

Frankfurt Aircraft Deicing Plan Winter Season 2022/2023

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.

This version replaces all previously valid versions. All new additions and changes to the previously valid version are underlined.

1. Table of Contents

1.	TABLE OF CONTENTS	2
2.	INTRODUCTION	3
3.	DOCUMENTATION AND FLUIDS	4
4.	GENERAL INFORMATION AND OPERATIONAL PARTNERS	4
4.1	Setting Priorities for Departing Flights	5
5.	INFORMATION EXCHANGE	6
5.1	A-CDM Status Messages and Deicing Times	6
5.2	Status Messages for Deicing Requests	7
5.3	Duration of Deicing/Anti-icing	7
6.	CAPACITY AND LIMITATIONS	8
7.	DEICING/ ANTI-ICING PROCEDURE	9
7.1	Planning the Deicing Process	9
7.1.1	Detection of need for deicing	9
7.1.2	Requests for Aircraft Deicing	10
7.1.3	Qualified Pre-Planning (EDIT Prediction)	10
7.1.4	Designating the Location of Deicing	11
7.1.5	Monitoring of the Designated Deicing Location	11
7.1.6	Planning the Deicing Begin	11
7.1.7	Allocation of Deicing/Anti-icing Vehicles	11
7.1.8	Deicing/Anti-icing Vehicles at the Parking Position	11
7.2	Execution of Deicing/Anti-icing of Aircraft	12
7.2.1	Delay before Deicing/Anti-icing Begins	12
7.2.2	Begin of Deicing/Anti-icing	13
7.2.3	Deicing/Anti-icing Acceleration or Slow Down	13
7.2.4	End of Aircraft Deicing/Anti-icing	13
7.3	Cancellation of Aircraft Deicing/Anti-icing	13
8.	START-UP AND DEICING/ANTI-ICING	14
9.	SPECIAL PROCEDURE	14
9.1	Deactivation of SatCom-System during Remote Deicing	14
9.2	NMOC for “Adverse Conditions”	14
9.3	Irregular Operation Modes	14
9.4	Special Procedure US-Flights	15
10.	SPECIAL DEICING SERVICES	16
11.	FAN BLADE DEICING	16
12.	QUALITY ASSURANCE AND CONTROL	16
13.	APPENDIX A - GLOSSARY	17
14.	APPENDIX B – A-CDM PROCESS POSTER	19
15.	APPENDIX C – DEICING/ANTI-ICING SERVICE REQUEST	21
16.	APPENDIX D - COMMUNICATION PROCEDURE FOR DEICING/ANTI-ICING OF AIRCRAFT ON DPS	22
16.1	Communication Procedure DP West (DP1 and DP2)	22
16.2	Communication Procedure DP3 and DP4	25
17.	APPENDIX E - COMMUNICATION PROCEDURE FOR DEICING/ANTI-ICING OF AIRCRAFT ON AIRCRAFT PARKING STANDS	29
18.	APPENDIX F - PROVIDER’S CAPACITY ALLOCATION MATRIX	31
19.	APPENDIX G - GENERAL DP ALLOCATION PLAN	32

2. Introduction

This document describes the facilities and operational procedures for deicing/anti-icing of aircraft on the ground during the annual aircraft deicing/anti-icing period (Oct. 15th - April 30th of the following year). The contents of this plan have been agreed upon between the Airport Operator Fraport AG, FRA- Apron Control GmbH, the Deutsche Flugsicherung GmbH (DFS) being responsible for air traffic control and N*ICE Aircraft Services & Support GmbH, the provider for deicing/anti-icing of aircraft on the ground. This document and all changes are presented to the Airline Operators Ground Committee (AOC) on behalf of the aircraft operators.

The Aircraft Deicing Plan's purpose is the safe, orderly and efficient deicing of aircraft on terminal or apron positions including designated areas for deicing aircraft. The plan is intended to be primarily used by all airline operational staff as detailed information and has been published in order to ensure that all regulations and procedures for deicing/anti-icing of aircraft on the ground at Frankfurt/Main are known and adhered to. It shall further serve as a reliable guideline for optimising procedures to achieve the maximum use of available capacity.

In no case shall the rules and procedures as written in the Frankfurt Aircraft Deicing Plan be construed as superseding the responsibility of the aircraft operator and/or responsible cockpit crew to carefully analyse meteorological and operational conditions for relevant flights, especially including the preparation of the aircraft for deicing/anti-icing. The aircraft operator's pilot in command remains ultimately responsible for the safe operation of the aircraft under icing conditions.

The regulations and procedures established in the Frankfurt Aircraft Deicing Plan do not supersede the procedures for deicing/anti-icing of aircraft on the ground officially published in the German Aeronautical Information Publication (AIP).

3. Documentation and Fluids

In addition to the information contained in the German Aeronautical Information Publication (AIP) the valid version of the following documentation shall apply:

- SAE AS 6285 Aircraft Ground Deicing/Anti-icing Processes.

The deicing/anti-icing fluids currently used at the Frankfurt Airport are SAE Type I and SAE Type IV. The manufacturer and the product name will be published separately by N*ICE before the start of the winter season.

Note:

Capacity restrictions due to winter weather conditions, distances between aircraft parking positions and the designated runway can result in extended taxi times. Therefore, it is highly recommended that aircraft operators submit applications to their respective airworthiness authority requesting the adoption of so-called brand name tables for SAE Type IV Anti-icing Fluid and authorising longer hold over times (HOT) than Generic Tables.

4. General Information and Operational Partners

Winter conditions can cause an immense additional workload for everybody involved that can possibly result in bottleneck situations causing problems for aircraft handling due to the following:

- limited capacity of equipment available for the deicing/anti-icing of aircraft and airport surfaces (e.g., runways, ramp areas, etc.),
- constantly changing weather situations,
- unavoidable delays and foreseeable cancellations.



Illustration 1. Operational Partners

During the annual deicing season, FRA-Apron Control GmbH and N*ICE monitor weather forecasts to determine the necessity for aircraft deicing/anti-icing in order to make the best use of available capacity. The Aircraft Deicing Center (ADC) is operated by N*ICE.

The deicing/anti-icing of any given aircraft shall be decided upon in coordination between the pilot in command (PIC) or aircraft operator and N*ICE. The PIC will communicate his request regarding procedure to be used and applicable ADF mixture ratios. N*ICE will recommend a deicing/anti-icing procedure and ADF concentration for aircraft deicing if requested by the PIC according to the weather situation and outside ambient temperature. The PIC shall make the final decision about which deicing/anti-icing procedure and ADF concentration that is to be used.

Outside of the annual deicing season (May 1st – Oct. 14th) N*ICE will have one deicing/anti-icing vehicle on standby in case of unexpected requests. The time required for activation of qualified staff and preparation of the deicing/anti-icing vehicle (e.g. heating of ADF on board and driving to the aircraft parking stand) until arrival at the aircraft parking stand shall be calculated with 45 minutes. A timely request is recommended and can only be made per telephone in advance (for contact details please refer to Appendix C).

4.1 Setting Priorities for Departing Flights

According to German Aviation Law (LuftVZO §45 Abs. 2), the airport operator will not set priorities for departing flights, to prevent unequal treatment. This also applies to N*ICE as the provider of Aircraft deicing/anti-icing services.

Exemptions may be granted to:

- Ambulance flights,
- Flights transporting LHO (Living Human Organs,)
- Government flights.

Departure flights with a critical crew duty time limitation shall, if possible, be given priority to the extent that the flight can be operated within the legal crew duty time. It is the aircraft operator's responsibility to inform the latest airborne time the flight can be carried out at the earliest possible time.

When the number of aircraft deicing requests reaches the point that aircraft with critical crew flight curfews cannot be in time, the following procedure will be activated:

- The flight crew of departing flights with a critical flight curfew shall report this to N*ICE via radio communication (see Appendix C).
- N*ICE sets the deicing/anti-icing sequence priority with the goal of avoiding infrastructural bottle neck situations for airport operations, the total number of affected passengers, and in general favoring wide-body aircraft before narrow-body aircraft. If known and if possible, the consequence of eventually required flight crew replacements shall also be put into consideration.

The TOBT-Agent responsible for the TOBT generally has the possibility to switch the sequence of departing flights that do not already have a CTOT. Possible flights that can be switched will be displayed in the system "CSA-Tool". The DFS (Tower) is responsible for deciding whether a flight can be switched or not. Before a switch of sequence will be granted, the switch of sequence shall be coordinated with the DFS (Tower) under the telephone number **069 6 38 09 51 06**. Departing flights with different designated runways cannot be switched.

5. Information Exchange

For the purpose of the A-CDM procedure necessary data for the deicing of aircraft is exchanged between operational partners.

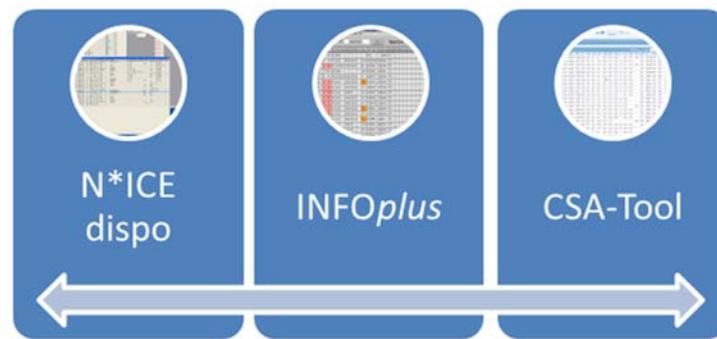


Illustration 2. Data Exchange Display

The A-CDM status messages, deicing times and deicing request messages are published and displayed in the “CSA-Tool” and INFOplus systems.

5.1 A-CDM Status Messages and Deicing Times

Acronym	Meaning	Definition
ACZT	Actual Commencement of Deicing Time	The actual time at which deicing operations of an aircraft starts
ADB	Actual Deicing Begin	A-CDM@FRA process status
ADE	Actual Deicing End	A-CDM@FRA process status
ADIT	Actual Deicing Time	ADIT = AEZT – ACZT (actual time of deicing duration)
AEZT	Actual End of Deicing Time	The time when deicing operations of an aircraft ends
DCR	Deicing Company Ready	A-CDM@FRA process status
DIR	Deicing requested	Deicing is requested
DVA	Deicing Vehicles Allocated	A-CDM@FRA process status
DVP	Deicing Vehicles on Position	A-CDM@FRA process status
ECZT	Estimated Commencement of Deicing Time	The estimated time when deicing operations of an aircraft are expected to start
EDIT	Estimated Deicing Time	EDIT = EEZT – ECZT (estimated time of deicing duration)
EEZT	Estimated End of Deicing Time	The estimated time when deicing operations of an aircraft are expected to end

5.2 Status Messages for Deicing Requests

Acronym	Meaning	Remark
ICE = C	Pre deicing Check	Check if Aircraft deicing is necessary
ICE = E	Deicing was requested	Deicing was requested by pilot, Aircraft Operator or Ground Handler via telephone, radio or data link
ICE = F	Early deicing	Aircraft deicing before ground handle activities
ICE = P	Deicing on Position	Deicing will occur on aircraft parking stands
ICE = R	Remote deicing	Deicing will occur on deicing pads or on defined apron parking stands
ICE = S	Cancellation of deicing	Deicing has been cancelled by pilot, aircraft operator or N*ICE

5.3 Duration of Deicing/Anti-icing

The following illustration displays the duration of the deicing/anti-icing process. This encompasses the vehicle preparation time for position or remote deicing, plus either the estimated time for deicing (EDIT), or the actual time needed (ADIT).

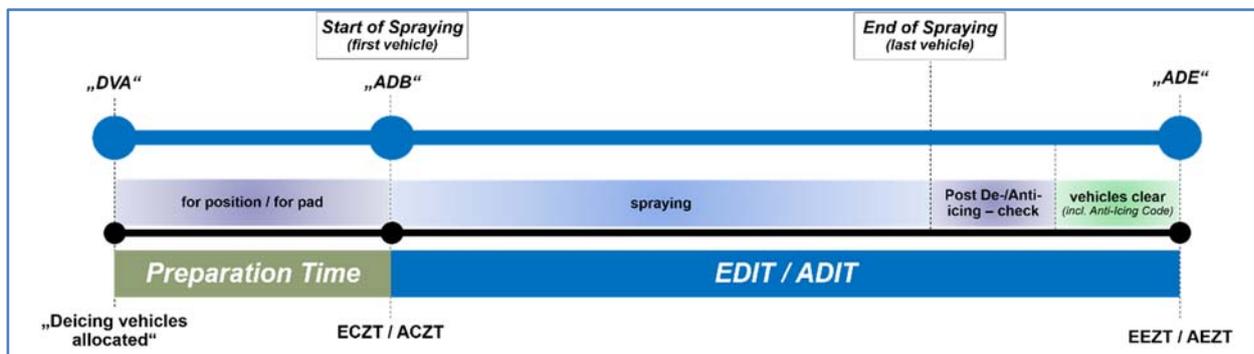


Illustration 3. Display of a deicing/anti-icing process

6. Capacity and Limitations

Capacity restrictions during winter operations can be caused by the necessity for deicing/anti-icing of aircraft and clearing and/or deicing of runways and taxiways.

The total number of aircraft deicing/anti-icing vehicles for the forthcoming winter season is established based on known flight schedules, airport capacity and with due consideration of economic aspects and necessary waiting times. The goal is to provide an aircraft deicing vehicle availability of at least 85%. As a result of the corona crisis, the traffic level continues below prior the pandemic and due to process improvement, there is an adjusted Fleet of 65 deicing vehicles available for the 2022/2023 winter season. The level of operational readiness differs according to actual weather conditions and can be referenced in Appendix F.

For the storage of deicing/anti-icing fluid tank farms are situated at strategic areas of the airport in order to reduce vehicle driving times for refilling purposes, thus increasing the overall capacity for deicing/anti-icing of aircraft on the ground. All deicing vehicles operating under this Frankfurt Aircraft Deicing Plan will **only** be refilled at these tank farms. N*ICE has established a system to reorder deicing/anti-icing fluid in a timely manner to cover storage capacity.

In case of extreme winter weather conditions resulting in hold over times not likely to be sufficient for safe departure after deicing/anti-icing of aircraft on ramp positions Fraport will, depending on the overall situation on the ramp, endeavor to provide other ramp areas for deicing/anti-icing purposes.

When there is demand for aircraft deicing/anti-icing, N*ICE will, as a first step and in coordination with FRA-Apron Control GmbH and the DFS (Tower), open available deicing pads after all necessary preparations have been completed.

For the winter season 2022/2023 the following areas will be available for aircraft deicing/ anti-icing (see also AIP EDDF AD 2 11 Procedures for the Deicing of Aircraft):

- DP1 and DP2 (DPW), only for departures from RWY 18 with restricted use for departures RWY 07. When RWY 18 is not used there are no restrictions for departures RWY 07.
- TWY N7 - DP3E (N7-Blue) and DP3W (N7-Orange) (preferably for departures RWY 07/25 also for departures RWY 18).
- V159/V161 - DP4E (V159) and DP4W (V161) (preferably for departures RWY 07/25 also for departures RWY 18).

The deicing/anti-icing area will be displayed in the partner systems INFOplus, CSA-Tool, N*ICE dispo, FDPS, T-FDPS and RMS, as displayed below.

Priority	Deicing Area	System Display	Radio Frequency
1	DP2	DP2E DP2C, DP2W	121,930 MHz 121,565 MHz
2	DP1	DP1	121,765 MHz
3	V159/V161	<u>DP4E, DP4W</u>	121,785 MHz
4	TWY N7	<u>DP3E, DP3W</u>	121,880 MHz

7. Deicing/ Anti-icing Procedure

The setting of the aircraft deicing sequence will be determined according to the pre-departure sequence of the A-CDM process. The following factors will be considered when determining the deicing/anti-icing sequence and the calculation of the ECZT (Estimated Commencement of Deicing/Anti-icing).

- Local delays at Frankfurt Airport
- Aircraft stand deicing/anti-icing or remote deicing/anti-icing
- Air Traffic Management System NMOC-Slots = CTOT (Confirmed Time of Takeoff)
- Taxi times
- TSAT
- TOBT
- Time of deicing request

At best the ECZT is the same as the forecasted time reported by the aircraft operator or ground handling company for "Aircraft Ready" (TOBT).

In case the TOBT target cannot be met due to technical problems or on any other reasons, the aircraft operator shall immediately revise the TOBT accordingly.

The EDIT is not part of the TOBT. For this reason the TOBT should not be changed because of an aircraft deicing planned at a later time.

The CTOT will be set according to the local traffic situation due to the automatic exchange of information (DPI- Departure Planning Information) with the NMOC. In order to maintain the stability of the pre-departure sequence the aircraft operator should not continue any follow up coordination with the NMOC. Additionally, it is no longer necessary to update the EOBT (Estimated Off-Block Time) in the ATC Flight Plan due to the actual local traffic situation.

In Appendix B you will find a graphic display of the deicing process and the pre-departure sequence.

7.1 Planning the Deicing Process

The following describes the individual process phases for planning the aircraft deicing and the resulting exchange of information.

7.1.1 Detection of need for deicing

The need of deicing an aircraft will be detected in line with the **Preflight Contamination Check (SAE)**. This check should be conducted by the aircraft pilot generally, or a delegate (like an aircraft mechanical), usually during the pilot walk-around.

The alternative possibility is to delegate the procedure onto N*ICE. The **Preflight Contamination Check** will realize on aircraft parking stands only. **Preflight Contamination Check** on deicing pads (DP) is not possible.

During the deicing process until the aircraft has departed, there are further checks as follows:

- **Contamination Check:** carried out by N*ICE automatically; Matching ordered deicing against the actual contamination.
- **Post Deicing/Anti-Icing Check:** carried out by N*ICE automatically; Inspection of deicing result.
- **Pre-Take Off Check:** carried out by the cockpit-crew within the HOT; Inspection of enough deicing fluid on aircraft wings.
- **Pre-Take Off Contamination Check:** carried out by cockpit crew if the aircraft is not departed within the HOT; Inspection upon need for second deicing to repeat the deicing procedure.

These Checks could be made with different technics generally (such as visual or tactile Check/Hands-On Check). N*ICE is only performing visual checks generally. If the airline requires a tactile Check/Hands-On Check, that must be written coordinated with N*ICE in advance of the deicing season. For this purpose, it is necessary that the Airline is instructing the N*ICE staff onto the aircraft types operating at Frankfurt.

7.1.2 Requests for Aircraft Deicing

Every request for deicing/anti-icing shall be communicated to N*ICE via the communication channels as published in Appendix C. Information concerning the “Callsign” (commercial flight number or ATC Callsign) or current parking stand must be included with the request.

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

In case of a Preflight Contamination Check order at N*ICE, the request must be taken in time, so that after the procedure, the time recommendation for the actual deicing request can be hold.

A deicing/anti-icing request that is made later than 25 minutes (TOBT < 25min.) before the actual time of TOBT leads to a situation that the concerned flight will be planned according to availability and sequence of available N*ICE resources. This procedure should reduce constant changing of the TSAT and disadvantages for flights that have requested services in a timely manner.

To further enhance communication procedures, it is now possible to request deicing services via ACARS (Aircraft Communications Addressing and Reporting System), if the aircraft operator has the appropriate EDP systems installed and links. An ACARS deicing request will be rejected without any notice if a flight already has ASAT or AOBT.

The deicing request will publish and displayed in the “CSA-Tool” and “INFOplus” systems as ICE = E (deicing requested).

If an aircraft operator requests aircraft deicing after the aircraft has already received start-up via datalink or radio (A-CDM status “SUG”) N*ICE will not except the request and advise the aircraft operator to send the given start-up back to the DFS-Tower and thereafter repeat the deicing /anti-icing request.

If an aircraft operator requests services after the aircraft stand has been vacated (A-CDM status “OFB”) the deicing/anti-icing will be decided by the available N*ICE deicing/anti-icing capacity and will generally be carried as a position deicing/anti-icing. When the aircraft operator is given instructions by FRA-Apron Control GmbH to taxi into an aircraft stand (Return to Stand procedure) the A-CDM alarm 10 will be sent to the aircraft operator or ground handling partner and the flight status will be changed to “standby” (SBY).

Example: **CDM10 — “TOBT Rejected or Deleted”**

XXX1AB/XX123

CDM10

1110151200UTC

MUC/EDDM

TOBT 1300 WAS REJECTED OR DELETED. NEW TOBT REQUIRED.

NOTE: THE AIRPORT CDM PROCESS IS SUSPENDED UNTIL RECEPTION OF YOUR RECTIFICATION

7.1.3 Qualified Pre-Planning (EDIT Prediction)

N*ICE carries out a qualified pre-planning based on the number of deicings requested. This includes designating where the deicing will take place and setting the EDIT prediction.

The EDIT will be monitored by N*ICE during all deicing phases and updated accordingly.

The EDIT prediction depends on the following criteria:

- Type of deicing request
 - Position
 - Ground time
- Weather situation
- Deicing services ordered
- Aircraft type
- Number of deicing/anti-icing vehicles used per deicing request

7.1.4 Designating the Location of Deicing

It is N*ICE's obligation to pre-plan the deicing location. The aircraft deicing differs between position and remote deicing.

Position deicing/anti-icing:

Deicing/anti-icing is conducted on a terminal or ramp parking position. All hatches must be closed, stairs and/or passenger bridges removed and the position clear of all handling equipment and aircraft engines switched off. (Except for LH special procedure with attached front boarding bridge)

Position deicing will be published and displayed in the "CSA-Tool" and "INFOplus" systems as ICE = P. Simultaneously the EDIT will also be published and displayed.

Remote deicing/anti-icing:

Deicing/anti-icing on a DP near a runway or a designated ramp area under the same conditions as a position deicing except that the aircraft engines shall be running.

Due to operational reasons changes can occur at short notice (e.g. actual traffic situation). The final decision for a specific DP or an apron area is the responsibility of FRA- Apron Control GmbH.

The remote deicing will be published and displayed in the "CSA-Tool" and "INFOplus" systems as ICE=R (Remote deicing). Simultaneously the EDIT and the deicing area (e.g. DP) will be published and displayed (see page 8).

Note: Positions which are equipped with ramp display A-VDGS will display the location where deicing/anti-icing will be performed.

7.1.5 Monitoring of the Designated Deicing Location

Approximately 25 minutes before TOBT, the pre-planning of a flight with requested deicing will be monitored. Due to the monitoring, changes may occur.

The following changes are possible:

- Remote deicing/anti-icing to position deicing/anti-icing
- Position deicing/anti-icing to remote deicing/anti-icing
- DP or remote area to a different DP or other remote area.

7.1.6 Planning the Deicing Begin

When the deicing/anti-icing location is designated and the flight has a published TSAT already (A-CDM status "SEQ"), the ECZT will be published by N*ICE and in the systems "CSA-Tool" and "INFOplus" published and displayed.

The ECZT includes the driving time to the given parking position and vehicle preparation.

In the case of remote deicing an ECZT will generally not be published due to infrastructural and operational factors deemed not to be adequate for proper planning.

7.1.7 Allocation of Deicing/Anti-icing Vehicles

In the case of position deicing N*ICE allocates the vehicles for a deicing request according to the A-CDM Pre-departure Sequence and vehicle availability. When the vehicles have been allocated the information will be published and displayed in the "CSA-Tool" and "INFOplus" systems.

The outbound flight receives the A-CDM Status "DVA" (deicing vehicles allocated).

If it is not possible to fulfil all deicing requests in a timely manner, due to operational reasons N*ICE shall decide on which aircraft deicing/anti-icing vehicles will be allocated.

For remote deicing/anti-icing the number of vehicles is already allocated for the DP's or available remote deicing areas.

7.1.8 Deicing/Anti-icing Vehicles at the Parking Position

The time at which the allocated vehicles have arrived at a parking position will be published and displayed as a status message in the "CSA-Tool" and "INFOplus" systems.

The departure flight receives the A-CDM status "DVP" (deicing/anti-icing vehicles on position).

N*ICE will endeavour to have the vehicles 5 minutes before ECZT at the parking position.

7.2 Execution of Deicing/Anti-icing of Aircraft

Following is a description of the process steps for carrying out deicing/anti-icing processes and the resulting exchange of information.

N*ICE will perform deicing/anti-icing as described in the latest revision of the “N*ICE Operations Manual for Aircraft Deicing on the Ground” and SAE AS6285 “Aircraft Deicing/Anti-icing Processes”.

The “Pilot in Command” (PIC) determines the type and extent of deicing/anti-icing services. The type and extent of the deicing/anti-icing influences the EDIT directly and therefore must be updated accordingly.

Once the type and extent of the deicing/anti-icing has been determined and the deicing crew is ready to begin deicing/anti-icing the time will be published and displayed as a status message in the “CSA-Tool” and “INFOpplus” systems.

The departure flight then receives the A-CDM Status “DCR” (Deicing Company Ready).

Aircraft taxiing for departure that must be deiced/anti-iced again due to an expired **HOT** or unexpected freezing precipitation while taxiing shall contact FRA-Apron Control GmbH immediately. Frankfurt Apron will then assign a suitable apron position, where a renewed deicing/anti-icing process shall be requested through standard procedure and process shall be carried out accordingly.

7.2.1 Delay before Deicing/Anti-icing Begins

Delays can be caused by the aircraft operator, N*ICE or ground handler. Additionally, runway capacity and/or air traffic restrictions may also affect on time performances of departing flights.

Delay by the Aircraft Operator

If the deicing crew is ready for deicing/anti-icing and cannot begin the process at time ECZT plus 5 minutes (aircraft not ready) the A-CDM Alarm 40 will be sent to the aircraft operator or ground handler.

Example:

CDM40 — “Aircraft not ready for deicing”

XXX1AB/XX123

CDM40

1110151200UTC

FRA/EDDF

FLIGHT NOT COMPLIANT WITH TOBT 1300. DEICING COULD NOT BE INITIATED. UPDATE OF TOBT NEEDED.

NOTE: THE AIRPORT CDM PROCESS MAY BE SUSPENDED UNTIL RECEPTION OF YOUR NEW TOBT.

After updating the TOBT and receipt of a new ECZT, N*ICE will decide whether the vehicles remain at the aircraft or leave the aircraft stand (later ECZT). If the TOBT is not updated, N*ICE must decide if the vehicles leave the aircraft stand.

If N*ICE decides to remove the vehicles N*ICE will then delete the ECZT. The departure flight status changes to “Standby” (A-CDM “SBY”). The A-CDM Alarm Message [43](#) will then be sent to the aircraft operator or ground handler.

Example:

CDM43 — “Deicing cancelled and TOBT deleted”

XXX1AB/XX123

CDM43

1110151200UTC

FRA/EDDF

AIRCRAFT WAS NOT READY FOR DEICING. DEICING IS CANCELLED AND TOBT IS DELETED.

FIRST NEW TOBT AND THEN NEW DEICING REQUEST REQUIRED.

NOTE: THE AIRPORT CDM PROCESS IS SUSPENDED UNTIL RECEPTION OF YOUR NEW TOBT.

Delay by N*ICE

If the ECZT target cannot be met by N*ICE after the deicing/anti-icing vehicles have been allocated, N*ICE must decide which possible measures can be taken as follows:

- On time allocation of more deicing/anti-icing vehicles (meeting the target ECZT),
- Postponement of the estimated deicing begin (ECZT update),

7.2.2 Begin of Deicing/Anti-icing

The deicing/anti-icing process can begin up to 5 minutes before or after (10-minute window) ECZT.

When the spraying of an aircraft begins the ACZT (Actual Commencement of Deicing Time) will be automatically set in the deicing/anti-icing vehicle.

The ACZT will be published and displayed in the “CSA-Tool” and “INFOplus” systems for both position and remote deicing.

The departure flight then receives the A-CDM status ADB (Actual Deicing Begin).

7.2.3 Deicing/Anti-icing Acceleration or Slow Down

If N*ICE determines during the deicing/anti-icing process that the given EDIT will deviate more than +/- 5 minutes, then N*ICE will update the EDIT accordingly in the “N*ICE dispo” system.

7.2.4 End of Aircraft Deicing/Anti-icing

N*ICE will perform the “Post Deicing/Anti-icing Check” and communicate the “Anti-icing Code” accordingly.

After the Anti-icing Code has been given and the deicing vehicles are clear of the aircraft the deicing crew will then set the AEZT (Actual End of Deicing Time) in the deicing/anti-icing vehicle.

The AEZT will be published and displayed in the “CSA-Tool” and “INFOplus” systems for both position and remote deicing.

The departure flight then receives the status ADE (Actual Deicing End).

In the case of position deicing/anti-icing the end of deicing equates to the TSAT.

7.3 Cancellation of Aircraft Deicing/Anti-icing

If an aircraft operator or PIC decides an aircraft deicing/anti-icing is no longer necessary, then this shall be communicated to N*ICE so that the request for services can be cancelled. N*ICE will then cancel the deicing/anti-icing request. The cancellation will then be displayed and published in the “CSA-Tool” and “INFOplus” systems as ICE = S (Cancellation of deicing).

The departure flight will then receive the A-CDM status “NOI” (No deicing).

Whenever FRA-Apron Control GmbH notices that a flight with requested deicing does not want to fulfil the deicing, pilots will be asked to cancel the deicing request via the communication channels as published in Appendix C.

For flights with a slot regulation, an improvement of the target times is aimed, if deicing is cancelled. Various external parameters affect the possibility of improvement in the individual case.

8. Start-up and Deicing/Anti-icing

Position deicing/anti-icing:

When the deicing/anti-icing is finished and the A-CDM Status ADE is received the PIC shall request "Start-up and Enroute Clearance" from DFS (Frankfurt Delivery) according to the given TSAT.

"REQUEST START-UP AFTER DEICING"

Thereafter follow push-back and taxi instructions to the designated RWY as given by FRA-Apron Control GmbH.

Remote deicing/anti-icing:

Once assigned a DP (R) for deicing/anti-icing and ready for push-back, the PIC shall request "Start-up and Enroute Clearance" from DFS (Frankfurt Delivery) according to the given TSAT.

"REQUEST START- UP FOR REMOTE DEICING"

Thereafter follow push-back and taxi instructions to the DP as given by FRA-Apron Control GmbH.

9. Special Procedure

9.1 Deactivation of SatCom-System during Remote Deicing

As a rule, aircrafts will be deiced with deactivated broadband/microwave functions of SatCom-System such as onboard internet or television only due unknown radio emission level. To ensure this, N*ICE will ask for confirmation during the radiotelephony communication with the pilot before deicing begin.

9.2 NMOC for "Adverse Conditions"

In situations with "Adverse Conditions" it is possible for the DFS (Tower) to take the following measures in relation to the NMOC:

- Timely information about extreme situations to the NMOC Supervisor,
- Increasing the taxi times using the CSA-Tool function "Variable Taxi Times",
- Only for departure flights with a requested deicing/anti-icing in deicing/anti-icing situations by extending the Slot Tolerance Window (max. CTOT +30 minutes). The extension is only valid for one hour and thereafter must be coordinated anew,
- Extension of the Slot Tolerance Window for all departure flights (max. CTOT +30 minutes). The extension is only valid for one hour and thereafter must be coordinated anew,
- For any one particular departure flight (e.g. heavy delay) a certain time of take-off (TTOT) can be agreed upon after coordination with the NMOC.

9.3 Irregular Operation Modes

In irregular situations it is possible to activate the following operation modes:

A-CDM Operation Mode "simplified sequencing"

This special operation mode can be activated by N*ICE in case of snowfall or high deicing demand, whenever a stable pre-planning (allocation of deicing location) is no longer possible and target times cannot be guaranteed.

A simplified sequencing is used for the short-term planning of deicing and allocation of a deicing location for the next hour.

- Start-up procedure according to TSAT is still valid. Start-up clearance via datalink is not possible (check ATIS)
- An aviation world express will inform airlines that the TSAT may be deleted for flights with "Deicing requested". The information to pilots in this case will be: "You are listed for deicing, wait for deicing location"
- Reissue of TSAT as soon as target times for deicing are available

A-CDM Emergency Mode

This special operation mode can be activated, if the “simplified sequencing” still not enables a stable short-term planning of deicing.

The special operation mode can also be activated in case of irregular operations (e.g. system disturbance), if target times are no longer valid.

- Start-up procedure according TSAT is still valid. Start-up clearance via datalink is not possible (check ATIS)
- An aviation world express will inform airlines that the TSAT may be deleted for flights with “Deicing requested”. The information to pilots in this case will be: “You are listed for deicing, wait for deicing location”
- Reissue of TSAT as soon as target times for deicing are available

Start-Up procedure according to TSAT is suspended

As last level of escalation the Start-Up procedure according to TSAT can be suspended in case of non-reliability of target times for departure clearance as last level of escalation.

- Pilots request start-up clearance via r/t when actually ready
- Timeframe for start-up clearance will no longer be taken into account
- Pilots reporting ready will get a start-up approval. Apron control will process the flights sequentially
- N*ICE will process the flights sequentially regarding the TOBT
- Start-up clearance via datalink is not possible
- An aviation world express will inform the airlines about the suspension of start-up procedure according to TSAT

9.4 Special Procedure US-Flights

To manage the removal of passenger bridges or passenger stairs for significantly delayed US-departures with deicing request, this special procedure applies in the following cases:

- During the A-CDM Operation Mode “Simplified Sequencing”
- During the A-CDM Emergency Mode

Within those operation modes, TSAT, target times of deicing and deicing location for flights with the A-CDM status “DIR” or “ICE=E” may be deleted. When deicing target times for the flights are available, the TSAT and the deicing location are reissued.

The TOBT still needs to be updated in both special operations modes. Therefore, all ground-handling activities need to be completed when the TOBT is reached. Due to the risk of high compensation claims, this special procedure allows to leave the aircraft’s doors open after TOBT, if no TSAT and target times of deicing are published for this specific flight. It is sufficient to leave one door open.

The application of this special procedure is arranged between airline and responsible ground-handler (WISAG or BVD).

10. Special Deicing Services

“Hands on Checks”, “Clear Ice Checks”, “Under wing deicing”, “Hot Air Deicing” (main and nose gear) or inspections of the center engines cannot be performed on a DP or apron area with engines running and shall be requested at the earliest possible time (see Appendix C).

However, in case of critical holdover times FRA Apron Control GmbH will attempt to assign a ramp area for the performance of these checks, under consideration of all operational and capacity aspects. The PIC shall be responsible for determining compliance concerning aircraft performance, aircraft procedures, company procedures, related manuals and the assessment of and adherence to the correct holdover times.

Propeller driven aircraft cannot be deiced/anti-iced on a DP or ramp area with propellers running.

“Post Deicing/Anti-icing Check” on a DP or ramp area can only be performed visually, so that nobody is endangered by walking close to hazardous areas around an aircraft with running engines. This check is therefore limited to surfaces that can be visually inspected properly (aircraft upper aerodynamic surfaces, fuselage).

11. Fan Blade Deicing

The aircraft operator must be aware that fan blade deicing is not an integral part of the aircraft deicing/anti-icing process. Fan blade deicing must be requested separately from Fraport AG Ground Services (Phone +49 (0) 69 690 70631) and cannot be performed on a DP or ramp area. The aircraft operator must take into consideration the duration of the process and shall revise the TOBT accordingly.

Aircraft deicing/anti-icing shall be carried out after fan blade deicing is completed.

12. Quality Assurance and Control

Before and during the annual winter season N*ICE as provider of deicing/anti-icing of aircraft on the ground and as an entity involved with the Aircraft Deicing Plan shall be audited in regular intervals by neutral, binding and common quality checks in order to ensure safety and the highest possible quality to be extended to the aircraft operators. This shall include the ADF tank farms and the ADF stored therein. In more detail, this audit shall be comprised of - but is not limited to - the following items:

- Personnel (training according to actual SAE-Standards, comprehension, authorization, supervision, responsibilities, training records, etc.),
- Standards and procedures (availability, comprehension, application),
- ADF (approval, storage, maintenance, documentation, mixtures applied, viscosity checks performed),
- Deicing/anti-icing vehicles and ADF tank farms (maintenance according to given regulations, suitability for fluids used).

All such audits shall be performed according to the procedures as per SAE standards which is the standard for “N*ICE Quality Assurance Procedures for Aircraft Deicing/Anti-icing Fluids” and “N*ICE Operations Manual for Aircraft Deicing on the Ground”.

In case of any deviation pertaining to the compliance of rules or guidelines as written in Chapter 3 appropriate steps will be immediately taken by N*ICE to re-establish compliance with all rules and guidelines.

In case of disruptions to N*ICE operations or on request of any one or multiple entities involved N*ICE shall initiate a “Quality Control Meeting” with the goal being to critically review and evaluate the preceding deicing/anti-icing operation, examination of adherence to the established operating procedure or any deviations thereof. Any deviations and their justification will be analyzed and input or complaints from any one aircraft operator shall be considered.

The review’s goal is to make possible improvements to the established procedures and harmonisation thereof when possible and/or necessary with the results being published by N*ICE.

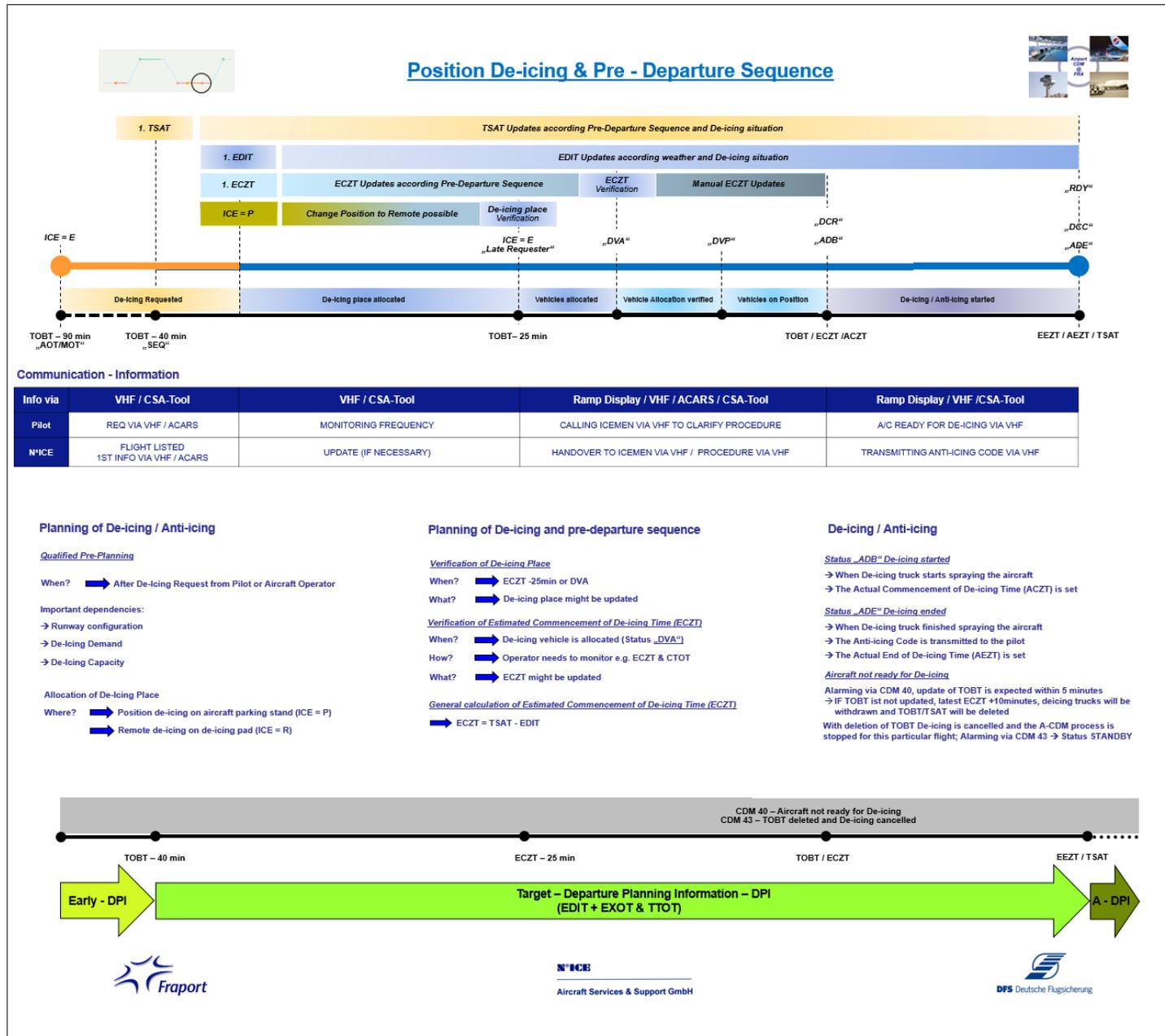
13. Appendix A - Glossary

Abbreviations and Definitions used in the Frankfurt Aircraft Deicing Plan

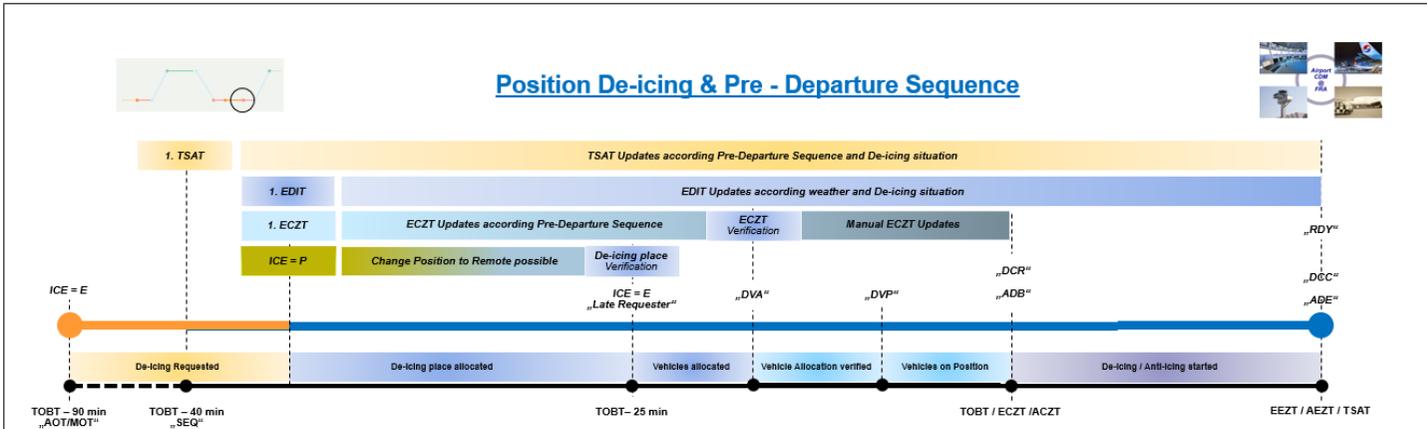
ARR	Arrival
ACARS	Aircraft Communications Addressing and Reporting System
A-CDM	Airport Collaborative Decision Making
ADC	Aircraft Deicing Center
ADF	Aircraft Deicing/Anti-icing Fluid
AIP	Aeronautical Information Publication
Anti-icing	Application of ADF onto clean aircraft surfaces (after deicing) to prevent deposition of snow, ice or hoarfrost
AOBT	Actual Off-Block Time
AOC	Airline Operators Committee
ACZT	Actual Commencement of Deicing Time
ARP	Aerospace - Recommended Practice
ATC	Air Traffic Control
ATC Callsign	Air Traffic Control Callsign for a flight as filed in the flight plan, for ATC purposes only
ATIS	Automatic Terminal Information System
A-VDGS	Advanced Visual Docking and Guidance System (Ramp display)
AWE	Aviation World Express
BECMG	Becoming
Brand-name	Table Hold-over time table for a specific type of approved ADF of a specific brand (manufacturer)
CTOT	Calculated Take Off Time for ATC purposes
CSA-Tool	Common Situational Awareness Tool
Deicing	Procedure by which frost, ice, slush or snow is removed from an aircraft in order to provide clean surfaces (note: the Aircraft deicing Plan mostly refers to „deicing“ as the combination of deicing and anti-icing)
DEP	Departure
DFS	Deutsche Flugsicherung GmbH (German Air Traffic Control)
DP	Deicing pad
DPW	Deicing pads DP1 and DP2
DWD	Deutscher Wetterdienst (German Meteorological Services)
ECZT	Estimated Commencement of Deicing Time
EDIT	Estimated Deicing Time
EEZT	Estimated End of Deicing Time
EOBT	Estimated Off Block Time for ATC purposes
ETOT	Estimated Take-Off Time
EXOT	Estimated Taxi-Out Time
Fraport AG	Frankfurt Airport Services Worldwide (Airport Operator)
Generic Tables	Hold-Over Timetables released by FAA for Anti-icing fluids. These tables are not specific for any manufacturer or brand-name
HCC	Hub Control Center
HOT	Holdover Time
Holdover Time	Estimated time for which an Anti-icing fluid will prevent the formation of frost or ice and the accumulation of snow on the protected surfaces of an aircraft, under specific weather conditions as defined in the hold-over timetables.
IMC	Instrument Meteorological Conditions

ISO	International Standards Organisation
LHO	Living Human Organs
MHz	Megahertz
MTOW	Maximum Take Off Weight
n/a	not available
NMOC	Network Manager Operations Center- (Central Flow Management Unit von EUROCONTROL)
OAT	Outside Air Temperature
P	Position deicing/anti-icing on the aircraft gate/ramp position
PIC	Pilot in Command
PROB	Probability
R	Remote deicing/anti-icing on a deicing pad
RWY	Runway
SAE	Society of Automotive Engineers
SatCom	Satellite Communication Systems
TEMPO	Temporary
TOBT	Target Off-Block Time
TSAT	Target Start-up Approval Time
TWR	Tower
VHF	Very High Frequency
VMC	Visual Meteorological Conditions

14. Appendix B – A-CDM Process Poster



Position De-icing & Pre - Departure Sequence



Communication - Information

Info via	VHF / CSA-Tool	VHF / CSA-Tool	Ramp Display / VHF / ACARS / CSA-Tool	Ramp Display / VHF / CSA-Tool
Pilot	REQ VIA VHF / ACARS	MONITORING FREQUENCY	CALLING ICEMEN VIA VHF TO CLARIFY PROCEDURE	A/C READY FOR DE-ICING VIA VHF
N°ICE	FLIGHT LISTED 1ST INFO VIA VHF / ACARS	UPDATE (IF NECESSARY)	HANDOVER TO ICEMEN VIA VHF / PROCEDURE VIA VHF	TRANSMITTING ANTI-ICING CODE VIA VHF

Planning of De-icing / Anti-icing

Qualified Pre-Planning

When? ➔ After De-icing Request from Pilot or Aircraft Operator

Important dependencies:

- ➔ Runway configuration
- ➔ De-icing Demand
- ➔ De-icing Capacity

Allocation of De-icing Place

- Where? ➔ Position de-icing on aircraft parking stand (ICE = P)
- ➔ Remote de-icing on de-icing pad (ICE = R)

Planning of De-icing and pre-departure sequence

Verification of De-icing Place

- When? ➔ ECZT -25min or DVA
- What? ➔ De-icing place might be updated

Verification of Estimated Commencement of De-icing Time (ECZT)

- When? ➔ De-icing vehicle is allocated (Status „DVA“)
- How? ➔ Operator needs to monitor e.g. ECZT & CTOT
- What? ➔ ECZT might be updated

General calculation of Estimated Commencement of De-icing Time (ECZT)

- ➔ ECZT = TSAT - EDIT

De-icing / Anti-icing

Status „ADB“ De-icing started

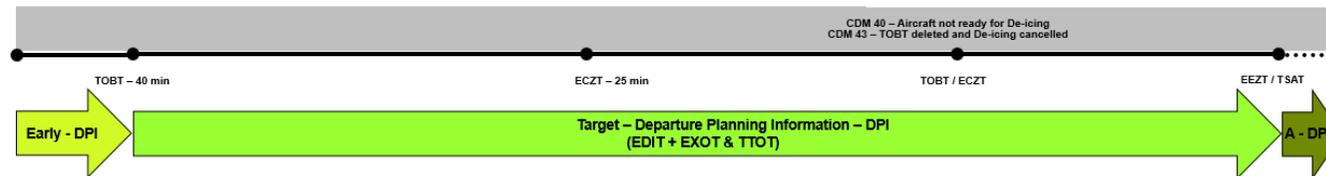
- ➔ When De-icing truck starts spraying the aircraft
- ➔ The Actual Commencement of De-icing Time (ACZT) is set

Status „ADE“ De-icing ended

- ➔ When De-icing truck finished spraying the aircraft
- ➔ The Anti-icing Code is transmitted to the pilot
- ➔ The Actual End of De-icing Time (AEZT) is set

Aircraft not ready for De-icing

- Alarming via CDM 40, update of TOBT is expected within 5 minutes
- ➔ IF TOBT is not updated, latest ECZT +10minutes, deicing trucks will be withdrawn and TOBT/SAT will be deleted
- With deletion of TOBT De-icing is cancelled and the A-CDM process is stopped for this particular flight; Alarming via CDM 43 ➔ Status STANDBY



N°ICE
Aircraft Services & Support GmbH



15. Appendix C – Deicing/Anti-icing Service Request

For Aircraft Deicing/Anti-icing Service requests at Frankfurt Airport please contact:

VHF: 121.985 MHz „Frankfurt Deicing“

or

Telephone: (0 69) 6 90 - 3 05 60

Requests per telephone only as a last resort

Requests for deicing can also be made utilising **ACARS**, if the aircraft operator is equipped with the required EDP systems and connectivity is available.

After submission of the request for deicing/anti-icing the flight crews shall monitor the related radio frequency and follow instructions given. The communication procedure for deicing services is described in Appendix D and E.

Special situations shall be communicated as soon as possible when known.

Note: From May 1st until October 14th of every year requests for aircraft deicing/anti-icing services can only be made via telephone number +49 069 690 30560.

Requests via VHF or ACARS during this time frame will not be processed.

	Radio Set 1		Radio Set 2*		Remarks
	Aircraft	FRA Apron	Aircraft	N*ICE ICEMAN	
When Approaching the Deicing Pad	FRA Apron, <i>(Callsign)</i> , request push back for remote Deicing on Deicing Pad (x).	<i>(Callsign)</i> , <i>your push back is approved.</i>			
	FRA Apron <i>(Callsign)</i> , request taxi for Deicing at Deicing Pad (x).	<i>(Callsign)</i> , <i>taxi to Deicing Pad (x), via TWY (X).</i>			According to instructions given by FRA Apron Control.
		<i>(Callsign)</i> , contact ICEMAN (x) for coordination of deicing procedure at xxx.xx MHz on second set			Whenever operationally possible, Apron Control will require pilots to contact deicing frequency while waiting as next aircraft to taxi onto DP at stopbar short of taxiway Y
	<i>(Callsign)</i> , affirm		ICEMAN (x), <i>(Callsign)</i>	(A) <i>(Callsign)</i> , <i>advise treatment (deicing/anti-icing procedure) required and the coldest known tank-temperature</i> OR (B) <i>(Callsign)</i> , <i>stand-by</i>	either communication (A) or (B)
			(A) <i>(Callsign)</i> , coldest known tank-temperature is xxx, request (type of de/anti-icing and areas to be treated) OR (B) <i>(Callsign)</i> , coldest known tank-temperature is xxx, suggest a proper treatment (deicing/anti-icing procedure)	(A) <i>(Callsign)</i> , <i>affirm procedure (repeat type of de/anti-icing and areas to be treated)</i> OR (B) <i>(Callsign)</i> , <i>recommend treatment xxx (deicing/anti-icing procedure)</i>	This communication may either take place when taxiing to deicing pad or after arrival to deicing pad. N*ICE ICEMAN will coordinate deicing procedure as soon as previous deicing is completed
			<i>(Callsign)</i> , <i>affirm procedure (repeat type of de/anti-icing and areas to be treated)</i>	<i>(Callsign)</i> , <i>please recontact Apron and contact again when parking break is set at deicing pad</i>	
			<i>(Callsign)</i> , affirm		
	FRA Apron <i>(Callsign)</i> , request taxi for Deicing at Deicing Pad (x).	<i>(Callsign)</i> , <i>taxi to Deicing Pad (x), via TWY (X).</i>			

	Radio Set 1		Radio Set 2*		Remarks	
	Aircraft	FRA Apron	Aircraft	N*ICE ICEMAN		
After Arriving to Deicing Pad	(Callsign), at Deicing Pad (x)	(Callsign), contact ICEMAN (x) for deicing at xxx.xxMHz on second set				
	(Callsign), affirm					
			ICEMAN (x), (Callsign), on Deicing Pad	(Callsign), standing by to deice, confirm parking brakes set	After the aircraft is positioned at the deicing pad	
			ICEMAN (x), (Callsign), parking brakes set	(Callsign), affirm parking brakes set. Vehicles will approach the aircraft now. Please deactivate SatCom-system, if available on-board and advise when aircraft is configured and ready for deicing		
			(Callsign), SatCom-system deactivated and aircraft configured for deicing.	(Callsign), affirm, we start deicing/anti-icing now		
			(Callsign), affirm			
	Deicing/Anti-Icing treatment takes place					
				(Callsign), Deicing complete; Advise when ready for information.		
			(Callsign), affirm; ready to copy.	(Callsign), Anti-Icing Code: 1. fluid type (I or IV), 2. fluid name (manufacturer and brandname), type IV only, 3. concentration of fluid, type IV only, 4. begin holdovertime local, 5. post deicing/anti-icing check completed.	Aircraft shall repeat Deicing/Anti-Icing code	
			(Callsign), affirm. 1. fluid type (I or IV), 2. fluid name (manufacturer and brandname), type IV only, 3. concentration of fluid, type IV only, 4. begin holdovertime local, 5. post deicing/anti-icing check completed.	(Callsign), affirm. Personnel and Equipment are clear of aircraft. Recontact Apron for further taxi instructions.		
		(Callsign), Personnel and Equipment are clear of aircraft. Contacting Apron now.	(Callsign), affirm	After Deicing/Anti-icing completed and all vehicles in safe position contact Apron Control. Aircraft shall wait for "all clear" signal.		
	FRA Apron, (Callsign), on Deicing Pad (x), ready to taxi			FRA Apron will give further instructions.		

*communication at Radio Set 2 may be parallel to Radio Set 1

Caution: Due to jet blast exposure to the deicing/anti-icing vehicles and teams only minimum power shall be used for aircraft movements onto and off the deicing pads.

16.2 Communication Procedure DP3 and DP4

	Radio Set 1		Radio Set 2*		
			Aircraft	N*ICE ADC	Remarks
On Parking Stand			<i>(Callsign), request Deicing</i>	<i>(Callsign), you are listed for Deicing, please monitor this frequency</i>	When an aircraft is serviced on a remote-Deicing position, the communication between PIC and provider is conducted via VHF-Frequency.
			<i>(Callsign), monitoring frequency</i>	[later] <i>(Callsign), Deicing will take place on remote Deicing Pad xxx. For Start-up according TSAT contact Delivery on frequency 121.905.</i>	
			<i>(Callsign), contacting delivery on frequency 121.905.</i>	<i>(Callsign), affirm</i>	
		FRA Delivery			Remarks
		<i>FRA Delivery, (Callsign), request start up for remote Deicing.</i>	<i>(Callsign), start up approved, cleared to destination (x), via SID and flight plan route, squawk (x). Contact Apron on frequency (x).</i>		
		<i>(Callsign), affirm.</i>			

	Radio Set 1		Radio Set 2*		Remarks
	Aircraft	FRA Apron	Aircraft	N*ICE ICEMAN	
When Approaching the Deicing Pad	FRA Apron, <i>(Callsign)</i> , request push back for remote Deicing on Deicing Pad (x).	<i>(Callsign)</i> , <i>your push back is approved.</i>			
	FRA Apron <i>(Callsign)</i> , request taxi for Deicing at Deicing Pad (x).	<i>(Callsign)</i> , <i>taxi to Deicing Pad (x), via TWY</i> <i>(X) and follow follow me car onto</i> <i>Deicing Pad (x).</i>			According to instructions given by FRA Apron Control.
	<i>(Callsign)</i> , at Deicing Pad (x)	<i>(Callsign)</i> , affirm, contact ICEMAN (x) for deicing at xxx.xxMHz on second set			

	Radio Set 1		Radio Set 2*		Remarks
	Aircraft	FRA Apron	Aircraft	N*ICE ICEMAN	
After Arriving to Deicing Pad	(Callsign), affirm		ICEMAN (x), (Callsign), on Deicing Pad	(Callsign), standing by to deice, confirm parking brakes set	<u>During the winter season, additional visual aids will be used. These are intended to a signal to the pilot that the aircraft may not be moved until all deicing vehicles have reached the safety zone. For this purpose, "STOP" is displayed on the visual aids.</u>
			ICEMAN (x), (Callsign), parking brakes set	(Callsign), affirm parking brakes set. Vehicles will approach the aircraft now. advise treatment (deicing/anti-icing procedure) required and the coldest known tank-temperature	
			(A) (Callsign), coldest known tank-temperature is xxx, request (type of de/anti-icing and areas to be treated) OR (B) (Callsign), coldest known tank-temperature is xxx, suggest a proper treatment (deicing/anti-icing procedure)	(A) (Callsign), affirm procedure (repeat type of de/anti-icing and areas to be treated) OR (B) (Callsign), recommend treatment xxx (deicing/anti-icing procedure)	either communication (A) or (B)
			(A) (Callsign), affirm OR (B) (Callsign), affirm procedure (repeat type of de/anti-icing and areas to be treated)	(Callsign), Please deactivate SatCom-system, if available on-board and advise when aircraft is configured and ready for deicing	
			(Callsign), SatCom-system deactivated and aircraft configured for deicing.	(Callsign), affirm, we start deicing/anti-icing now	
			(Callsign), affirm		
	Deicing/Anti-Icing treatment takes place				

	Radio Set 1		Radio Set 2*		Remarks
	Aircraft	FRA Apron	Aircraft	N*ICE ICEMAN	
After Arriving to Deicing Pad	<i>Deicing/Anti-Icing treatment takes place</i>				
				(Callsign), <i>Deicing complete; Advise when ready for information.</i>	
			(Callsign), affirm; ready to copy.	(Callsign), Anti-icing Code: 1. fluid type (I or IV), 2. fluid name (manufacturer and brandname), type IV only, 3. concentration of fluid, type IV only, 4. begin holdovertime local, 5. post deicing/anti-icing check completed.	Aircraft shall repeat Deicing/Anti-icing code
			(Callsign), affirm. 1. fluid type (I or IV), 2. fluid name (manufacturer and brandname), type IV only, 3. concentration of fluid, type IV only, 4. begin holdovertime local, 5. post deicing/anti-icing check completed.	(Callsign), affirm. Personnel and Equipment are clear of aircraft. Recontact Apron	<u>While being in contact with the aircraft the visual aids will display "contact apron for taxi".</u>
			(Callsign), Personnel and Equipment are clear of aircraft. Contacting Apron now.	(Callsign), affirm	After Deicing/Anti-icing completed and all vehicles in safe position contact Apron Control. Aircraft shall wait for "all clear" signal.
	FRA Apron, (Callsign), on Deicing Pad (x), ready to taxi				FRA Apron will give further instructions.

*communication at Radio Set 2 may be parallel to Radio Set 1

Caution: Due to jet blast exposure to the deicing/anti-icing vehicles and teams only minimum power shall be used for aircraft movements onto and off the deicing pads

17. Appendix E - Communication Procedure for Deicing/Anti-icing of Aircraft on Aircraft Parking Stands

		Radio Set 1	Radio Set 2*		
			Aircraft/Flightcrew	N*ICE ADC	Remarks
On Parking Stand			(Callsign), request Deicing.	(Callsign), you are listed for Deicing, please monitor this frequency.	When an aircraft is serviced on a gate-position, the communication between PIC and provider is conducted via VHF-Frequency.
			(Callsign), monitoring frequency.	[later] (Callsign), Deicing will take place on your current parking-stand. Contact Iceman on frequency (x) for further Info.	
			(Callsign), affirm, contacting Iceman on frequency (x).	(Callsign), affirm.	
			Aircraft/Flightcrew	N*ICE ICEMAN	Remarks
			ICEMAN (x), (Callsign), on Position (x).	(Callsign), advise treatment (deicing/anti-icing procedure) required and the coldest known tank-temperature.	
			(A) (Callsign), coldest known tank-temperature is (x), request (type of de/anti-icing and areas to be treated). OR (B) (Callsign), coldest known tank-temperature is (x), suggest a proper treatment (deicing/anti-icing procedure).	(A) (Callsign), affirm procedure (repeat type of de/anti- icing and areas to be treated). OR (B) (Callsign), recommend treatment (x) (deicing/anti- icing procedure).	either communication (A) or (B)
			(A) (Callsign), affirm. OR (B) (Callsign), affirm procedure (repeat type of de/anti-icing and areas to be treated).	(Callsign), advise when aircraft is configured and ready for deicing.	
			(Callsign), aircraft configured for deicing.	(Callsign), affirm, we start deicing/anti-icing now.	
			(Callsign), affirm.		
	Deicing/Anti-Icing treatment takes place				

On Parking Stand	Radio Set 1		Radio Set 2*		
			Aircraft/Flightcrew	N*ICE ICEMAN	Remarks
	Deicing/Anti-Icing treatment takes place				
				(Callsign), Deicing complete; Advise when ready for information.	
			(Callsign), affirm; ready to copy.	(Callsign), Anti-Icing Code: 1. Fluid Type (I or IV), 2. Fluid Name (manufacturer and brandname), Type IV only, 3. Concentration of fluid, Type IV only, 4. Begin Holdover Time local, 5. Post Deicing/Anti-Icing Check completed.	
			(Callsign), affirm Anti-Icing Code. [Aircraft may repeat Deicing/Anti-Icing Code]	(Callsign), affirm. Deicing Personnel and Deicing Equipment are clear of aircraft. Please contact Delivery on frequency (x).	
			(Callsign), affirm. Deicing Personnel and Deicing Equipment are clear of aircraft. Contacting Delivery now.	(Callsign), affirm.	
	Aircraft/Flightcrew	FRA Delivery			Remarks
	FRA Delivery, (Callsign), request start up for remote Deicing.	(Callsign), start up approved, cleared to destination (x), via SID and flight plan route, squawk (x). Contact Apron on frequency (x).			The PIC shall request Start-up after the Deicing/Anti-Icing process has been completed
	(Callsign), affirm.				
	Aircraft/Flightcrew	FRA Apron			Remarks
	FRA Apron, (Callsign), request push back/taxi.	(Callsign), your push back and taxi is approved.			According to instructions given by FRA Apron Control.
(Callsign), affirm.					

*communication at Radio Set 2 may be parallel to Radio Set 1

18. Appendix F - 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 deicing	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	<u>2-8</u>	<u>14</u>	up to 22	DP2 and DP4 ²	OAT +0°C or lower all day, cloudless weather, low to middle humidity hoarfrost buildup on aircraft possible (possible necessity for deicing/anti-icing of long-haul flights)
3.	Small contingency	<u>2-15</u>	<u>14-21</u>	up to 32	DP2 and DP4 DP1, or DP3 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	<u>2-26</u>	<u>21-25</u>	up to 48	DP1, DP2 and DP4 DP3 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	<u>2-34</u>	<u>25</u>	<u>up to 59</u>	DP1, DP2, DP3, DP4	Any kind of precipitation (SN/FZFG/FZRA) >/= 60% to 90% probability (or PROB40 in last TAF)

* The Provider's Capacity Allocation Matrix represents the maximum available net capacity, which will be adjusted to the actual demand. A total of 65 vehicles are kept available, of which 6 vehicles serve as an operational reserve in the event of technical problems.

² Depending on the actual traffic volume the use of DP 4 can be replaced by DP 3.

19. Appendix G - General DP Allocation Plan

DP Allocation							
Maximum aircraft size assigned to a remote area or DP according to aircraft type: Code C (max. A321), Code E with 2 engines (max B77W), Code E (Max B744), Code F (max. A380)							
DPW (DP-West)				Other deicing areas			
DP1	DP2 (DP2E, DP2C und DP2W)			DP3 (DP3E, DP3W)		DP4 (DP4E, DP4W)	
	E = East Lane	C = Center Lane	W= West Lane	<u>DP3E</u> (N7-Blue)	<u>DP3W</u> (N7-Orange)	<u>DP4E</u> (V159)	<u>DP4W</u> (V161)
F	C	F	C	<u>C</u>	<u>C</u>	<u>E (with 2 engines)</u>	<u>E (with 2 engines)</u>

Note:

- The DP Designator in parenthesis will be displayed in systems N*ICE dispo, INFOplus and CSA-Tool accordingly.
- DP-West (DPW) includes DP1 und DP2 (see page 8).
- Location of the deicing areas can also be found in AIP EDDF AD2 2-5.