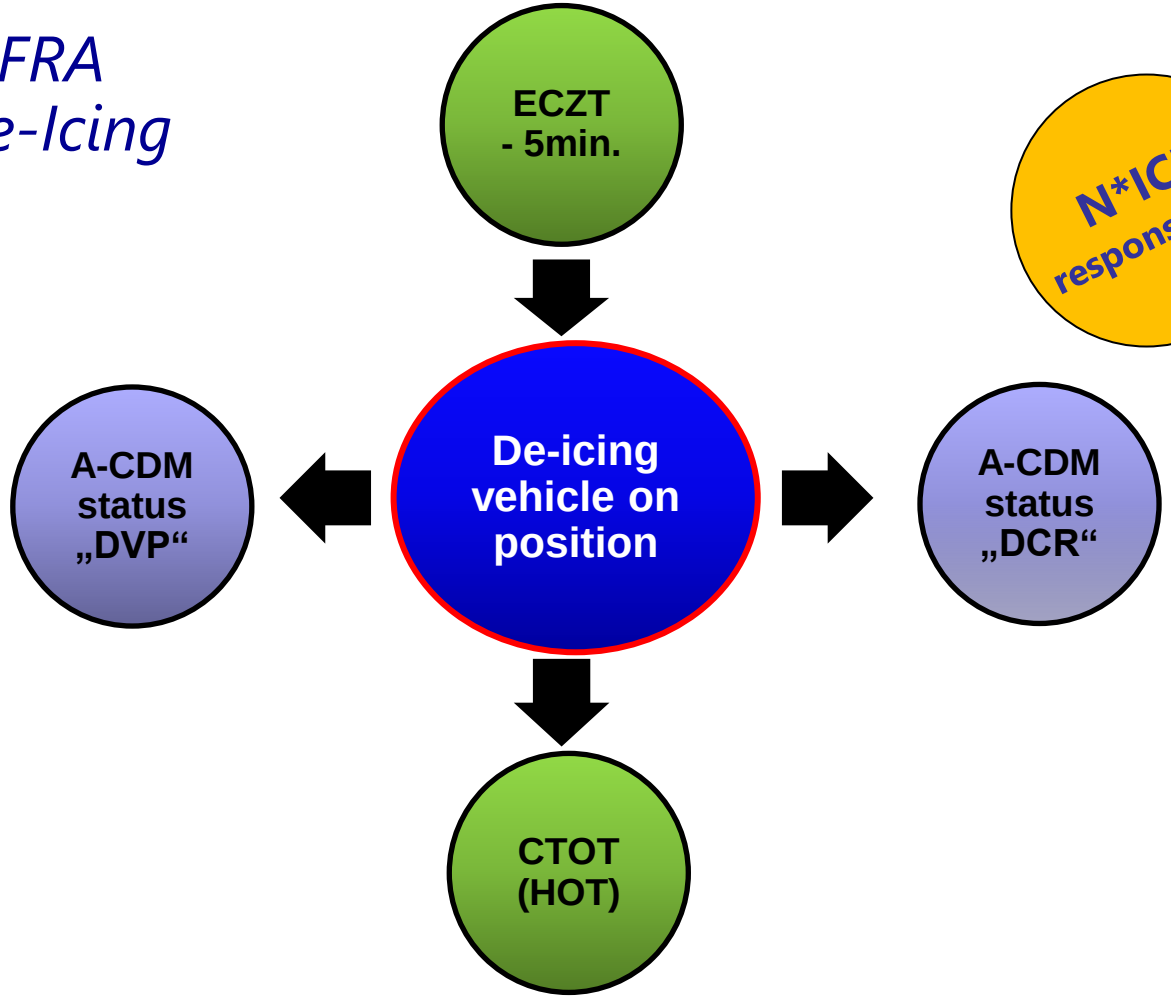
Pilot: „REQUEST START-UP AFTER DE-ICING“

Ground Handling | **De-Icing** | **Taxi outbound** | **Take-Off**

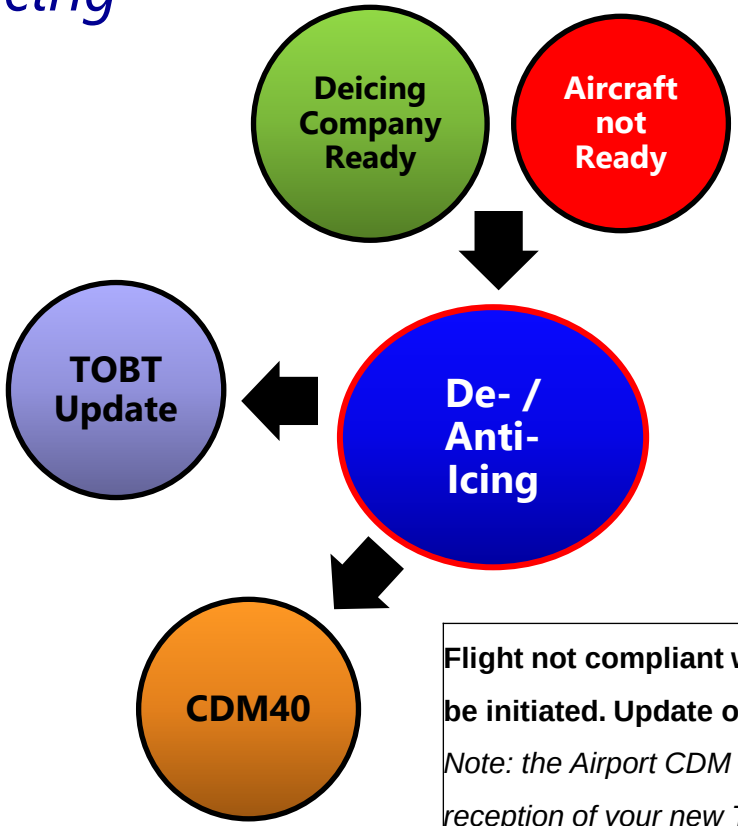
Position Deicing (ICE=P)

TOBT/ECZT | **TSAT**

De-Icing@FRA
Position De-Icing



De-Icing@FRA
Position De-Icing



<u>Flight not ready for deicing</u>

XYZ1AB/XY123

CDM40

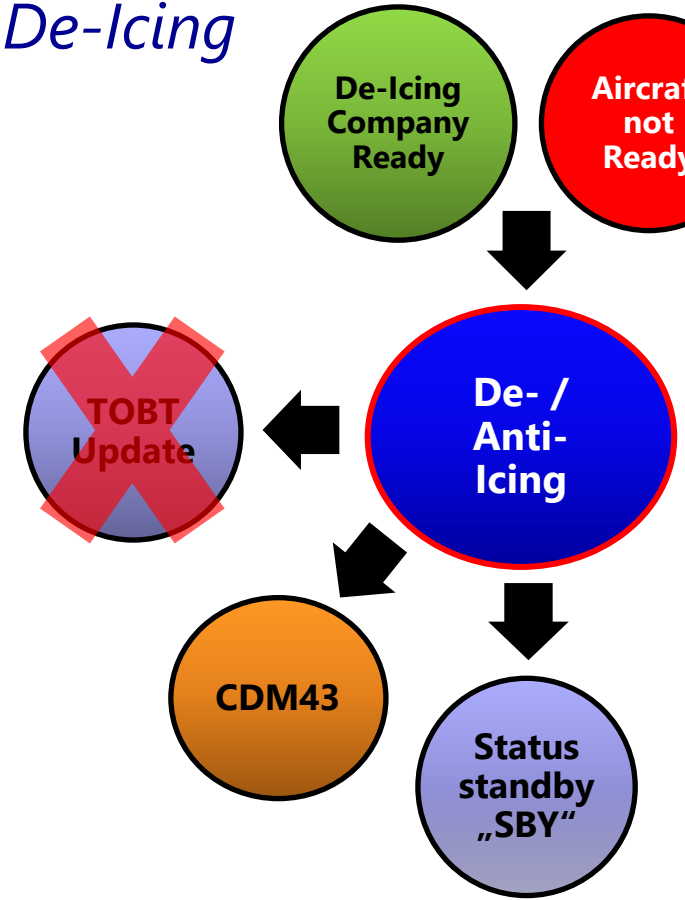
1110050930UTC

FRA/EDDF

Flight not compliant with TOBT 0925. Deicing could not be initiated. Update of TOBT needed.

Note: the Airport CDM process may be suspended until reception of your new TOBT.

De-Icing@FRA
Position De-Icing



DEICING CANCELLED AND TOBT DELETED XYZ1AB/XY123
CDM43
1110050930UTC
FRA/EDDF

AIRCRAFT WAS NOT READY FOR DEICING. DEICING IS CANCELLED AND TOBT IS DELETED. FIRST NEW TOBT NEW TOBT AND THEN NEW DEICING REQUEST REQUIRED.

Note: The Airport CDM process is suspended until reception of your new TOBT.

De-Icing@FRA
Remote-Deicing

Ground Handling **Taxi outbound** **De-Icing** **Take-Off**

Remote De-Icing (ICE=R)

TOBT / TSAT

Pilot: „REQUEST START-UP FOR REMOTE DE-ICING“

ECZT will not be published – display of ACZT / AEZT

Operation Mode “simplified sequencing”

AVIATION WORLD EXPRESS (AWE) + CSA-Tool - Airport Information

Activation A-CDM Operations Mode “simplified sequencing”

DUE TO SNOWFALL OR HIGH DEICING DEMAND THE FOLLOWING PROCEDURES ARE IN USE UNTIL FURTHER NOTICE.

A SIMPLIFIED SEQUENCING IS USED FOR THE PLANNING OF DEICING AND ALLOCATION OF A DEICING LOCATION.

START-UP PROCEDURE ACCORDING TO TSAT IS STILL VALID. START-UP CLEARANCE VIA DATALINK IS NOT POSSIBLE (CHECK ATIS).

PLEASE BE ADVISED, THAT THE TSAT MAY BE DELETED FOR FLIGHTS WITH STATUS “DE-ICING REQUESTED”.

THE INFORMATION TO PILOTS IN THIS CASE WILL BE: "YOU ARE LISTED FOR DE-ICING, WAIT FOR DE-ICING LOCATION"

AS SOON AS TARGET TIMES FOR YOUR FLIGHT ARE AVAILABLE, THE TSAT IS PUBLISHED AGAIN.

<u>WE WOULD LIKE TO REMIND YOU, THAT IT IS MANDATORY TO UPDATE THE TOBT.</u>

<u>PLEASE MAKE SURE THAT YOUR COCKPIT IS INFORMED ABOUT ACTIVATION AND PURPOSE OF THIS OPERATIONS MODE!</u>

WE WILL INFORM YOU UPON RESUMPTION OF NORMAL A-CDM OPERATION.

Operation Mode "A-CDM Emergency Mode"

AVIATION WORLD EXPRESS (AWE) + CSA-Tool - Airport Information

Activation A-CDM Emergency Mode

DUE TO SYSTEM DISTURBANCE OR IRREGULAR OPERATIONS FOLLOWING A-CDM PROCEDURES ARE IN USE UNTIL FURTHER NOTICE:

START-UP PROCEDURE ACCORDING TO TSAT IS STILL VALID. START-UP CLEARANCE VIA DATALINK IS NOT POSSIBLE (CHECK ATIS).

TSAT CALCULATION AND DEICING PLANNING BASED ON SIMPLIFIED PRE-DEPARTURE SEQUENCE

FOR FLIGHTS WITH DEICING, DEICING SEQUENCE IS BASED ON TOBT. TSAT FOR REGULATED FLIGHTS IS BASED ON CTOT.

PLEASE BE ADVISED, THAT THE TSAT MAY BE DELETED FOR FLIGHTS WITH STATUS "DEICING REQUESTED".

THE INFORMATION TO PILOTS IN THIS CASE WILL BE: "YOU ARE LISTED FOR DE-ICING, WAIT FOR DE-ICING LOACTION."

AS SOON AS TARGET TIMES FOR YOUR FLIGHT ARE AVAILABLE, THE TSAT IS PUBLISHED AGAIN.

FOR FLIGHTS WITHOUT DEICING:
- TSAT = TOBT FOR NON-REGULATED FLIGHTS
- TSAT = CTOT-EXOT FOR REGULATED FLIGHTS

<u>WE WOULD LIKE TO REMIND YOU, THAT IT IS MANDATORY TO UPDATE THE TOBT.</u>

WE WILL INFORM YOU UPON RESUMPTION OF NORMAL A-CDM OPERATIONS.

Operation Mode "Start-Up procedure according to TSAT is suspended"

AVIATION WORLD EXPRESS (AWE) + CSA-Tool - Airport Information

Start-Up procedure according to TSAT is suspended

DUE TO NON-RELIABLE QUALITY OF TARGET TIMES FOR DEPARTURE CLEARANCE, **„START-UP PROCEDURE ACCORDING TO TSAT"** IS SUSPENDED.

PILOTS REQUEST START-UP CLEARANCE VIA R/T WHEN ACTUALLY READY.

DATALINK REQUEST FOR DEPARTURE CLEARANCE MIGHT NOT BE POSSIBLE (CHECK ATIS).

WE WOULD LIKE TO REMIND YOU, THAT IT IS MANDATORY TO UPDATE THE TOBT.

WE WILL INFORM YOU, WHEN "START-UP PROCEDURE ACCORDING TO TSAT" IS VALID AGAIN.

Agenda

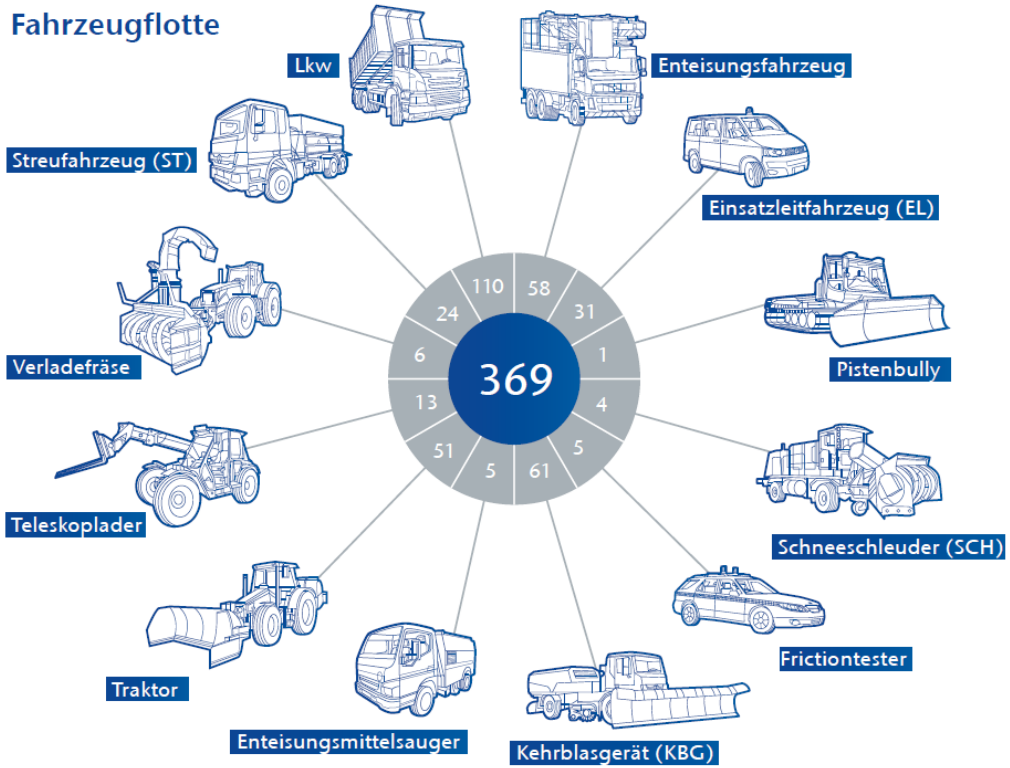
Winter Operations…

….in the context of the A-CDM process.

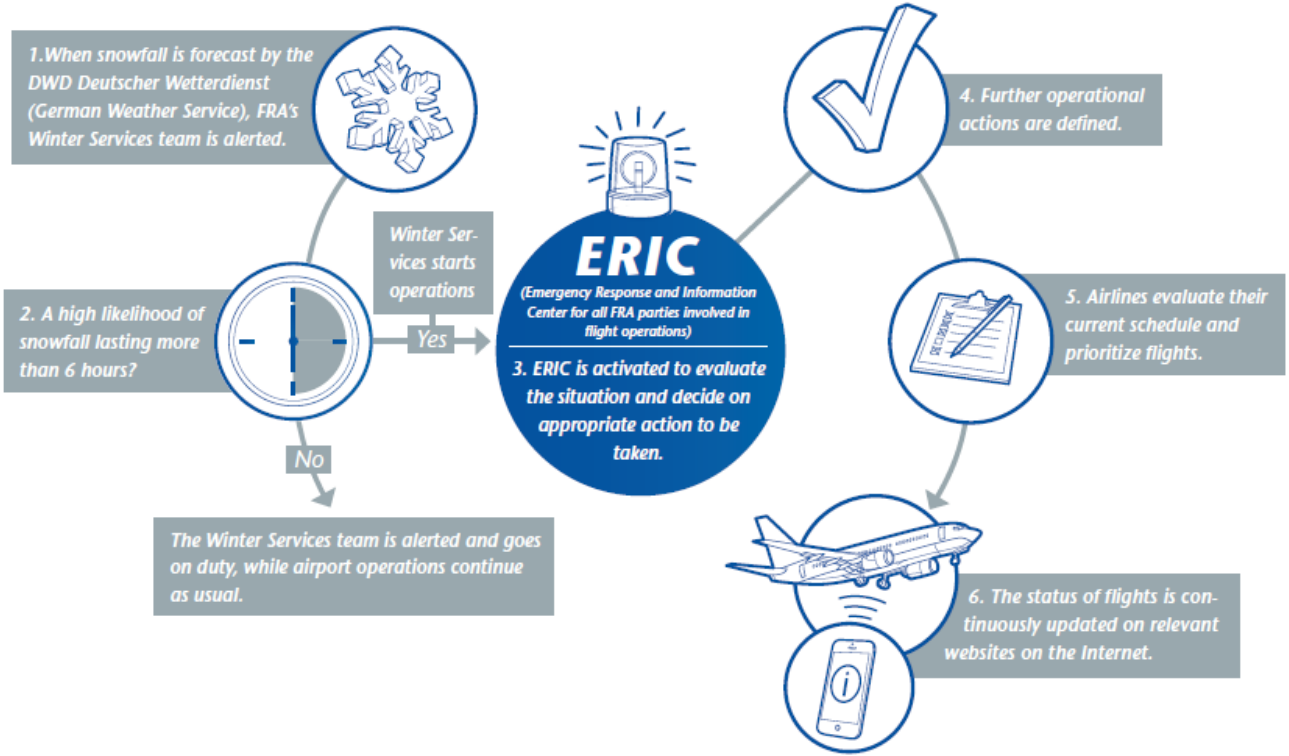
Surface De-Icing

Surface De-Icing

Winter Ops Facts and Figures



Alerting of Winter Services



Impact due to the Covid pandemic

- Reduced traffic volume due to impact of Covid pandemic
- Based on the existing winter service procedures, the reduced traffic volume is to be taken into account
- Due to the reduction of traffic, the operation of certain runways can be dispensed with
- Requirements for stand clearing remain high, due to special positioning, etc.
- Changes are only made to the large winter service. Here we are reducing by one large clearing group
- Number of De-Icing vehicles in remaining clearing groups will be increased in order to conduct continuous clearing

Agenda

Winter Operations…

….in the context of the A-CDM process.

Surface De-Icing

Your Flight – Your Contribution

Requirements for punctual de-icing:

- Timely de-icing request…
- Valid TOBT as a forecast of…

... "Aircraft ready for De-Icing"

AO / GH
responsibility

N*ICE
responsibility

Your responsibility

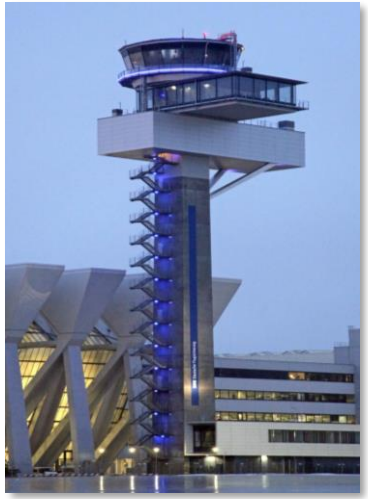
- Use our CDM-Alerts and react to them! Especially CDM07, CDM07a, CDM08, CDM09, CDM10, CDM11, CDM40 and CDM43 are of great importance!

- Inform your cockpit crews that they are wasting valuable airport and airspace capacity through incorrect start-up and off-block request and that they risk to fall into standby!

- Especially in special situations (e.g. Tailwind RWY18, thunderstorms, winter....) a high level of process compliance leads to a better utilization of existing capacities and to more planning stability...

Summary

- We need process reliability:
  - early de-icing request
  - **high quality of TOBT at all times**
- Transparency and exchange of information support decision making.
- **We all get better predictability and stability of processes during winter operations.**
- **One question remains: How strong is a winter event really?!**



Adverse Conditions

Chaotic Situation

Severe Disruption

Questions???

Edgar König

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We gladly support you!

Service

- Requests concerning specific flights
- -> We need flight number and date of flight
- Aircraft Operator Performance Report
- -> For Airlines and staff responsible for TOBT
- Registration for CSA Tool and changes of TOBT Responsibility
- Customized consulting and training
- Registration of A-CDM Alert email addresses
- Procedure documents and information
- Documents and training material
- Actual information

https://cdm.frankfurt-airport.com

Fraport

Gute Reise!
Wir sorgen dafür