Zurich Airport

Winter Operation at Zurich Airport

Issued by

ZRH Airport Steering

Issued by:
Philip Gentsch
Expert Winter Operation & Deicing FZAG

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4.3.	**4-18**	**New Job Title**
4.3.5.	**4-24**	**New Office Location**
5.1.3.	**5-1**	**Not published on AOS headerline anymore**
10.2.3.	**10-7**	**Not published on AOS headerline anymore**
10.2.3.	**10-8**	**Not published on AOS headerline anymore**

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2. Record of Revisions

Revision No.	Dated	Date entered	by
12	1. November 2013	Update available on Internet	
13	1. November 2014	Update available on Internet	
14	1. November 2015	Update available on Internet	
15	1. November 2016	Update available on Internet	
16	1. November 2017	Update available on Internet	
17	1. November 2018	Update available on Internet	
18	1. November 2019	Update available on Internet	
19	1. November 2020	Update available on Internet	
20	1. November 2021	Update available on Internet	
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22	1. November 2023	Update available on Internet	
23	1. November 2024	Update available on Internet	
24	1. November 2025	Update available on Internet	

3. Introduction

3.1. Foreword

by Stefan Tschudin, Chief Operation Officer,
Member of the Executive Committee Zurich Airport (Flughafen Zürich AG)

Adverse weather conditions, be it in the form of snow, ice, freezing fog, freezing rain or frost, etc., impact airport operations during the winter months. Disrupting flight schedules, impairing ground handling, putting huge additional workload on all partners present at the airport and tremendously increasing the demand for coordination, to name a few, are the consequences.

Two Remote Deicing Pads, as main infrastructure for the Aircraft De- & Anti-icing, offer an efficient process time. The setup meets not only present environmental standards but keeps fulfilling the requirements of both, airlines and airport. Depending on the Deicing demand and Remote Deicing Pad delay situation, in order to evenly distribute the average Deicing delay, Deicing Coordination will decide on relief Deicings at the parking position (onstand Deicing); depending on the Deicing provider, Deicing might be carried out solely at the parking position.

Snow cleaning and clearing of runways and taxiways is a very demanding task. Airlines would like to operate their flights with as little delay as possible and avoid cancellations. A safe operation is only possible if runway conditions are within given brackets. The aim is to have at all time at least one of the three runways available for operations.

The present document contains a comprehensive overview of the organisation and the processes of the Deicing Coordination Unit. Even though the lead is with Zurich Airport (Flughafen Zurich AG), it continues to be a product of cooperation between airport, Swissport, dnata, AAS, Swiss as hub carrier, Skyguide, MeteoSchweiz, SR Technics, Jet Aviation Private Handling, AOC and various other service providers.

Zürich Airport is for all the cases of winter operation well prepared, but weather conditions come often as surprise. This situation then asks for a lot of flexibility from everybody involved.

So I would like to thank you in advance for your support to maintain Zürich Airport operational.

3.2. Environmental Compliance

by Emanuel Fleuti, Head of Environment, Flughafen Zurich AG

During a winter period, depending on weather conditions, 400,000-1,100,000 litres of aircraft Deicing fluid and 400,000-2,000,000 litres of apron and runway Deicing fluid is being used at Zurich airport.

The chemical substances applied (glycol, formiate) are very effective, but have adverse effects on the environment. Deicing fluid mixed with rain water from the apron or runway drainage enters the nearby river Glatt, which flows along the Western airport boundary. To discharge untreated Deicing sewage is not in compliance with the regulations of the Swiss Ordinance on Water Protection. Due to temporary fluctuations in the use of Deicing fluids, there are certain times of the year in which the river Glatt has to cope with peak loads. In consequence, during the Deicing period, bacterial growth and a shortage of oxygen may be found in the main ditch. For compliance reasons, Deicing sewage thus has to be pre-treated prior to discharge into the storm water system.

Depending on the carbon concentration three different procedures are in use for the treatment of the Deicing sewage today:

- ➔ Highly concentrated Deicing sewage (high carbon load) which drips off from aircraft is collected directly at the Deicing pads (DIP) Foxtrott and Charlie (drains/storage basins) or at the place of application in case of on-stand-Deicing (sweeper trucks). This sewage is either treated in the airport's distillation plant to recycle the glycol, or brought to a recycling plant.
- ➔ A large part of the Deicing sewage with a medium carbon load is treated in a spray irrigation system where it is sprayed on suitable grass land within the airport. The decomposition occurs in a natural way through the microbiological activity in the top 60 – 90 cm of the soil filter. The degradation rate reaches 99%.
- ➔ Low concentrated sewage is treated in retention filter ponds.

For efficiency reasons in the treatment of Deicing sewage and thus compliance with discharge requirements, Deicing operations at remote Deicing pads (RDP) are to be prioritised. Aircraft Deicing operations at the gates should be minimised and limited to peak operating times or to aircraft types unsuitable for RDP. Deicing operations may only take place where suitable retention of Deicing effluent is possible. This includes hard surfaces that are connected to the Deicing drainage system or that can be serviced with sweeper trucks.

As of the winter season 2014/2015, Zurich airport cleans 95% of the carbon load from Deicing sewage before discharging it into the river Glatt.

3.3. Administration

by Philip Gentsch, Expert Winter Operation & Deicing, Zurich Airport (Flughafen Zürich AG)

The intention of this manual is to give overall information about Winter Operation at Zurich Airport. It is written in cooperation with all services involved. It does not replace local instructions of the different organisations and covers the organisational and practical part of aircraft Deicing, runway inspections, reporting of runway conditions and surface cleaning.

The manual is available online to any interested party. Revisions are issued annually and available on 1st November.

Location on Internet:
www.zurich-airport.com

- ➔ on top of homepage click on "Business & Partners"
- ➔ Tab "Airlines & Handling"
- ➔ Tab "Flight Operations"
- ➔ Tab "Processes & Systems" - "Winter Operation"
- ➔ "Documents" (lower part); find pdf "Winter Operations at ZRH"

Direct link: Winter operation – Flughafen Zuerich (flughafen-zuerich.ch)

We kindly request you to inform us about errors and omissions. We are glad about inputs how the manual could be completed and enhanced.

Please send any suggestions to

Philip Gentsch or e-mail: philip.gentsch@zurich-airport.com

Expert Winter Operation & Deicing

OPSAD

Flughafen Zürich AG

P.O.Box

CH-8058 Zürich-Flughafen

Flughafen Zürich AG / Zurich-Airport: FZAG *used as abbreviation in this document*

Note: all timings in this document are Swiss Local Time

4. Organisations / Tasks / Competences

4.1. Flughafen Zürich AG (Zurich Airport)

4.1.1. ZRH Airport Steering

by Philip Gentsch, FZAG, Deicing Coordination

Location: Terminal 1

Office 3 - 922

Contacts: Tel.: +41 43 816 77 44

e-mail: airportsteering@zurich-airport.com

Availability:

- Duty Manager ZRH Airport Steering
- all year 04:30 LT until end of daily operation

Duties and competences:

- **central steering unit of ZRH Airport**
- **The Duty Manager Airport Steering is responsible throughout the shift(s) of the Deicing contingent, which shall correlate with the actual or forecasted weather and the expected Deicing demand. With the aim, to have sufficient Deicing capacity available at the airport, as agreed with the Deicing Provider(s)**
- **coordination of Deicing activities is delegated to the Deicing Coordination**
- **following organisations are located at the ZRH Airport Steering:**
  - **FZAG** — **- Airport Steering**
- Passenger Bus Disposition
- Parking Stand/Gate/Racetrack Disposition
- Airport Guide Disposition
  - **SWISS** — **- Hub Control**
  - **Swissport** — **- Station Control**
- Operation-Control
- Voice
- White Collar Disposition Check-in & Gate
  - **dnata** — **- Station Control (available upon call-in by A.S.)**
  - **ISS** — **- Cabin Cleaning Disposition**
- Crew Transportation Disposition
  - **Gate Gourmet** — **- Catering Truck Disposition**

- **Police** **- Staff Disposition for Security Control**

- **coordination of runway closures for cleaning/clearing with Winterops Coordinator/Snow Committee**
- **coordination of apron clearing with Apron Control, Handling Agents, Airport Authority**

4.1.2. Winterops Coordinator

by Philip Gentsch, FZAG Deicing Coordination

Location: Terminal 1

Office 3 - 922 (Airport Steering)

Contacts: Tel.: +41 43 816 77 56

e-mail: deicing@zurich-airport.com

Availability:

- from 1st November till 31st March
- Pikett from 05:00 LT until end of daily operation

Start of Operation:

- Forecasted heavy snow fall
- Sudden intense, continuous snow fall which will seriously affect airport operation
- If Skyguide intends to declare General Deicing with extended Slot Tolerance Window

Activation:

- by Duty Manager Airport Steering or Airport Manager
  - as definite call-in
  - prophylactic, based on critical weather forecast
  - on standby to be activated on short notice
- Start of Operation - 60 minutes after call-in

Duties and competences:

- **Helps improve coordination and supervision of all activities in regard to flight operation, with all services involved**
- **Keeps a "bird-eye" view of winter ops processes**
- **Organizes and leads the Snow Committee phone conferences (regular & ad-hoc)**
- **Avoids unilateral leadership decision of individual partners (->CDM !)**
- **IT system updates: verifies the accuracy of the TOBT management by SWISS HCC & Handling Agents (until end of aircraft handling process)**
- **Coordination with Skyguide Tower/FMP:**

- activation of ‘General Deicing with Extended Slot Tolerance Window Procedure’ of Eurocontrol Brussels (NMOC)

- **Coordination with Airport Steering/Snow Committee for clearing and cleaning of runways, taxiways and apron**
- **Coordinates by mean of the “Vorfeld-Schneeräumung” phone conference after consulting the partners an efficient cleaning of specific apron areas during weaker traffic hours; acts as Single-point-of-contact if process of “>5cm snow on apron areas” is active – involving the snow coordinator Airfield Maintenance (Einsatzleiter Schneeverlad) with his three autonomously working snow clearing teams (see as well details under chapter 5.6.7.)**
- **Participation in "Krisenstab Schnee"**
- **Regular contact and update with MeteoSchweiz office**
- **First point of contact in case of disagreements**
- **coordination of media information with Corporate Communications**
- **Keeps "Log Winterops Coordinator" updated**
- **Initiates calling in the Snow Committee emergency meeting**

4.1.3. Deicing Coordination (DC)

by Philip Gentsch, FZAG Deicing Coordination

Location: Terminal 1

Office 3 - 938

Contacts: Tel.: +41 43 816 77 00

e-mail: deicing@zurich-airport.com

Availability:

- from 1st October till 30th April
- from 05:00 LT until end of daily operation

Start of Operation:

- during Deicing activities
- when one or more Remote Deicing Pad(s) is/are in operation
- on request of any member of the Deicing Coordination

Activation:

- by Duty Manager Airport Steering
  - as definite call-in
  - prophylactic, based on critical weather forecast
  - on standby to be activated on short notice
- Start of Operation
  - 30 minutes after call-in during office hours
  - 60 minutes after call-in outside office hours

Duties and competences:

- **the Deicing Coordination is the central steering unit for aircraft Deicing at Zurich airport, looking after and coordinating the Deicing needs of the scheduled/charter and business aviation, as well as communicating with the various partners involved**
- **coordination of Deicing activities with all services and Deicing providers involved**
- **decision about on-stand Deicing or remote Deicing, as well as "repositioning" if needed**
- **IT system updates – TOBT management**

- **Secures that the chosen procedure time (Deicing times "A-J") corresponds to the actual prevailing Deicing time**
- **coordination of remote Deicing with Apron Control and Skyguide/Tower, depending on the runway configuration (Remote for Provider entitled to De-ice on the RDPs)**
- **coordination of relief onstand Deicing (as per expected/actual delay situation; best practice)**
- **coordination with Supervisor Tower Skyguide, DOS Apron Control:**
- **activation of the Deicing status 'General Deicing' continuous follow-up of Deicing progress**
- **continuous information of all partners about Deicing delays**

and if Winterops Coordinator not available:

- **coordination with Airport Steering/Snow Committee for clearing and cleaning of runways, taxiways and apron**
- **coordination with Skyguide Tower/FMP:**
  - **activation of 'General Deicing with Extended Slot Tolerance Window Procedure' of Eurocontrol Brussels (NMOC)**
- **coordination with home carrier about possible adjustment of schedule**
- **coordination of media information with Corporate Communications**

Formation / Organisation:

FZAG Deicing Coordinator (DC):

- lead Deicing Coordination
- decision: opening/closing of Remote Deicing Pads and number of trucks available per provider
- decision: on-stand Deicing / remote Deicing / repositioning for Deicing
- fix Deicing sequence for on-stand Deicing
- decision: activation of status General Deicing in coordination with ATC
- coordination DC – Apron Control
- coordination DC – Skyguide/Tower and Flow Management Position
- coordination DC – Remote Deicing Pads
- coordination DC – Airport Authority
- communication DC – crews
- decision about close-down of Deicing Coordination

Swissport Ramp Coordination Office:

- mobilisation of Deicing Truck Operators
- single point of entry for ad-hoc Deicings for SWP customers (if Deicing Organisation not deployed)

Swissport Deicing Coordinator:

- mobilisation of Deicing Truck Operators
- mobilisation of Remote Deicing Pad Coordinators
- decide about applicable Deicing procedure and mixture ration based on actual and forecasted met-conditions
- timely truck assignment for on-stand Deicing
- coordination of Deicing truck deployments on Remote Deicing Pads
- plan and arrange refill of trucks
- arrange staff rotation and meal breaks
- arrange and coordinate trouble shooting in case of technical irregularities with trucks

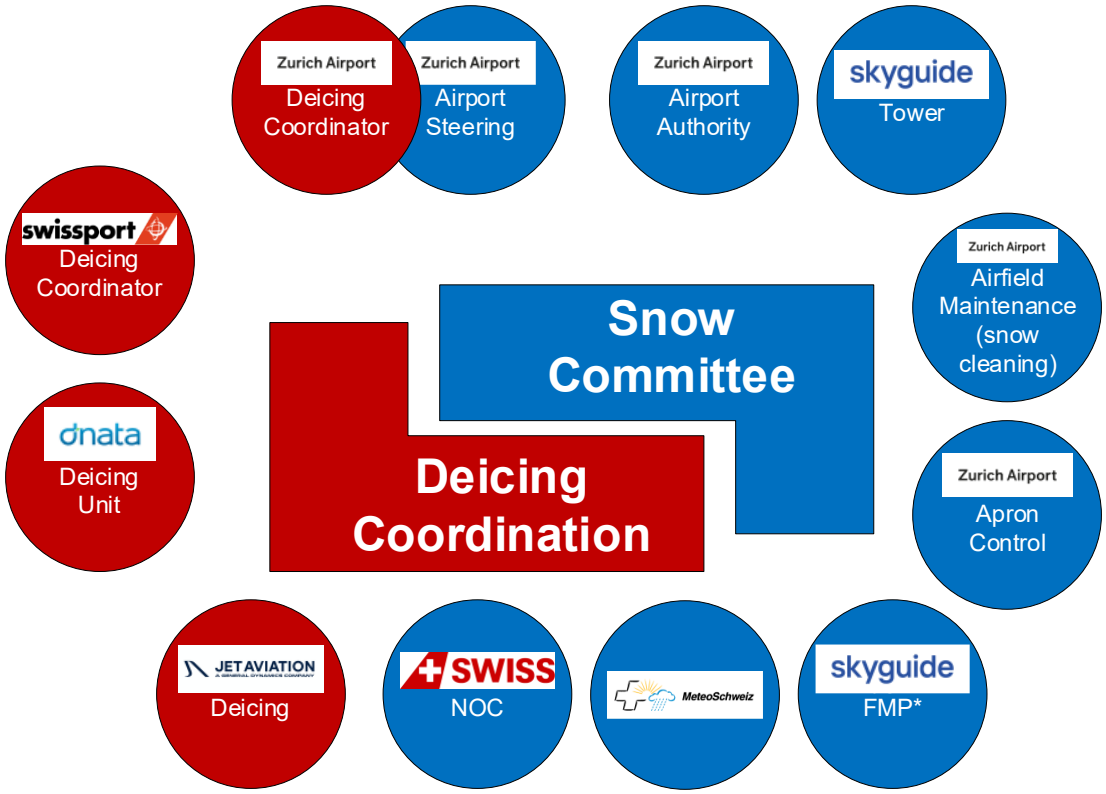
dnata Deicing Unit

- coordinate with FZAG Deicing Coordination: regular update/timings on number of trucks available for on-stand Deicing (no remote Deicing for time being)
- mobilisation of Deicing Truck Operators
- decide about applicable Deicing procedure and mixture ration based on actual and forecasted met-conditions
- timely truck assignment for on-stand Deicing
- update of AOS Deicing data (truck/spray start-end data)
- liaise with dnata Station control regarding proper TOBT setting for each on-stand Deicing
- plan and arrange refill of trucks
- arrange staff rotation and meal breaks
- arrange and coordinate trouble shooting in case of technical irregularities with trucks

Jet Aviation Deicing Unit

- coordinate with FZAG Deicing Coordination: regular update/timings on number of trucks available for on-stand Deicing (no remote Deicing for time being)
- mobilisation of Deicing Truck Operators
- decide about applicable Deicing procedure and mixture ration based on actual and forecasted met-conditions
- timely truck assignment for on-stand Deicing
- update of AOS Deicing data (truck/spray start-end data)
- plan and arrange refill of trucks
- arrange staff rotation and meal breaks
- arrange and coordinate trouble shooting in case of technical irregularities with trucks

Deicing Coordination members:



FMP* = Flow Management Position

In case of light snowfall or if snowfall is expected to last for only a short period the Deicing Coordination may operate with only the FZAG Deicing Coordinator and the Swissport Deicing Coordinator, or with either or, or none at all present after bilateral consultation and agreement (note: if FZAG Deicing Coordination not on site, FZAG Airport Steering keeps responsibility)

4.1.4. Airport Authority / Airport Manager

by Corinne Häberlin, FZAG Airport Authority

Location: Duty Office Airport Authority
O95

Contacts: Tel.: +41 43 816 21 11
e-mail: airportauthority@zurich-airport.com

Organisation:

2 Airport Managers on duty 05:15 - 23:00

1 Airport Manager on duty 23:00 – 05:15

Pikett Airport Manager standby 24h

Duties and competences:

- **continuous monitoring of weather development**
- **monitoring, assessment and measurement of runway conditions**
- **Runway Condition Report and SNOWTAM**
- **plan and initiate clearing and cleaning of runways, taxiways and apron**
- **coordinate closure of runways, taxiways and apron with Skyguide / Tower / FMP, Swiss-OCC, Apron Control, FZAG 'Winterdienst', Deicing Coordination, ZRH Airport Steering by the means of telephone conferencing or with immediate effect on own decision if needed**
- **summon Snow Committee**

Documentation

- Airport Managers make use of their own "Winter Operations Manual", which details the various duties, competences, tasks, checklists and guidelines. This manual summarizes all relevant information from winter services having a touch point with Airport Authority. The manual is stored in the document management system – "dms" of FZAG and is aimed and intended for internal use by the Airport Managers only; for any excerpt, apply to Airport Authority.

Clean Aircraft Concept (CAC)

- **If a flight crew does not adhere to the CAC, Airport Authority can be called to intervene. With effect 03.01.2019 following content was added to the AIP LSZH AD 2.1:**

5.4 Clean Aircraft Concept (CAC)
Clean Aircraft Concept as defined in ICAO Doc 9640 is applied; aircraft are de-iced according to the requirements of SAE AS6285C. Airport Authority can intervene in case of non-adherence.

4.1.5. Apron Control

by Head Apron Control FZAG

Location: Tower - Apron Control

A20 - 8. OG - 931

Contacts: Tel.: +41 43 801 13 50

Mobile: +41 76 356 74 44

e-mail: apron.control@zurich-airport.com

Organisation:

At least 2 Apron Controller from 05:30 LT until end of scheduled operation, all year
Daily Operations Support (DOS) position normally occupied from 06:00 to 22:00 LT

Duties and competences:

- Grants engine start-up and guides the aircraft safely and efficiently to the deicing pads, respectively onto the deicing lanes according to A-CDM process
- Shall assign the deicing pads and lanes for optimization purposes manually
- Responsible for the allocation of the deicing lanes considering the aircraft wingspan table
- Timely handover of flight crews to the pad coordinator to perform the deicing process on the pad
- Directs the aircraft from the deicing pad to the runway after the release from the pad coordinator
- Grants engine start-up after on-stand deicing according to A-CDM process
- Sets deicing status “on request” / “general” in DMAN / DARTS upon information by Deicing Coordinator
- Guides snow plow convois, “Rollinienreinigung” and other vehicles within the area of responsibility

Apron Control is supported by a deicing tool, which provides a holistic planning of departures in the DMAN (Departure Manager) and thus serves as a “decision support tool”.

Documentation:

- Overall service order for the aircraft de- and anti-icing process
  The aircraft de- and anti-icing are safety-related tasks and therefore the duties and responsibilities of all partners at Zurich Airport are clearly defined in a overall service order for aircraft de- and anti-icing. This overall service order was elaborated with all parties involved in the process and is regularly reviewed and updated. The document is stored according EASA Regulation 139/2014 in the safety management system (Flugplatzhandbuch) of FZAG.

4.1.6. Snow Committee

by Philip Gentsch, FZAG Deicing Coordination

Location: Duty Office Airport Authority
O95

Contacts: Tel.: +41 43 816 21 11
e-mail: airportauthority@zurich-airport.com

Start of Operation:

- continuous snowfall or freezing rain
- on request of any member of the Snow Committee

Activation:

through Airport Manager

- as definite call-in
- prophylactic, based on critical weather forecast
- on standby to be activated on short notice

by Telephone

- on short notice
- by means of Telephone Conference
- activated by Airport Manager, Airport Steering, Winterops Coordinator

Duties and competences:

- **coordination and decision about clearing and cleaning activities on runways, taxiways and apron**

Formation / Organisation:

Airport Manager

- coordination runway measurement
- plan and initiate clearing and cleaning of runways, taxiways and apron in coordination with the Duty Manager Airport Steering (or Winterops Coordinator if on duty) and Skyguide/Tower

FZAG Airport Steering/Winterops Coordinator:

- Head Snow Committee
- coordination of runway closures / runway cleaning with members of Deicing Coordination (Deicing Providers; to avoid Holdovertime issues) and ZRH Airport Steering (Handling Agents)

Supervisor SKYGUIDE / Tower

- representative of SKYGUIDE in Snow Committee
- coordination of runway closures / runway cleaning with Tower

DOS Apron Control

- representative of Apron Control in Snow Committee
- coordination of runway closures / runway cleaning with Apron Control

Representative FZAG 'Winterdienst'

- coordination Snow Committee – WHZ (Werkhofzentrale)
- representative of snow removal teams
- coordinate removal of Deicing fluid

Duty Manager SKYGUIDE / Flow Management Position

- coordination of activation and de-activation of Extended Slot Tolerance Window Procedure with SKYGUIDE/TWR and Eurocontrol/NMOC

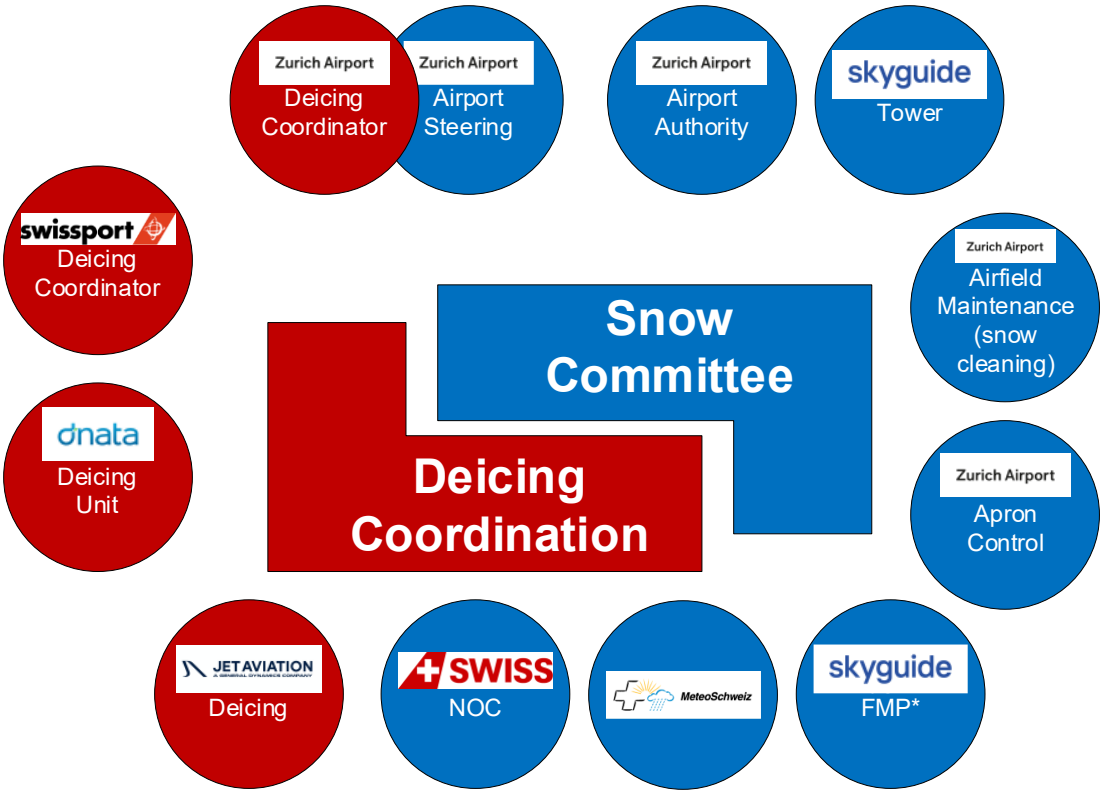
Meteorological Advisor MeteoSchweiz

- Information about actual weather situation
- Weather forecast

SWISS NOC:

- coordination runway closures / runway cleaning between OCC & Flight Dispatch
- know-how of aircraft performance vs. contaminated runways

Snow Committee members:



FMP* = Flow Management Position

4.1.7. Committee 'Winter Operation at Zurich Airport' known as 'Planungs-Snowcommittee'

by Philip Gentsch, FZAG Deicing Coordination

Activation:

- two meetings at the beginning (early October) and the end of winter season (early May)
- any time when needed
- on request of any member

Tasks:

- **manage processes in connection with Winter Operation at Zurich Airport**

Formation / Organisation:

Airport Authority

- Head Airport Authority - Responsible for part 'Cleaning / Clearing'

Deicing Coordination

- Head Deicing Coordination - Responsible for part 'Deicing Coordination'
- leading the meeting

Airfield Maintenance

- Head 'Winterdienst'

Apron Control

- Head FZAG Flight Ops & Representative Apron Control Procedures

Skyguide

- Representative Tower
- Representative FMP (Flow Management Position)

Handling

- Swissport: Head Aircraft Deicing
- dnata: Head Aircraft Deicing
- Jet Aviation: Head Aircraft Deicing & Operations Coordinator

Swiss

- Representative Operations
- Representative Flight Operations
- Station Manager

Airlines

- Helvetic // Edelweiss // Rega // CHAir

Business Aviation

- Various operators at ZRH

AOC

- Representative Airlines

Meteo Schweiz

Other interested Operators & Partners

4.2. SR Technics

currently no content

4.3. Swissport

by Christian Glauser, Swissport, Process Manager Deicing Services Tel. +41 43 815 07 70

4.3.1. Swissport Deicing Coordinator

Location: Deicing Coordination

Terminal 1 – Office 3 - 938

Contacts: Tel.: +41 43 815 08 44

Availability:

- from 1st October till 30th April — from 06:00 LT until end of operation (2 shifts)
- from 1st May till 30th September — by Swissport Ramp Coordination Office

Duties and competences:

- **integrated part of Deicing Coordination**
- **mobilise Deicing Truck Operators**
- **mobilise Remote Pad Coordinators**
- **decide about applicable Deicing procedure and mixture ratio based on actual and forecasted met-conditions**
- **check/responsible for ontime update of on-stand truck assignment and DAS/DAE / in RTC/AOS for ICE/on Stand deiced Aircraft**
- **coordination of Deicing truck deployments on Remote Deicing Pads**
- **plan and arrange refill of trucks for on-stand Deicing**
- **arrange staff rotation and meal breaks**
- **arrange and coordinate trouble shooting in case of technical irregularities**

Number of staff

20 Coordinators

Recruitment

The recruitment of the Coordinators is in the responsibility of Swissport.

Qualification

The Coordinators are selected and instructed by Swissport.

4.3.2. Swissport Deicing Truck Operators

Contacts: via Deicing Coordination

Tel.: +41 43 815 08 44

Availability:

- from 1st May till 30th September: - available on request - reaction time 60 minutes (one OnStand Truck)
- from 1st October till 30th April: - daily at 06:00 LT two operators to operate
  - OnStand trucks (Stammfahrer)
  - standby staff for full operation
  - standby staff for late shift – mobilised according weather forecast

Activation:

standby staff through Swissport Deicing Coordinator.

Duties and competences:

- **Deicing and anti-icing of aircraft according to rules stipulated in De- / Anti – icing manuals (DAM- De-/Anti-Icing Manual) issued by customer airlines & Global Airline Standards**
- **Deicing on-stand (inclusive transmission of De-/Anti-icing Code) or informs according internal rules the responsible person who in turn will inform the flight crew**
- **Deicing on Remote Deicing Pads**
- **secure parking of trucks after Deicing**

Communication:

- with Cockpit Crews (Deicing on-stand) ground-cockpit communication
- with RDP Coordinator trunked radio system
- with Deicing Coordination trunked radio system or mobile phone

Number of staff

120 Deicing Truck Operators

Recruitment

The recruitment of the Operators is in the responsibility of Swissport.

Qualification

Deicing Truck Operators are selected and instructed by Swissport.

Training

The training is performed by Swissport according to SAE based instructions and local procedures.

4.3.3. Swissport Deicing Trucks

Location:	4 Vestergaard Flexliner	T60
	8 Vestergaard Beta NG	T60

Availability:

- from 1st May till 30th September: on request (one onStand Truck) – reaction time 60 minutes
- from 1st October till 30th April: all trucks from 06:00 LT – end of operation

Activation:

by assigned Driver

Number of Trucks / Type of Trucks

4 Vestergaard Flexliner

tank 1	4'000 litres water	at 70ºC
tank 2	2'000 litres ADF Type I	at 70ºC
tank 3	2'000 litres ADF Type IV	cold

8 Vestergaard Beta NG

Tank 1	5'000 litres water	at 70ºC
Tank 2	3'000 litres ADF Typ I	at 70ºC
Tank 3	2'000 litres ADF Typ IV	cold

Note:

Spraying temperature measured at nozzle of all operated trucks 65ºC.

Maintenance and Repair

The maintenance shop of Swissport is responsible for the maintenance and repair of the Deicing trucks.

shop hours:	Monday till Sunday	06:00 – 23:30

Extension of operating hours are initiated by Swissport Coordinator in Deicing Coordination. In case of icing conditions / snowfall, the presence of technicians is secured.

4.3.4. Swissport Remote Deicing Pad Coordinator

Location: Remote Deicing Pads “Charlie” & “Foxtrott”

Contacts: via Deicing Coordination

Tel.: +41 43 815 08 44

Availability:

- from 1st October till 30th April at 06:30 LT
  - 2 Coordinators standby as from 06:00
  - 2 Coordinators standby for late shift
  - mobilized according to weather forecast

Activation:

through Swissport Deicing Coordinator

Duties and competences:

- **head of assigned Remote Deicing Pad**
- **responsible for safe Deicing and anti-icing of aircraft on the Deicing Pad according to stipulated rules**
- **capacity management on assigned Remote Deicing Pad**
- **specify fluids, fluid mix and Deicing procedures according to the actual weather and traffic conditions in cooperation with the Deicing Coordination**
- **contact crew before starting Deicing and request confirmation that aircraft is ready**
- **inform crew about de-/anti-icing completed**
- **inform crew (de-/anti-icing code) after completion of Deicing about**
  - **begin time of Deicing (last step)**
  - **applied fluid types and brand name**
  - **fluid mix-ratio, enabling crew to calculate holdover time**
  - **used Deicing procedure (one step / two step)**
  - **post Deicing check completed**
- **coordinate with Apron Control the opening and closure of individual deicing lanes**
- **coordinate with Apron Control before positioning Trucks onto a/the lane/s**
- **indicates lane available / ready for taxi in / ready for taxi out / ready for taxi in&out**
- **indicates refuelling of trucks well in advance through adequate input into the system (Tankbalken)**

- **during LVP-BV doubleclick (ready for taxi in&out) shall not be used, while when not in LVP-BV doubleclick shall be used to expedite traffic flow**
- **NOT responsible for the separation between aircraft (mix on different lanes) or aircraft – vehicles**
- **closes lanes, orders the trucks back to the parking/hut and indicates this trough the system when demand dropsmonitor parking of trucks in secure positions**
- **handover aircraft to Apron Control when Deicing is completed**
- **conduct and document regular briefings and skill checks with Deicing Truck Operators and Pad Coordinatores covering current, standard and fallback procedures**

responsible for correct handling of AOS Anzeigemaske or webbased fullback system panel incl. for truck exchange

Communication:

➢ with Cockpit Crews:	CUT-frequencies:	RDP Foxtrott	121.635
		RDP Charly	121.640
➢ with Deicing trucks	wireless disposition-tool (back-up: trunked radio system)		
➢ with Deicing Coordination	wireless disposition-tool (back-up: trunked radio system or mobile phone		
➢ with Apron Control	AOS Anzeigemaske or Fallback System (webbased) / phone		

Number of staff:

20 Coordinators

Recruitment

The recruitment of the Pad Coordinators is in the responsibility of Swissport.

Qualification

- good knowledge of the English language
- good knowledge of the phraseology of radio communication with the crews

Training

- The training as Pad Coordinator is performed by Swissport.
- The radio communication instruction is in line with SAE Standards and local procedures

4.3.5. Swissport Trouble Shooter (Tarmac-Aufsicht / Deicing Supervisor)

Location: Dock B
Office B20 0Z-986

Contacts: via Deicing Coordination
Tel.: +41 43 815 08 44

Availability

Standby organisation:

- 1st October – 30th April
- 05:00 – end of operations

Duties and competences:

- **Single point of entry for all Deicing activities during a shift**
- **Responsible, together with the Duty Manager Airport Steering (FZAG), to specify the contingent of Deicing resources (Trucks, Staff)**
- **active supervision on ramp during Deicing deployment**
- **assure quality control by taking fluid samples according SAE AS**
- **coordinate with SAE rules check of fluids and keep an updated library containing all measurement results as well as treated aircraft**
- **assure direct contact with Deicing Truck Operators when in operation**
- **monitor and assist Deicing Truck Operators in specifying**
  - **Deicing procedures (one step / two step)**
  - **fluid-mix**
  - **spraying techniques**
  - **driving technique**
- **initiate adjustment of procedures or fluid mix if required by changed conditions e.g. meteorological**
- **troubleshooting for technical problems**
- **link to the Swissport Deicing Coordinator in Deicing Coordination**
- **contact person for crews and airline staff in case of problems or complaints**

4.3.6. Swissport Trained person for clear ice check

Location: On-stand Tarmac

Contacts: via Deicing Coordination

Tel.: +41 43 815 08 44

Availability:

contracted airlines only available on request - reaction time 60 mi… …ore depature

Duties and competences:

- **clear ice check after Deici… …ng to rules stipulated in De- / Anti – icing manuals (… …Anti-Icing Manual) issued by customer airlines & AEA recommenda…**
-

Ops suspended during Winter 2025/26

Qualification

according to valid requirements

4.3.7. Swissport Apron Coordinator (Mr SNOW & ICE PATROL)

Location: on tarmac

Contacts: via Swissport BluCoDi
Tel.: +41 43 815 02 22

Availability:

Standby organisation:

- 1st October – 30th April
- 24 hours

Activation (Mr SNOW)

by Airfield Maintenance (automatic if snow clearing group R is activated)

(translated from "Schnee und Eis Konzept Swissport", QHSE / Rémy Wäckerling, 30.10.2019; approved by FZAG/OM/OMW)

Duties and competences (Mr SNOW):

- **coordination of clearing and cleaning activities on apron with Airfield Maintenance; Mr SNOW on bord FZAG vehicle (Lindner R04), activated together with snow clearing group "R". Driver from FZAG.**
- **initiate removal of handling equipment which hampers snow cleaning**
- **link between FZAG, SWP SOM, BlueCoDi and coordinator ICE PATROL**

Duties and competences (ICE PATROL):

- **SWP vehicle(s) circulating on aircraft parking stands, equipped with "Sno-N-Ice" (rosa Granulat)**
- **may be used at any airside location, including pathways for employees**

Responsibility of Employee:

- **Correct behaviour in winter conditions**
- **Safety First!**
- **Info flow: employee → superior → BluCoDi → SOM → Duty Manager Airport Steering (FZAG) that handling on a specific position (or generally) cannot be pursued to to unsafe working conditions (handling stop; handling delayed; handling slowed), resulting in IR76/77**

4.3.8. Swissport Emergency Manager (EM)

Location: moving

Contacts: via Swissport Staco
Tel. +41 43 815 08 22

Organisation:

Standby organisation:

- 1st October – 30th April
- 05:30 – 23:30 LT

Duties and competences:

- **highest decision level for operational issues of Swissport**
- **coordination between Swissport operations and Deicing Coordination**
- **mobilise emergency organisation within Swissport**
- **inform Swissport and Cargologic operations about taken decisions**
- **initiate**
  - **reallocation of staff**
  - **cancellation of flights**
  - **meal service on board of aircraft**
  - **handling of aircraft in maintenance hangar**
  - **information of media**
- **attend meetings of Snow Committee**
- **represents handling organisation at meetings of 'Krisenstab Schnee'**

4.4. dnata Switzerland AG

by Nicole Gut, Manager Ground Logistics and Andreas Spiess, Duty Officer and Instruktor Deicing Ground Logistics dnata ZRH, Tel. +41 43 815 84 50

4.4.1. dnata Station Control (Staco)

Location: Bogenhangar T9

– Office 46

Contacts: Tel.: +41 43 815 83 83

e-mail: zrh.ops@dnata.ch

SITA: ZRHKO7X

Availability:

- Daily from 05:00LT until end of operations
- 24 hours standby service by dnata Duty Station Manager (DSM) under +41 43 815 83 83

Organisation:

Standby organisation:

- 1st October – 30th April

  05:00 – 23:30 LT

Duties and competences:

- **link to own handling organisation**
- **coordination of handling**
- **contact for customer airlines**
- **publish delay information (NI / ED / Staff ED) in AOS**
- **Mobilize emergency organization within dnata**

4.4.2. dnata Deicing Disposition (part of dnata Station Control)

Location: Bogenhangar, Gebäude T9
Office 48

Contacts: Tel.: +41 43 815 83 83
e-mail: zrh.ops@dnata.ch
SITA: ZRHKO7X

Availability:

- Daily from 05:00LT until end of operations

Organisation:

Standby organisation:

- 1st October – 30th April
  05:00 – 23:30 LT

Duties and competences:

- **Link to own Station Control**
- **Integrated part of dnata Station Control (Staco)**
- **Mobilize Deicing truck operators**
- **On time assignment of Deicing trucks for on-stand Deicing**
- **check/responsible for ontime update of truck assignment and DAS/DAE in AOS**
- **Arrange and plan refill of Deicing trucks for on-stand Deicing**
- **Arrange staff rotation and meal breaks**
- **Arrange and coordinate trouble shooting in case of technical irregularities**
- **Represents handling organization at meetings of "Krisenstab Schnee"**

Qualification

The staff for dnata Deicing disposition is selected and instructed by dnata Switzerland AG

4.4.3. dnata Deicing Tarmac Coordinator

Location: Bogenhangar, Gebäude T9

Office 48

Contacts: Tel.: +41 76 348 97 30

Availability:

Daily from 05:00LT until end of operations

Organisation:

Standby organisation:

1st October – 30th April

- 05:00 until end of operations standby service by dnata Deicing organization under +41 76 348 97 30 during opening hours 24 hours standby service by dnata Deicing organization under +41 43 815 83 83

Duties and competences:

- **Coordination of clearing and cleaning activities on apron with Airfield Maintenance**
- **Initiate removal of handling equipment on parking stands with Deicing activities**
- **Apply for closure of parking stands and repositioning of aircraft if handling heavily impaired by snow**
- **Check conditions of parking stands after clearing and cleaning to ensure that handling is possible**

Qualification

The staff for dnata Tarmac Coordinator is selected and instructed by dnata Switzerland AG

4.4.4. dnata Deicing Truck Operators

Location: Via dnata Deicing Disposition

Contacts: Tel.: +41 43 815 83 83

e-mail: zrh.ops@dnata.ch

SITA: ZRHKO7X

Availability:

- From 1st May till 30th September - Available on request with a reaction time of 60 minutes (two Beta Truck) by dnata Deicing organization under +41 43 815 83 83

- From 1st October till 30th April
  - Daily from 05:00LT – end of operations standby service by dnata Deicing organization under +41 76 348 97 30 during opening hours
  - 24 hours standby service by dnata Duty Station Manager (DSM) under +41 43 815 83 83

Availability:

Standby staff through dnata Deicing Disposition

Duties and competences:

- **Deicing and anti-icing of aircrafts according to rules of dnata Deicing manual, de- / anti-icing manuals issued by customer airlines and Global Airline Standards**
- **Deicing on stand**
- **Refilling of Deicing trucks**
- **Secure parking of trucks after Deicing**

Communication for on-stand Deicing:

- **Ground – cockpit communication for all dnata customer airlines (alternative Line Maintenance or Jetcap)**
- **Deicing truck – dnata Deicing disposition via Push to Talk communication app**
- **Deicing truck – dnata tarmac coordinator via Push to Talk communication app**

Number of staff:

38 Deicing truck operators

Recruitment:

The recruitment of the Deicing truck operators is in the responsibility of dnata Switzerland AG.

Qualification

dnata Deicing truck operators are selected and instructed by dnata Switzerland AG.
The training is performed by dnata Switzerland AG according to SAE based instructions and standards and local procedures.

4.4.5. dnata Deicing Trucks

Location: 4 Deicing Trucks Abstellhalle T62, 1 Deicing Truck Unterstand B31

Availability:

- Deicing from 1st May till 30th September
  - Available on request with a reaction time of 60 minutes (one Beta Truck) by dnata Deicing organization under +41 43 815 8330
- From 1st October till 30th April

Daily from 05:00LT – end of operations

Activation:

By assigned Deicing truck operator

Number and Type of Trucks:

5 Vestergaard Beta Next Generation (one truck equipped with FORCED AIR / AIR BLOWER but not in use)

Tank 1	4’000 litres water	between 60° and 78°C
Tank 2	2’000 litres ADF Type 1	between 60° and 78°C
Tank 3	2’000 litres ADF Type 4	cold (OAT)

Note: Spraying temperature measured at nozzle of all operated trucks is between 60° and 78°C (special heating system at nozzle)

Maintenance and Repair:

dnata GSE is trained by Vestergaard Company and is responsible for small diagnostics and repairs of the Deicing trucks. Dnata GSE is supported by Vestergaard emergency telephone service (Hotline).

Monday till Friday from 07:00 – 16:00LT

Weekend from 06:00 – 23:30 GSE on call

Vestergaard emergency telephone service (Hotline) on call 24h/ Monday till Friday

In case of snowfall and icing conditions, the availability of a technician is secured.

4.5. Jet Aviation AG, Zurich Airport Branch

Sergio Pires, Senior Manager FBO Services

4.5.1. Jet Aviation AG, (OPS)

Location: GAC

Office G6 0-111

Contacts: Tel.: +41 58 158 84 66

e-mail: zrhfbo@jetaviation.com

SITA: ZRHPHPP

Availability:

- Daily from 05:40LT until 22:30LT (or end of operation)

Organisation:

- staffed 05:40 – 22:30 LT (or end of operation)

Duties and competences:

- **link to own handling organisation**
- **link to own fueling organisation**
- **coordination of handling**
- **coordination with customs & immigrations**
- **contact for GA/BA customer**

4.5.2. Jet Aviation AG, Deicing Disposition (part of Jet Aviation AG, OPS)

Location: GAC

Office G6 0-111

Contacts: Tel. +41 58 158 84 66

Deicing Phone: +41 79 842 17 34

e-mail: zrhfbo@jetaviation.com

SITA: ZRHPHPP

Availability:

- Daily from 05:40LT until 22:30LT (or end of operation)

Duties and competences:

- **Link to Jet Aviation Station Control**
- **Integrated part of Jet Aviation Station Control (ZRHOPS)**
- **Mobilize Deicing truck operators**
- **On time assignment of Deicing trucks for on-stand Deicing**
- **Arrange and plan refill of Deicing trucks for on-stand Deicing**
- **Arrange and plan refill of Deicing trucks for on-stand Deicing**
- **Arrange staff rotation and meal breaks**
- **Coordination of clearing and cleaning activities on apron with Airfield Maintenance**
- **Initiate removal of handling equipment on parking stands with Deicing activities**
- **Apply for closure of parking stands and repositioning of aircraft if handling heavily impaired by snow**
- **Check conditions of parking stands after clearing and cleaning to ensure that handling is possible.**
-

Qualification

The staff for Jet Aviation Deicing disposition is selected and instructed by Compass Ramp and Deicing Consultancy.

4.5.3. Jet Aviation AG, Deicing Coordinators

Deicing Coordinators: Mohamed Sameel Muthu
Mobile: +41 79 362 53 40
Edmund Allotey
Mobile: +41 79 300 09 88

Location: via Jet Aviation Ops

Contacts: Tel.: +41 58 158 8462
Deicing Phone: +41 79 842 17 34

Availability:

Daily from 05:40LT until end of operation

Duties and competences:

- **Assuring Fluid Tests are duly done, filled and filed**
- **Making sure the daily DEICING GSE checks are in order**
- **Trouble Shooting any umpredictable item during normal operation**
- **Allocation of monthly staff operational roster**
- **Making sure Jet Aviation SMS is followed**
- **Making sure training procedures are followed**
- **Arrange and coordinate trouble shooting in case of technical irregularities**
-

Qualification

The staff for Jet Aviation DEICING Coordinators is selected by Jet Aviation Management and instructed by Compass Ramp and Deicing Consultancy.

4.5.4. Jet Aviation AG, Deicing Truck Operators

Location: Via Jet Aviation OPS

Contacts:

Tel. : +41 58 158 84 66

Deicing Phone: +41 79 842 17 34

e-mail: zrhfbo@jetaviation.com

SITA: ZRHPHPP

Availability:

From 1st May till 30th September	Available on request with a maximum reaction time of 60 minutes. ONE Mallaghan Truck is available during the off season by Jet Aviation Deicing organization under + 41 58 158 84 66
From 1st October till 30th April	Daily from 05:40LT – 22:30LT or end of operation. TWO Mallaghan Trucks are available during the season by Jet Aviation Deicing organization under + 41 58 158 84 66 / +41 79 842 17 34

Availability:

Standby staff through Jet Aviation Deicing Disposition

Duties and competences:

- **Deicing and anti-icing of aircrafts according to rules of Jet Aviation AG Deicing manual, de- / anti-icing manuals based on current version of SAE/ICAO/FAA**
- **Deicing on stand**
- **Refilling of Deicing trucks**
- **Secure parking of trucks after Deicing**

Communication for on-stand Deicing:

- **Ground – cockpit communication for selected customers**
- **Deicing truck – Jet Aviation Deicing disposition via trunked radio system**
- **Deicing truck – Jet Aviation tarmac coordinator via trunked radio system**

Number of staff:

18 Deicing truck operators (Including 5 Instructors)

Recruitment:

The recruitment of the Deicing truck operators is in the responsibility of Jet Aviation AG.

Qualification

Jet Aviation Deicing truck operators are instructed by Compass Ramp and Deicing Consultancy on behalf of Jet Aviation AG.

The training is performed by Compass Ramp and Deicing Consultancy according to SAE/ICAO/FAA based instructions and standards and local procedures.

4.5.5. Jet Aviation AG, Deicing Trucks

Location: GA4/GA1

Availability:

From 1st May till 30th September	Available on request with a maximum reaction time of 60 minutes. ONE Mallaghan Truck is available during the off season by Jet Aviation Deicing organization under + 41 58 158 84 66
From 1st October till 30th April	Daily from 05:40LT – 22:30LT or end of operation. TWO Mallaghan Trucks are available during the season by Jet Aviation Deicing organization under + 41 58 158 84 66 / +41 79 842 17 34

Activation:

By assigned Deicing truck operator

Number and Type of Trucks:

2 Mallaghan RA8200 DAF, two-man operated

Tank 1	7'000 litres premix	at 70°C
Tank 2	1'200 litres anti-ice	cold

Note: Spraying temperature measured at nozzle of all operated trucks is 70°C for premix and cold for anti-ice

Maintenance and Repair:

Mallaghan is responsible for bigger diagnostics and repairs of the Deicing trucks.

Stalder Engineering GmbH is responsible for small diagnostics and repairs.

Monday till Friday from 07:00 – 18:00LT and on standby all 7 days a week.

In case of snowfall and icing conditions, the availability of a technician is secured.

4.6. Cargologic

by K. Sammartin, CARGOLOGIC Head of Transport & Road Feeder Service (RFS)

4.6.1. Schichtleiter Transport

Location: **Fracht Ost , Transportdisposition (V12)**

Contacts: Tel.: +41 58 856 96 12 – Shift Leader,
e-mail: sl-transporte@cargologic.com

Organisation:

- on duty 05.00 – 24:00
  No special standby organisation during wintertime

Duties and competences:

- **responsible for the transportation of cargo and cargo documents to and from the aircraft**
- **responsible for the loading and unloading of camions (RFS)**
- **manage and clean-up the parking sites for trailers, ULD, cargo trolleys – in cooperation with Swissport**
- **coordination with Cargologic-Organisation on tarmac (Valuable transportation)**
- **a contingency plan of Swiss Worldcargo exists to cope with extreme circumstances (e.g. embargoes)**
- **space requirements / cleaning requirements on tarmac are covered by the Apron Coordinator of Swissport**

4.7. Swiss International Airlines

by R. Scherrer, SWISS Deicing Coordinator

4.7.1. SWISS Deicing Coordinator

Location: Swiss NOC, Ops Center

Contacts: via SWISS NOC Tel.: +41 44 564 45 03

Organisation:

Standby organisation:

- no stand-by planned

Duties and competences:

- **representation of SWISS in Snow Committee (Telephone Conference)**
- **representation of SWISS in 'Krisenstab Schnee'**

4.8. Meteo

by Andreas Asch, MeteoSwiss / Aeronautical Meteorology

4.8.1. Meteo Briefing

Location: Office MeteoSwiss
Operations Center 1 (OPC 1), Meteo Briefing, ground floor

Contacts: internal: Tel.: 6 20 06
external: Tel.: 0900 162 737

Organisation:

- all year
- 24 hours

Duties and competences:

- **Continuous monitoring of current weather situation**
- **Issue and monitor forecasts and other weather information, incl. TAF, TREND, SIGMET, Low Level SWC**
- **Issue warnings for the aerodrome (incl. Lightning, Wind)**
- **Regular weather briefings for pilots, airlines, airport partners**
  - **daily briefing at 06:15 LT and 14:30 LT**
  - **daily telephone conference at 05:45 LT**
  - **daily telephone conference (O2 Call) at 15:00 LT**
  - **ad hoc weather briefings on request**
- **Participation at Snow Committee telephone conference**

4.8.2. Meteo Observations

Location: Office MeteoSwiss
Observer Station “Oberglatt”, Meteostrasse,

Threshold RWY 14/16

Contacts: internal: Tel.: 6 20 20

external: no calls

Organisation:

- all year during airport operational hours (05:50-23:20 LT)
- during airport non-operational hours (23:50-05:20 LT) AUTOMETAR are issued, incl. AUTO SPECIAL

Duties and competences:

- **Continuous monitoring of actual weather situation**
- **Weather observation and dissemination of METAR and MET REPORT (local routine report) every 30 minutes**
- **Dissemination of SPECIAL (local special report) in case of significant changes in meteorological condition**

Sample of AUTO METAR

LSZH 200050Z AUTO VRB02KT 9999 -DZ FEW004 SCT006 BKN009 11/11 Q1018 NOSIG=

4.9. Skyguide

by Cornelia Matter, Skyguide

4.9.1. FMP (Flow Management Position)

Location:

Skyguide swiss air navigation services ltd
ACC Zürich
Flugsicherungsstrasse 1-5
Postfach 23
8602 Wangen b. Dübendorf

Contacts:

Tel.: +41 44 801 13 01

e-mail: fmpzuerich@skyguide.ch

FMP Manager: Robert Rudigier

Tel.: +41 43 931 64 08

Organisation:

- **H24**

Duties and competences:

- **Take part in the snow committee telephone conference**
- **Coordinate with DC, Apron Control and Zurich Tower about "General Deicing with extended slot tolerance window". The start and end time shall be defined (first and last Aircraft which is allowed to use the extension, max 1h) and in addition, the length of the tolerance window (max up to -15 minutes to +30 minutes)**
- **Coordinate single slot extensions or request of "extended slot tolerance window" according to phase 1 - 3 with NMOC**
- **Inform DC, Apron Control, Zurich Tower or AO about agreement with NMOC about the use of general extended slot tolerance window or slot extension for a single aircraft.**

5. Processes and Procedures

5.1. Operational Status of the Airport

by Philip Gentsch, FZAG Deicing Coordination

5.1.1. Deicing on request

- Deicing on request is generally valid all year round, especially from 1. October until 30. April
- Airport Steering publishes the status in the headerline in AOS/FIDS
- No precipitation, only part of the departing aircraft (less than 50%) require Deicing
- No special measures foreseen by ATS
- Slots have to be adhered to
- Start-up clearance granted within the defined time-limits

5.1.2. General Deicing

- In case more than 50% of the traffic require Deicing, general Deicing shall be activated.
- Status 'General Deicing' issued by Deicing Coordination / Airport Steering in coordination with ATC/Tower and Apron Control.
- Status is published in AOS (headerline)
- Broadcast on DEP ATIS: 'General Deicing procedure in operation, contact 121.810 for requests'
- Status reflected in the DMAN / darts system by Apron Control to provide adequate DPI messages to NMOC.
- Information within AROSA to be updated by Deicing Coordination to reflect Deicing process
- Start-up clearance granted within the defined time-limits
- ATC slot adherence is compulsory

5.1.3. General Deicing with extended Slot Tolerance Window (STW)

- Deicing of aircraft is heavily delayed due to high demand and prolonged process time
- Impact on operations due to runway-closures for snow clearing
- Increasing number of flights miss their slots
- Status 'General Deicing with extended Slot Tolerance Window'(indicating the extended slot time, e.g. ..of –xx to +xx) is initiated by Deicing Coordination in coordination with Skyguide / Tower and Skyguide / FMP (Flow Management Position) and Apron Control DOS and is valid for 1 hour (extension possible).
  --> max. STW = -15/+30 minutes; (any other/lower combination is possible)
- Broadcast on DEP ATIS: 'General Deicing with extended Slot Tolerance Window procedure in operation, contact 121.810 for requests'
- Start-up clearance granted within the defined time-limits

- ATC slot adherence (within extended STW) is compulsory

Details of the above procedures to be found in Chapter 10.2 ‘Documents’

5.2. Aircraft Deicing and Anti-icing

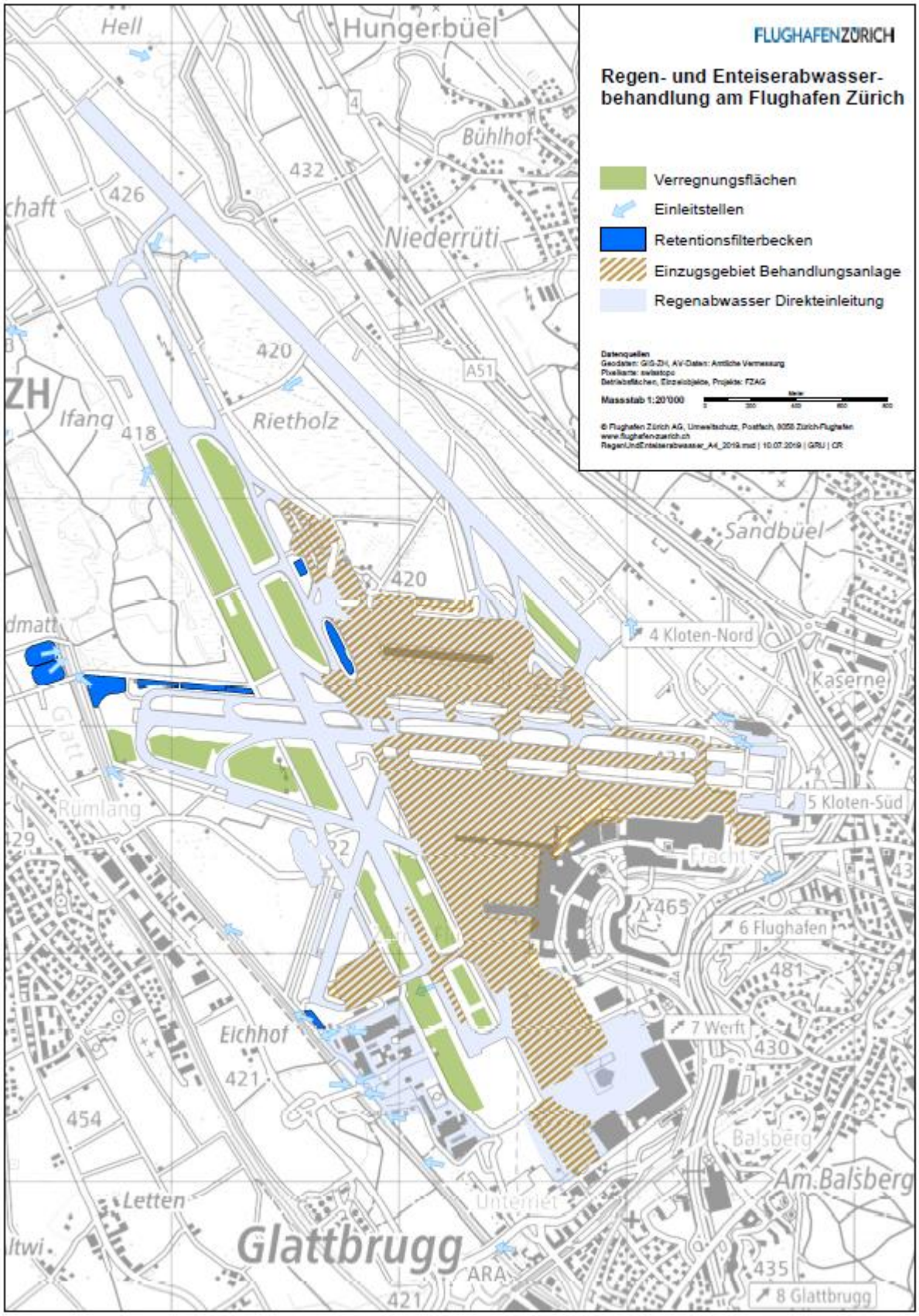
by Christian Glauser, Swissport, Head Deicing
and Philip Gentsch, FZAG Deicing Coordination

5.2.1. Deicing Truck Pool

currently not applicable

5.2.2. Areas where Deicing is allowed

Aircraft Deicing is restricted to areas as per map published by the environmental department of Zurich Airport: “Flughafen Zürich AG, Umweltschutz; Regen- und Enteiserabwasserbehandlung am Flughafen Zürich”


FLUGHAFENZÜRICH
Regen- und Enteiserabwasser-behandlung am Flughafen Zürich
Verregnungsflächen
Einleitstellen
Retentionsfilterbecken
Einzugsgebiet Behandlungsanlage
Regenabwasser Direkteinleitung
Massstab 1:20'000
Hell
Hungerbüel
Bühlhof
Niederrüti
Rietholz
Ifang
ZH
Sandbüel
4 Kloten-Nord
Kaserne
5 Kloten-Süd
6 Flughafen
7 Werft
Rümlang
Eichhof
Letten
Glattbrugg
ARA
Balsberg
Am Balsberg
8 Glattbrugg
A51

5.2.3. Repositioning for Deicing

Aircraft parked on stands/areas where Deicing is not allowed, will have to be repositioned (own power or by tow tractor).

Following procedure shall be adhered to regarding repositioning of the aircraft:
(note: NO Deicing can take place during repositioning on RDP, due Apron Control system compatibility)

Deicing Coordination will liaise with FZAG Resource Dispo regarding an adequate aircraft stand for the Deicing. Once the electronic flight strip for the move/tow is available with darts/DMAN, the crew shall be informed according following phraseology:

(Crew / **Deicing Coordination)**

<FLT Crew> Deicing Coordination, NJE137T, request deicing
<DC> NJE137T, Deicing Coordination, [roger], repositioning is required for Deicing. Stand by [for coordination]

→ Organize Deicing parking stand with Resource Dispo/Deicing Provider

<DC>NJE137T, you will be deiced on parking stand <XY>, for repositioning, contact Zurich Apron 121.755 (South) / 121.855 (North).

<FLT Crew>"readback/confirmation"

<Apron Control> *Issues taxi instructions to the stand foreseen for deicing.*

<FLT Crew>"readback/confirmation"

<Apron Control – after reaching the stand foreseen for deicing> NJE137T, When ready for deicing and within 5 minutes to your TOBT, report READY on Zurich Delivery 121.930

<FLT Crew>"readback/confirmation"

If Apron observes, that the TOBT has expired or can't be met anymore, a TOBT update has to be forced:

<Apron Control> NJE137T, Your TOBT has expired (or will expire soon). Contact your ground handler (or aircraft operator) to update your TOBT.

5.2.4. Deicing on-stand (Standplatzenteisung)

5.2.4.1. Phraseology to be used on CUT:

(Crew / **Deicing Coordination)**

<FLT Crew> Deicing Coordination, SWR123, request deicing

<DC> SWR123, Deicing Coordination. You will be deiced on-stand. I will dispatch a truck to your position <XY>.
When ready for deicing and within 5 minutes to your TOBT, report READY on Zurich Delivery 121.930

<FLT Crew> readback/Bestätigung

Position:

- Deicing on-stand is foreseen:
  - for Customers with Deicing Providers dnata or Jet Aviation (licenced by airport/FZAG/Zurich Airport to only Deice Onstand)
  - for aircraft which cannot be de-iced on Remote Deicing Pads for technical reasons (e.g. propeller aircraft, F70 / F100 / MD80/90series / B712 (B717))
  - in case of mass restrictions
    (weight with snow on wings exceeding max. ramp weight)
  - if required due to change of runway configuration on short notice
  - due to technical problems on Remote Deicing Pad
  - to solve nightban problematic and/or minimize impact on granted extension
  - to releave the RDP's in case of high demand
  - In case of ICE shedding procedure preventions
  - In case of "underwing Deicing"
- the decision about Deicing on-stand is with the FZAG Deicing Coordinator

Conditions:

- Deicing on-stand will be initiated when
  - passenger boarding is completed and air bridges and stairs are removed.
  - loading of aircraft is completed and all loading devices are removed.
  - Aircraft is at a spot where on-stand Deicing is allowed (repositioning completed)
- Deicing truck will be withdrawn if an aircraft is not ready at the published TOBT
- In case of delayed assignment of Deicing trucks the sequencing is according to TOBT

Procedure:

- Deicing request to Deicing Coordination
  - by ground staff, handling agent Tel. +41 43 816 77 00
  - by crew FREQ 121.810

Remark AOS '' I''

- available Deicing truck allocated

Remark AOS ''ICE''

- Deicing request cancelled by crew or airline staff

Remark AOS ''XXI''

Flight Crew information

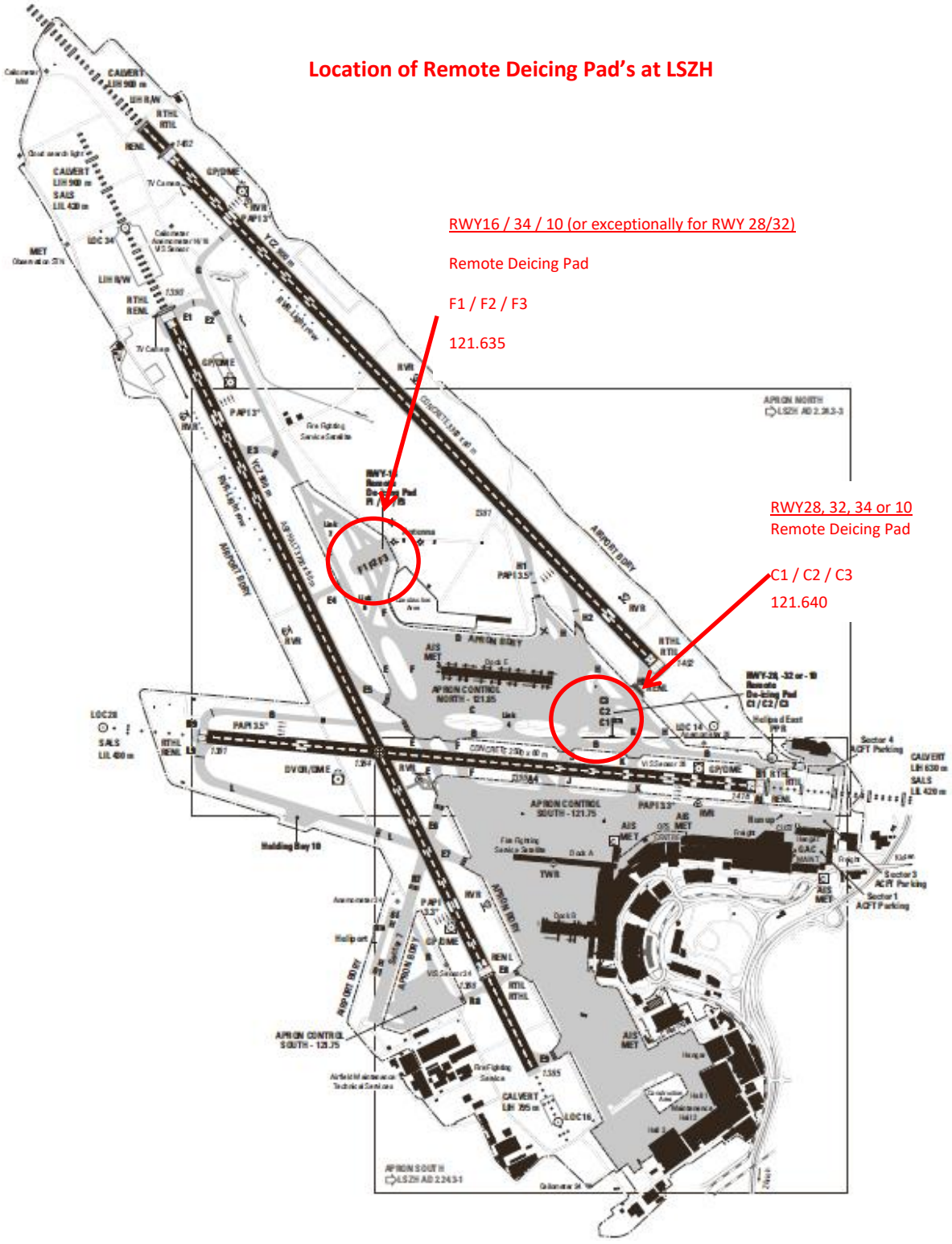
- information and notifications may be given in written or verbal communication
- in case of wing frost prevention only flight crew will be informed about completion (no Deicing code)
- after completion of Deicing/anti-icing operations the flight crew must be informed of the beginning and end of operation
- an aircraft shall not be dispatched after a Deicing/anti-icing treatment operation until the flight crew has been notified of the type of Deicing/anti-icing operation performed (de-/anti-icing code)
- the result of the final inspection by qualified personnel indicating that the aircraft critical parts are free of ice, frost, slush and snow
  - the **Deicing/anti-icing codes** to allow the flight crew to estimate the holdover time to be expected under the prevailing weather conditions
    - Deicing/anti-icing codes:
      - the ISO/SAE fluid type (Type I / / Type IV)
      - the concentration of fluid within the fluid/water mixture, expressed as a percentage by volume (ZRH: only Type I fluid)
      - the local time (hours/minutes) at the beginning of the final Deicing/anti-icing step (if in written communication including date)
        - Examples:
          Type I 40/60 at (date / time) - 40% fluid / 60% water
          Type IV 100 at (date / time) - undiluted Type IV fluid
      - this notification shall be recorded
      - the communication of the code to the flight crew confirms that the post Deicing/anti-icing check was completed and the aircraft is clean
    - it shall be communicated whether a one step or two step Deicing /anti-icing was performed
- The flight crew must receive confirmation from ground crew that Deicing/anti-icing operations are completed and that all personnel and equipment are clear before reconfiguring or moving the aircraft

Charging:

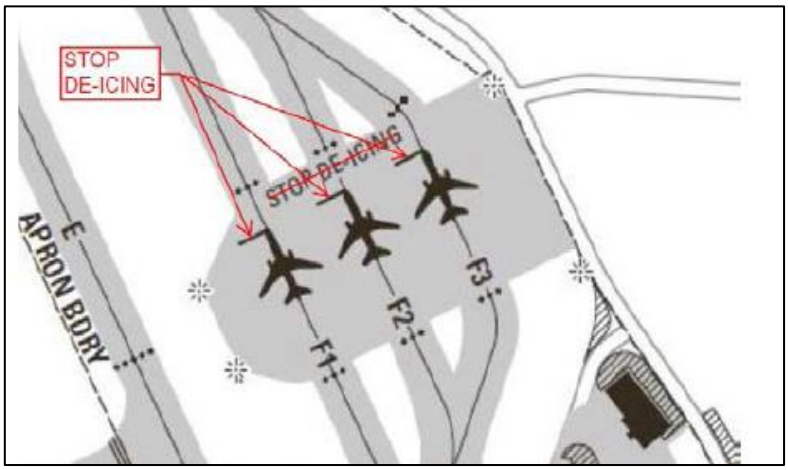
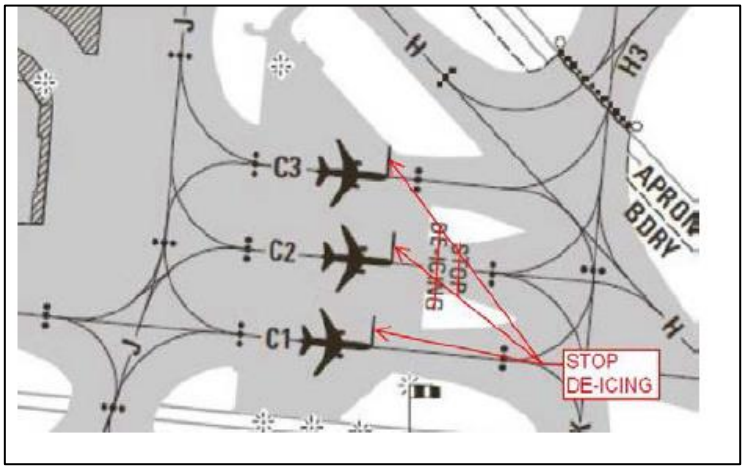
Deicing information containing Flight No. / Aircraft Registration, quantity of hot water sprayed (litres), type and quantity of fluids sprayed (litres) is available c/o Swissport BZRS/ Deicing (or dnata or Jet Aviation) and can be requested according individual agreement.

5.2.5. Deicing on Remote Deicing Pads (RDP)

5.2.5.1. Locations of RDPs



5.2.5.2. Set-up of RDPs

Remote Deicing Pad	Site Overview
De-icing Pad Coordinator FREQ 121.635 MHz **De-icing lanes F1 / F2 / F3** **To commence de-icing, ACFT has to stop at the stop position (marked and yellow lighted) located to the left of the de-icing lane.** **REF: LSZH AD 2.9**	
De-icing Pad Coordinator FREQ 121.640 MHz **De-icing lanes C1 / C2 / C3** **To commence de-icing, ACFT has to stop at the stop position (marked and yellow lighted) located to the left of the de-icing lane.** **REF: LSZH AD 2.9**	

Procedure:

- Deicing request to the Deicing Coordinator
  - by ground staff or handling agent — Tel. +41 43 816 7700
  - or crew — FREQ 121.810
- information entered in AOS

Remark AOS ‘’RIC’’ for remote Deicing

Conditions:

- aircraft will be cleared to taxi to RDP when ready
- applicable RDP assigned in function of take-off runway

5.2.5.2.1. Communication on the RDP (no truck exchange; same provider)

- the RDP Coordinator is contacted by the crew upon arrival on the Deicing location on the assigned RDP-frequency
- Communication via wireless or trunk radio system:

Event	Crew ⇨ PAD Coordinator via VHF	PAD Coordinator ⇨ Crew via VHF	PAD Coordinator ⇔ SWP Trucks / Radio (Funk)
Aircraft taxies on Deicing lane			Auf Lane XY rollt XY 123
PAD Coordinator: activates “red light” on AOS-Entrymask			
	PAD Coordinator, XY 123		
		XY 123, please adjust position to the yellow stop bar, report when ready, parking brakes set and aircraft configured	
	confirm parking brakes set, aircraft configured and ready for Deicing XY 123		
		XY123, we would apply a (1 or 2) step procedure (1) xx % Typ I Fluid, xx % Hot Water – (2) first step xx % Typ I Fluid, xx % Hot Water, second step 100 % Typ IV Fluid	
	confirm treatment / or copied XY 123		

			Lane XY kann mit dem Deicing beginnen
Trucks start with treatment – only after correct read back by flight deck, Deicing may start			
As soon as Deicing of tail starts, push „yellow“ on AOS-Entrymask;			Lane XY Deicing ist beendet Lane ist safe bzw. Fahrzeuge sind safe
		Deicing - XY 123	
	go ahead XY 123		
PAD Coordinator activates “green light” on AOS-Entrymask		XY 123, Deicing is completed, start time xxxx localtime, (2) start time second step xxxx localtime, post Deicing check is completed, you are clear of trucks and for further taxi contact Apron 121.855 bye bye	
	Readback – XY 123		
Trucks follow the taxiing-out aircraft and position themselves on the “Hold Position” of the respective lane			

5.2.5.2.2. Removal of local area contamination (ROLAC):

When no precipitation is falling or expected, a “local area” Deicing may be carried out under the below mentioned or similar conditions.

In some cases a full or complete Deicing is not necessary. When the presence of frost and/or ice is limited to localised areas on the surfaces of the aeroplane and no holdover time is likely to be required, only the contaminated areas will require treatment.

This type of contamination will generally be found on the wing and/or stabilizer leading edges or in patches on the wing and/or stabilizer upper surfaces.

Flight Crew information

- information and notifications may be given in written or verbal communication
- the flight crew must be informed of the beginning and after completion of Deicing/anti-icing operations (for Local Area Deicing only see page 5-11)
- an aircraft shall not be dispatched after a Deicing/anti-icing treatment operation until the flight crew has been notified of the type of Deicing/anti-icing operation performed:
  - the result of the final inspection by qualified personnel indicating that the aircraft critical parts are free of ice, frost, slush and snow
  - the **Deicing/anti-icing codes** to allow the flight crew to estimate the holdover time to be expected under the prevailing weather conditions
    - Deicing/anti-icing codes:
      - the ISO/SAE fluid type (Type I / Type IV)
      - the concentration of fluid within the fluid/water mixture, expressed as a percentage by volume (ZRH: only Type I fluid)
      - the local time (hours/minutes) at the beginning of the final Deicing/anti-icing step (in written communication including date)
        - Examples:
          Type I 40/60 at (date / time) - 40% fluid / 60% water
          Type IV 100 at (date / time) - undiluted Type IV fluid
    - this notification shall be recorded
    - the communication of the code to the flight crew confirms that the post Deicing /anti-icing check was completed and the aircraft is clean
  - it shall be communicated whether a one step or two step Deicing/anti-icing was performed
- The flight crew must receive confirmation from ground crew/pad coordinator that Deicing/anti-icing operations are completed and that all personnel and equipment are clear before reconfiguring or moving the aircraft

Charging:

Deicing information containing Flight No. / Aircraft Registration, quantity of hot water sprayed (litres), type and quantity of fluids sprayed (litres) is available from the respective Provider and can be requested according individual agreement.

Note:

Deicing of MD11 / DC10 on RDPs:

engine # 2 must be shut down if fuselage has to be deiced

5.2.5.2.3. SWR/EDW A333 Engine Ice Shedding Prevention:

Mainly used with conditions of Freezing Fog (FZFG) to avoid engine damage, a procedure which was introduced in ZRH (Airbus requirement) as of January 2019.

With conditions of FZFG and a cumulative taxi-time of more than 45 minutes, the FLT crew shall contact Deicing Coordination as early as possible, ideally latest 30 minutes before SOBT/TOBT, to initiate the "Ice Shedding Prevention" process.

Following phraseology shall be used:
(Crew / **Deicing Coordination)**

Cockpit Crew: "SWISS 123, STAND E47, A333 ICE SHEDDING PREVENTION, REQUEST DEICING"

Deicing Coordination: "SWISS 123, A333 ICE SHEDDING PREVENTION, REQUIRED; AIRCRAFT FORESEEN FOR ON STAND DEICING"

➔ **The aircraft MUST be Deiced Onstand!**

5.2.5.2.4. SWR/EDW A333 Ground Ice Shedding Procedure

Only for SWR / EDW A333 ACFT; The "Ground Ice Shedding Procedure" comes into play when, despite the "Engine Ice Shedding Prevention" measures have been taken, it is concerned that the cumulative taxi time of 45 minutes could be exceeded. The SWR / EDW FLT crew is responsible for monitoring the taxi times and, if necessary, shall request the procedure as early as possible on the adequate APRON FREQ.

The "Ground Ice Shedding Procedure" can be executed on dedicated spots on TWY E as instructed by APRON. To perform the procedure, TWY E must be released by the Airport Authority first in order to exclude contamination on the TWY by snow or ice. When TWY E is not released by the Airport Authority, the "Ground Ice Shedding Procedure" will not be approved.

Exceptionally the procedure may be arranged on the RWY threshold and shall be coordinated with ATC well in advance.

5.3. ‘Start-up Process’- information for crews

extract from AIP

5.3.1. Deicing on stand

Rules:

- If DEICING is required, the flight crew shall call “DEICING Coordination” ond FREQ 121.810 MHz no later than 15 MIN prior TOBT, prior to departure clearance.
- FLT Crew shall only report “aircraft ready” when all handling activities are completed and within TOBT +/- 5min. before the Deicing process starts.

Procedure:

- No earlier than 15 MIN prior TOBT the Flight Crew shall contact “Zurich Delivery” on 121.930 MHz to request the departure clearance.
- FLT Crew shall only report “aircraft ready” to “Zurich Delivery” when all handling activities are completed except deicing and within TOBT +/- 5min. and report ready for on stand DEICING
- "Zurich Delivery" transfers ready ACFT to "Zurich Apron". Flight crew will be instructed to stand by "Zurich Apron".
- DEICING process on stand
- When deicing activities are reported to be completed (either DAE set or Crew reports ready to Apron Control) start-up / push-back clearance will be issued by “Zurich Apron” within TSAT +/- 5 minutes

5.3.2. Deicing on Remote Deicing Pad (RDP)

Rules:

- If DEICING is required, the flight crew shall call “DEICING Coordination” ond FREQ 121.810 MHz no later than 15 MIN prior TOBT, prior to departure clearance.
- Pilot should report ready to "Zurich Delivery" at TOBT +/- 5 minutes tolerance irrespective of DEICING, pushback vehicle availability and TSAT.

Procedure:

- No earlier than 15 MIN prior TOBT the Flight Crew shall contact “Zurich Delivery” on 121.930 MHz to request the departure clearance.
- FLT Crew shall only report “aircraft ready” to “Zurich Delivery” when all handling activities are completed and within TOBT +/- 5min.
- "Zurich Delivery" transfers ready ACFT to "Zurich Apron". Flight crew will be instructed to stand by "Zurich Apron".
- Start-up / push-back clearance will be issued by “Zurich Apron” within TSAT +/- 5 minutes
- Taxi to the assigned remote Deicing pad following instructions given by “Zurich Apron” Reaching the Deicing position within the pad, contact the remote Deicing pad coordinator

FREQ 121.640 MHz (pad Charly) or FREQ 121.635 MHz (pad Foxtrott) when instructed by “Zurich Apron”)

- Keep monitoring “Zurich Apron” while DEICING is in progress.
- When the remote Deicing process is completed, request “Zurich Apron” to continue taxiing

Remark:

if necessary Marshaller can be requested via Zurich Apron 121.855 MHz for taxi–in and precise positioning in the Remote Deicing Pad (valid for Charlie & Foxtrott).

5.3.3. Pre-Deicing (Vorenteisung)

Aircraft Pre-Deicing is available, restricted to aircraft stands where Onstand Deicing is allowed.

5.3.3.1. Reason for Pre-Deicing

Main driver is departure punctuality.

5.3.3.2. Decision for Pre-Deicing

Bilateral agreement between Airline/Customer and Deicing Provider.

5.3.3.3. Process of Pre-Deicing

Provider (or Swiss as Hub Carrier) establishes the Pre-Deicing process and hands out a copy to Head Deicing Coordination FZAG.

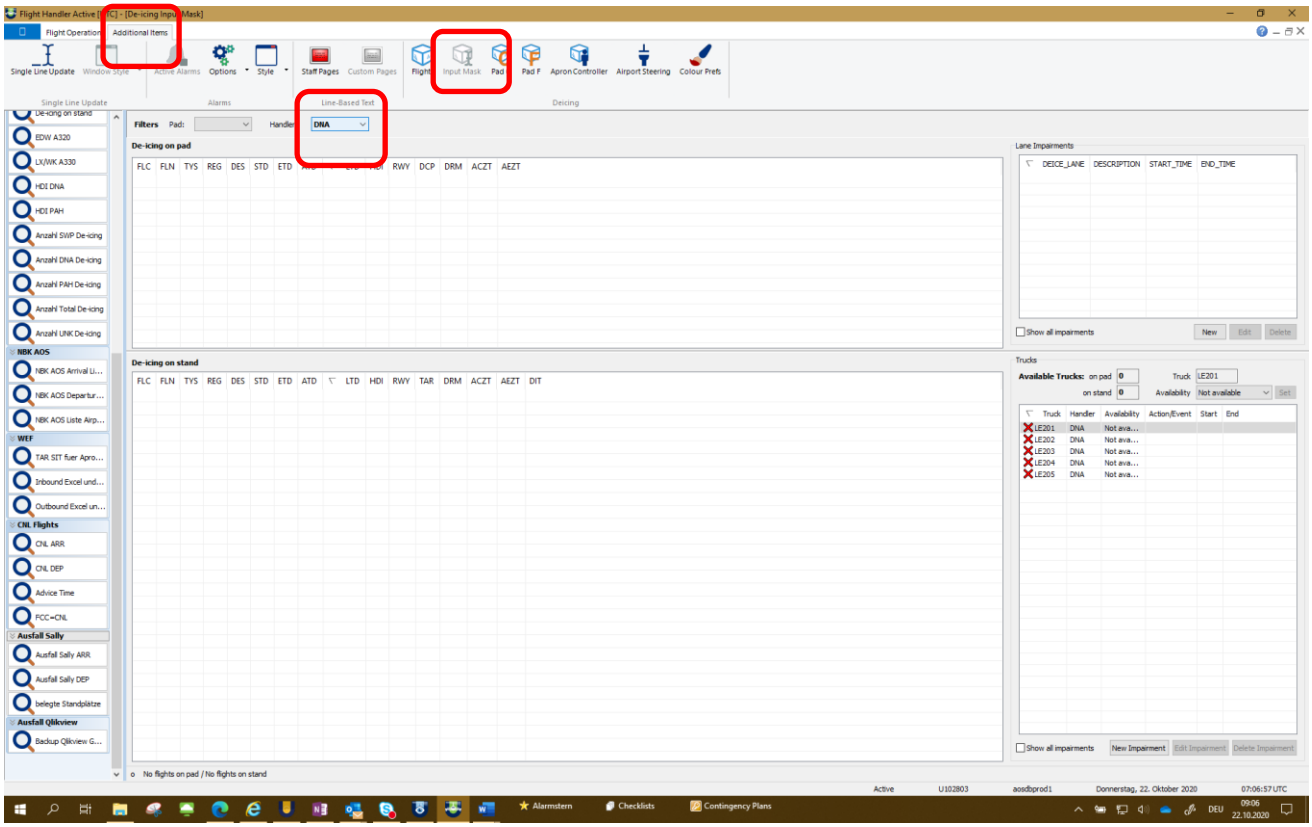
Following process steps must be part of the document:

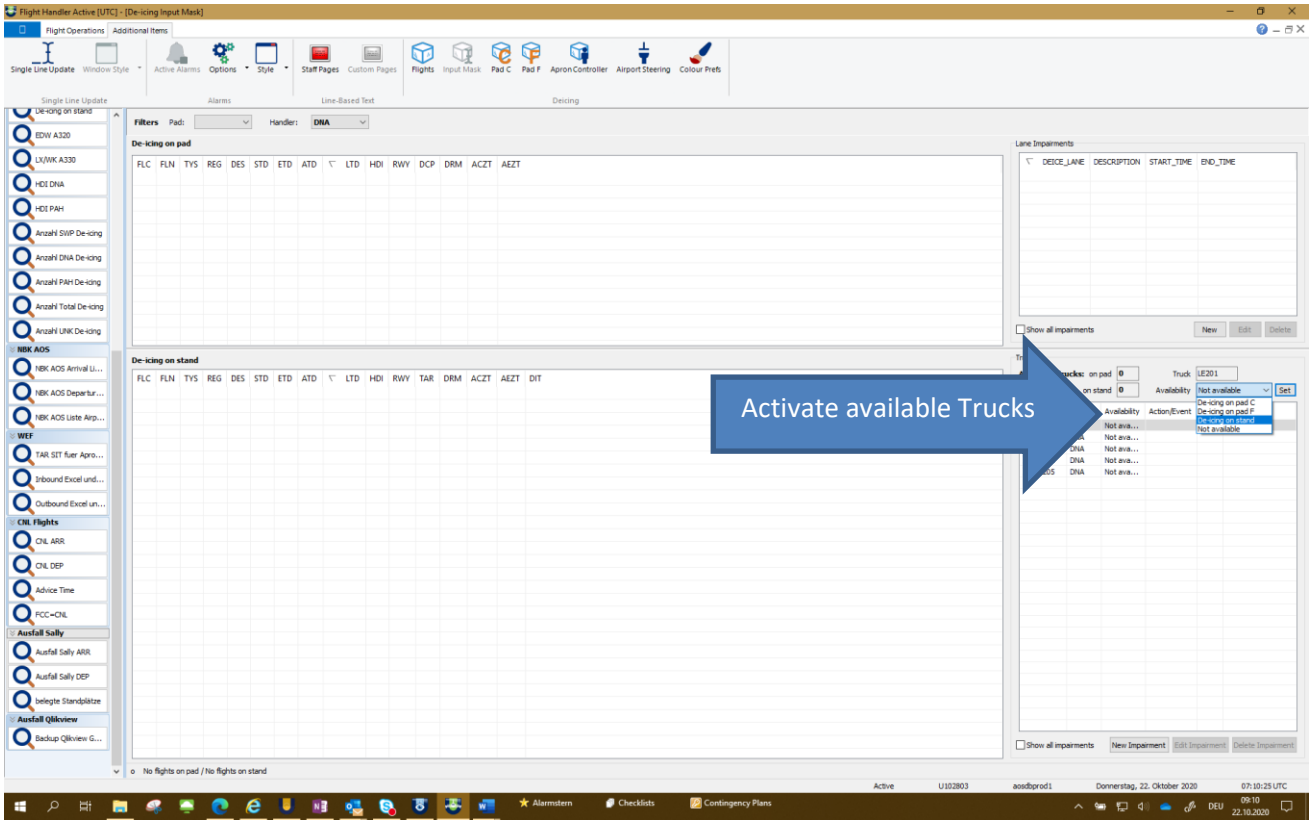
- Data field “DRM” (Deicing Remark): “VOR” (AOS code for Pre-Deicing) data entry in FZAG AODB, with correct and accurate time stamp by Provider (manual update or by data link), on corresponding flight number/flight ID, Deicing Truck
- Inclusion of those flights on monthly summary with Fluid/Hot Water data

5.3.3.4. Sample of manual update in AOS

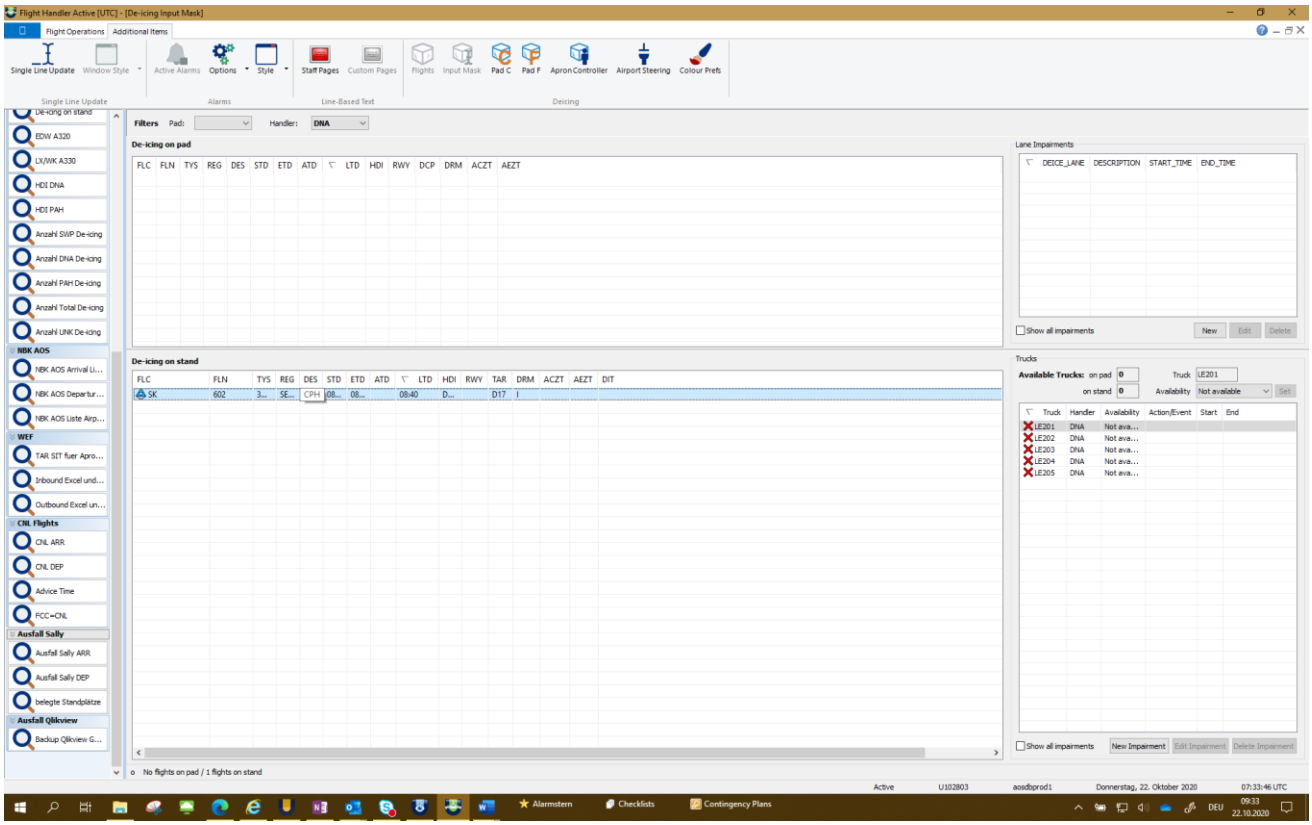
1) Open flight mask:

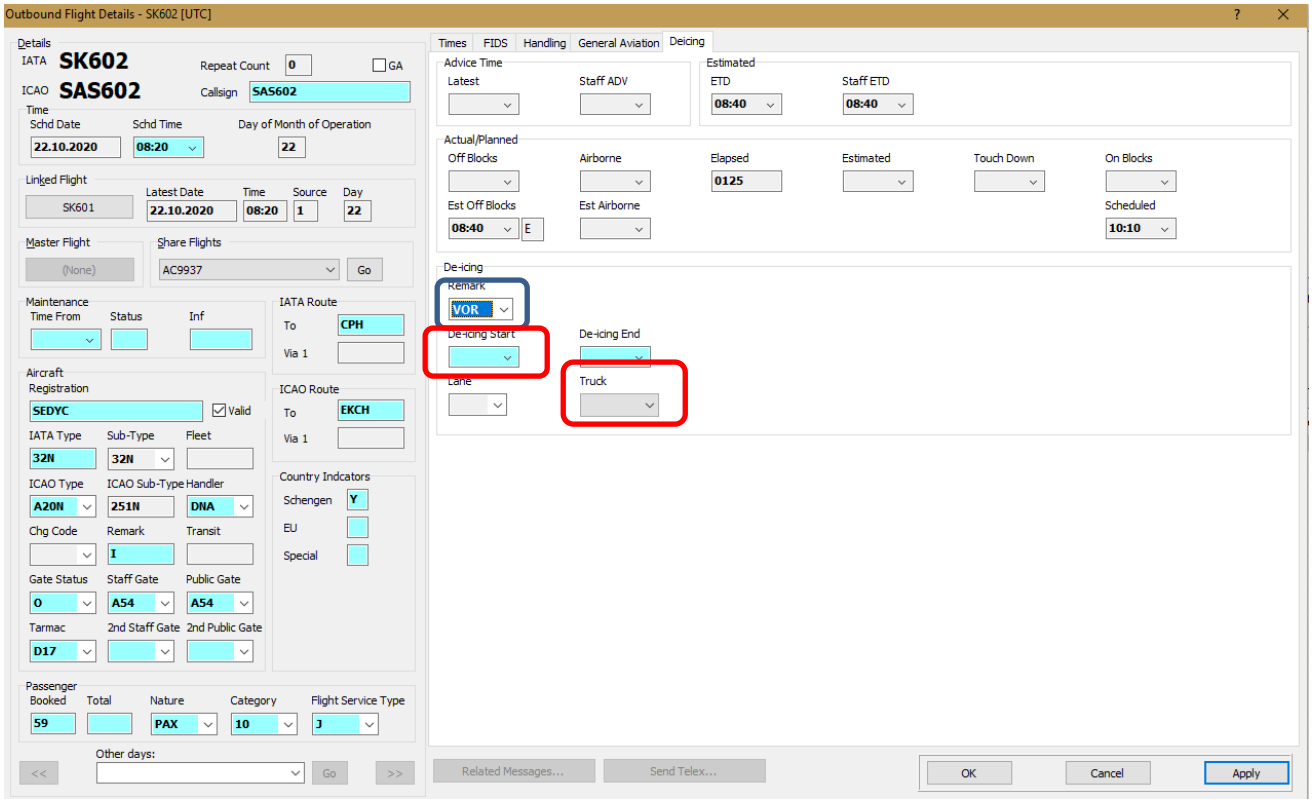
2) Search for corresponding Handler on top of page; then activate available trucks:





3) Open flight mask (by double click on flight – previous picture)





4) Enter Deicing remark (VOR)
5) Enter Truck (drop down choice)
6) Enter Deicing Start Time (will accept only 10 Min. backwards from current time)
7) After completion: enter Deicing End Time

5.3.3.5. Cleaning of aircraft stand after Pre-Deicing

Aircraft stand is cleaned as per standard procedures for Onstand Deicing, once the aircraft has left the parking position.

5.4. Runway Conditions / Runway Reports

by Corinne Häberlin, FZAG Airport Manager

5.4.1. Position

- The conditions of the movement area shall be monitored. The information shall be kept up to date and changes in conditions reported without delay.
- The requirement for measuring the runway friction coefficient under winter conditions must be determined by the Airport Authority (Airport Manager).
- Following conditions will be published:
  - dry
  - frost
  - wet
  - slush
  - dry snow
  - wet snow
  - compacted snow
  - slippery wet
  - dry snow on top of compacted snow
  - wet snow on top of compacted snow
  - standing water
  - ice
  - wet ice
  - water on top of compacted snow
  - dry snow on top of ice
  - wet snow on top of ice

- Estimated surface friction:

  Measurements will be carried out by Skiddometer BV-11 (SKL) trailer.

  Two devices are available.

5.4.2. Procedure

- closing of runways/taxiways in accordance with Skyguide Tower/Airport Steering/Airfield Maintenance/Apron Control.
- order for cleaning to Airfield Maintenance.

- supervise the cleaning-process.
- determine the runway/taxiway conditions after cleaning.
- publish Runway Report / SNOWTAM.
- reopening of runways/taxiways in accordance with TWR / APRON.

5.5. Fluids

5.5.1. Specifications

by Christian Glauser, Swissport Head Aircraft De- / Anti Icing

5.5.1.1. SAE / ISO Type I Deicing/Anti-icing Fluid

Product Name:	**Kilfrost DF Plus**
Description:	Aircraft de-/anti-icing fluid, type I. Complies with specifications ISO 11075 and AMS 144.
Supplied by:	Kilfrost Europe Sint Maartenstraat 1 2000 Antwerpen Belgium www.kilfrosteurope.com Telephone: +32 3 205 1666

5.5.1.2. SAE Type IV Deicing/Anti-icing Fluid

Product Name:	**Kilfrost ABC-S Plus**
Description:	Aircraft de-/anti-icing fluid, type IV. Complies with specification ISO 11078 and AMS 1428.
Supplied by:	Kilfrost Europe Sint Maartenstraat 1 2000 Antwerpen Belgium www.kilfrosteurope.com Telephone: +32 3 205 1666

Note (by Emanuel Fleuti, FZAG Head Environmental Protection)

Any changes of Deicing fluid (type or provider) or any changes with influences on quantity of fluid used or composition of fluid have to be approved by authorities (UVEK –Bundesamt für Umwelt, Verkehr, Energie und Kommunikation)

5.5.2. Holdover Times

For Holdover Time Tables refer to publications from FAA and Transport Canada.

5.5.3. Stock-keeping

by Christian Glauser, Swissport, Head Aircraft De- / Anti Icing

5.5.3.1. at Zurich Airport

○ tank farm V4 (next to Ops Center)	fluid type I fluid type IV hot water 80ºC	2 tanks 50’000 litres each 2 tanks 50’000 litres each 3 tanks 10’000 litres each
○ tank farm ‘Bereitschaftszentrum’	fluid type I fluid type IV hot water 80ºC	2 tanks 40’000 litres each 2 tanks 40’000 litres each 4 tanks 30’000 litres each
○ refill station RDP Foxtrott’	fluid type I fluid type IV hot water 80ºC	1 tank 20’000 litres each 1 tank 20’000 litres each from ‘Bereitschaftszentrum’ by pipeline
○ refill station RDP Charlie’	fluid type I fluid type IV hot water 80ºC	1 tank 20’000 litres each 1 tank 20’000 litres each from ‘Bereitschaftszentrum’ by pipeline

5.5.3.2. outside Zurich Airport (Münchwilen AG/Birrfeld) Transport:

by Bertschi AG

- covered by SLA between Swissport and provider of fluid
- delivery per day / date — first delivery max 3 hours after ordering of each fluid type; any further container again within 3 hours after ordering

  valid for whatsoever fluid — 1 container = 23'000lt or 26'000lt
- can be repeated daily (including Saturdays, Sundays and Holidays)

5.5.3.3. Maintenance and trouble shooting of installations at Zurich

- FZAG +41 43 816 21 12

5.6. Winter Service Area Cleaning

by Daniele Ricciardi, FZAG Airfield Maintenance

5.6.1. Winter Service Area Maintenance

Location: Werkhofzentrale, Airfield Maintenance Werkhof W1

Start of operation:

- Snow clearing / deicing operations on flight operation areas are initiated by the Airport Authority at the time it is determined that operational safety can no longer be guaranteed in the near future.
- Snow clearing and gritting operations are initiated by the Airport Authority at the time when it is determined that traffic safety can no longer be guaranteed.

Activation:

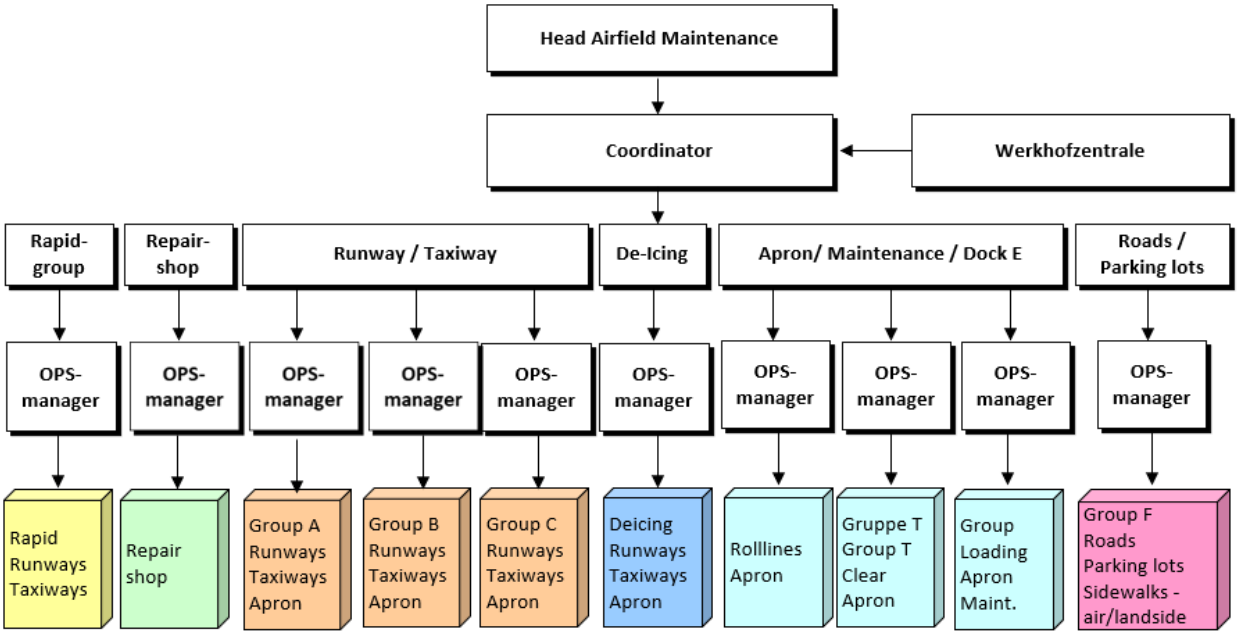
Is carried out by the duty manager on duty / police operations centre airport

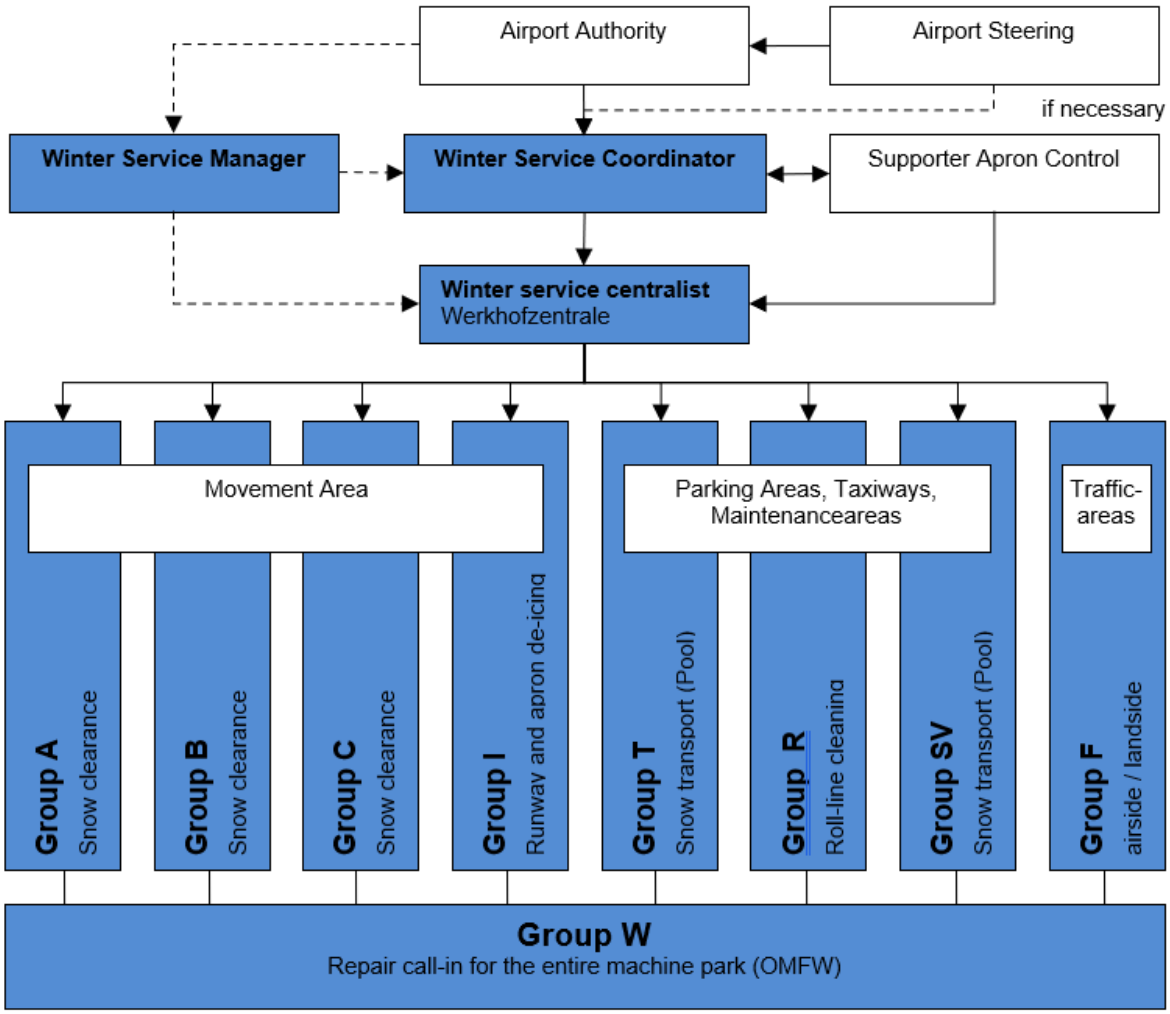
- as a definitive order
- prophylactically, due to the imminent weather situation

Duties and responsibilities:

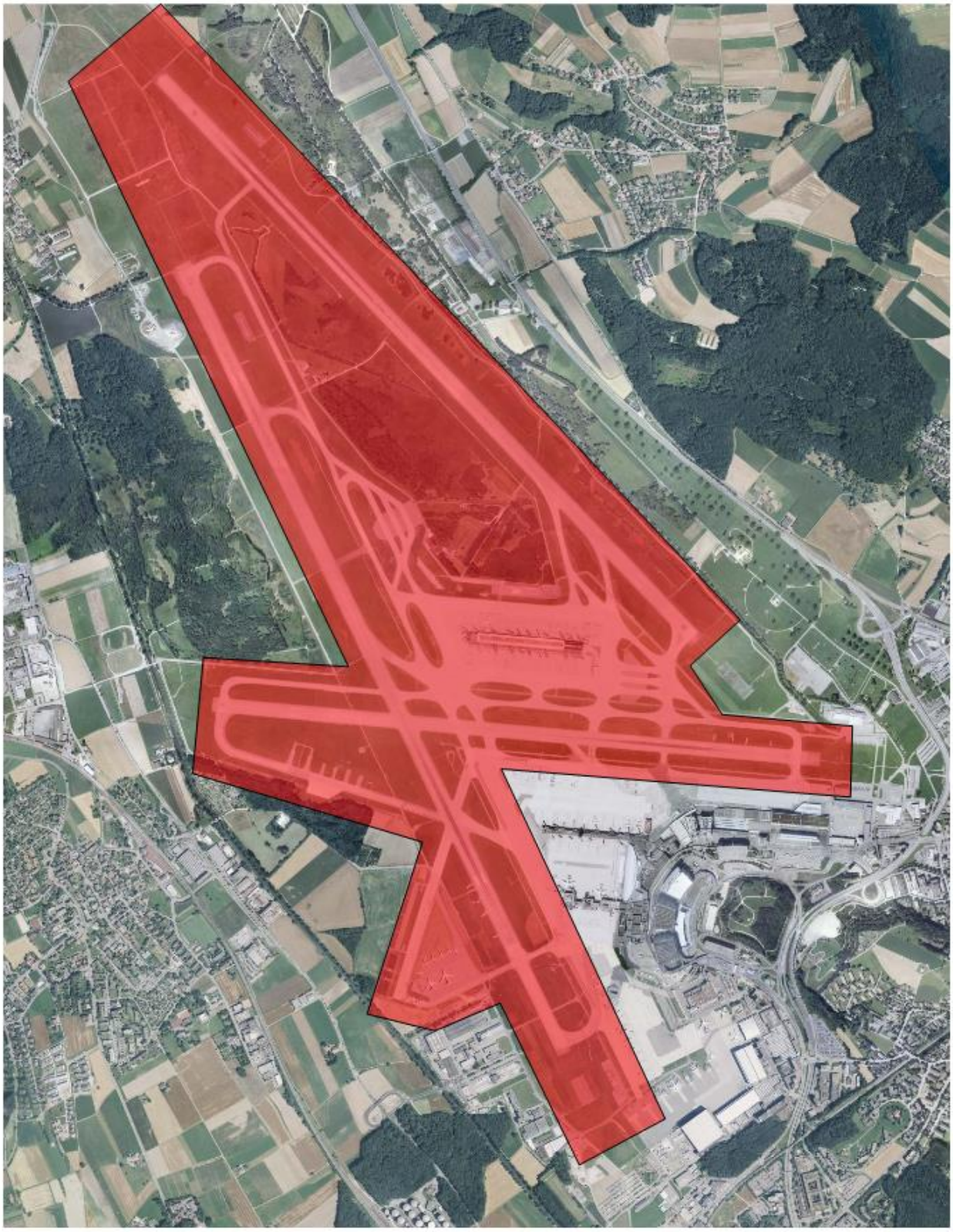
- Management and planning of winter services
- Whether and when what is cleared is decided by the Operations Organisation or the Airport Manager.
- Ensuring the operational safety of the airport in winter conditions
- The Operations Manager or the Airfield Maintenance Coordinator decides how and with what snow is to be cleared.
- Management of winter service operations in extreme and extraordinary conditions.
- Supervision of the work processes during winter service operations

Organisation chart winter service:



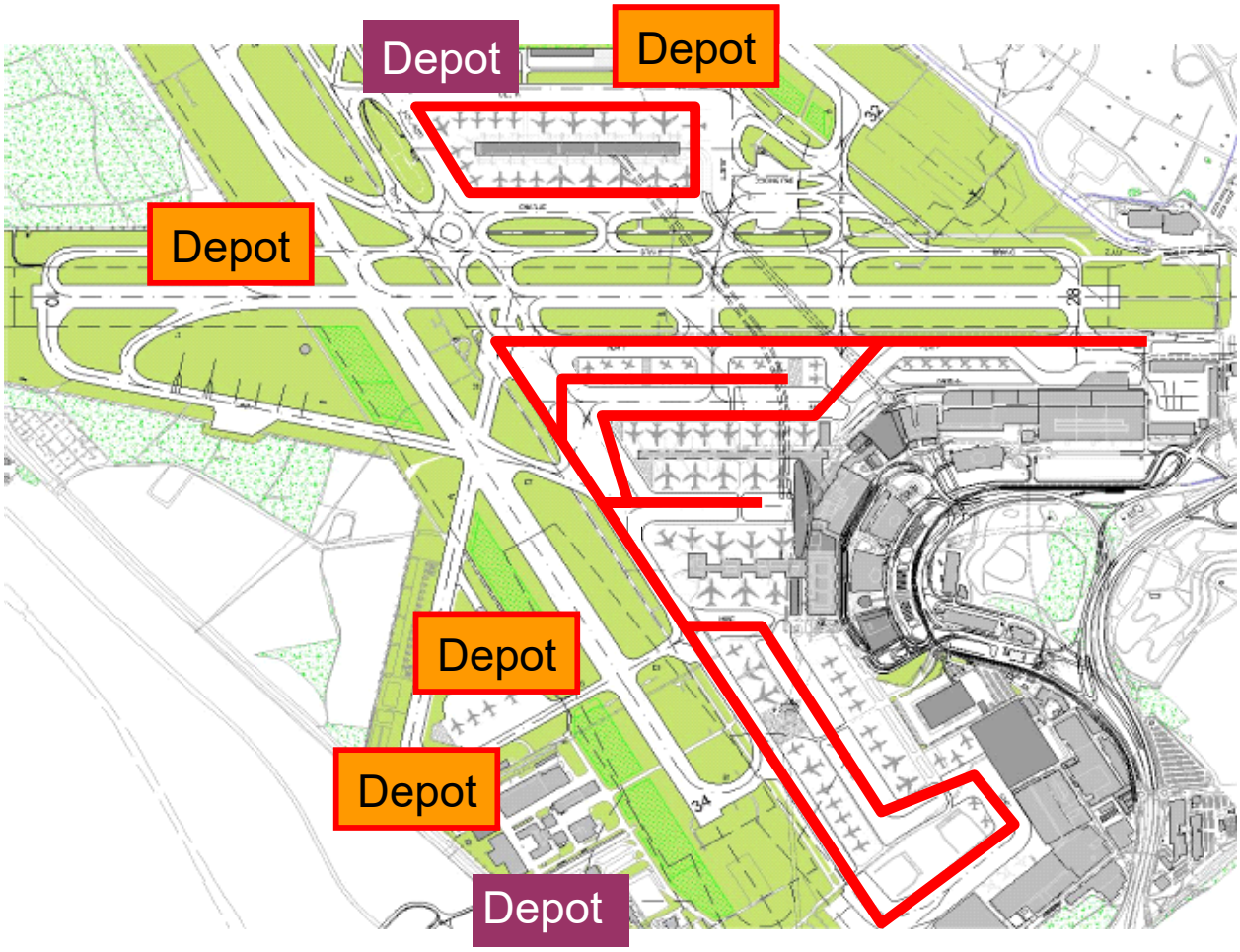

Airport Authority
Airport Steering
if necessary
Winter Service Manager
Winter Service Coordinator
Supporter Apron Control
Winter service centralist
Werkhofzentrale
Movement Area
Parking Areas, Taxiways, Maintenanceareas
Traffic-areas
Group A
Snow clearance
Group B
Snow clearance
Group C
Snow clearance
Group I
Runway and apron de-icing
Group T
Snow transport (Pool)
Group R
Roll-line cleaning
Group SV
Snow transport (Pool)
Group F
airside / landside
Group W
Repair call-in for the entire machine park (OMFW)

5.6.2. Operational Area Runways (groups A, B, C)



5.6.3. Operational Area Apron / Maintenance Area (A, B, Trax, snow loading)

5.6.4. Operational Area Apron / Maintenance Area / Dock E (snow piles / snow fills)



5.6.5. Vehicles

5.6.5.1. Airside

Group Rolling Lines

3 Jetbroom

Group I (deicing)

4 De-icer large

1 De-icer with front brush

2 Solid de-icer for hook vehicles

1 Multi de-icer large with brush (Apron roads)

3 Multi de-icer medium with brush

2 Pony with front brush

Group A

7 Jetbroom wide

2 Truck with plough

1 Snow blower Overaasen

Group B

7 Jetbroom wide

2 Truck with plough

1 Snow blower Overaasen

Group C

8 Schmidt CJS

2 Single plough (tractors)

1 Snow blower Overaasen

1 Wheel loader (Trax)

1 Snow blower Supra 4000

Group Snow loading **Group Trax**

4 Snow blower Supra 4000

2 Wheel loader (Trax / Snowshield)

1 Trax Reserve (Snow pusher)

20 Trucks (Snow loading)

5.6.5.2. Landside

Group F

2 Truck with plough and spreader

5 Tractors with plough and spreader

2 Small tractor

2 Pony with plough and spreader

2 Pickup Car (Handwork stairs)

3 Trucks

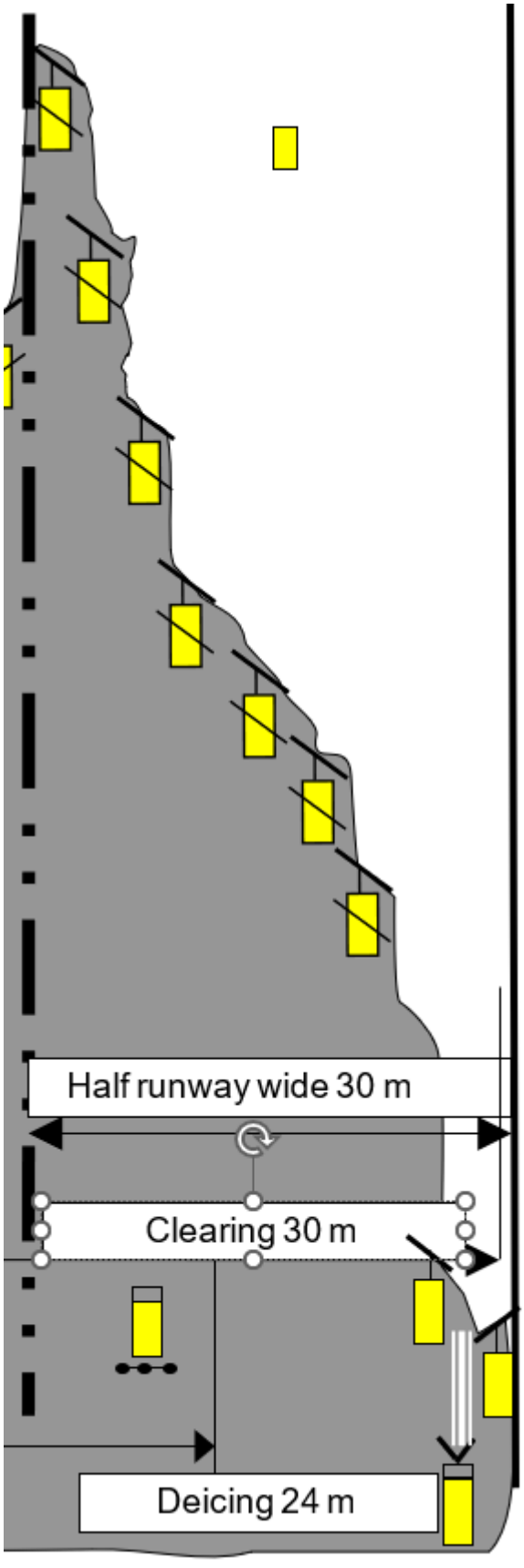
1 Wheel loader

All groups are deployed as needed.

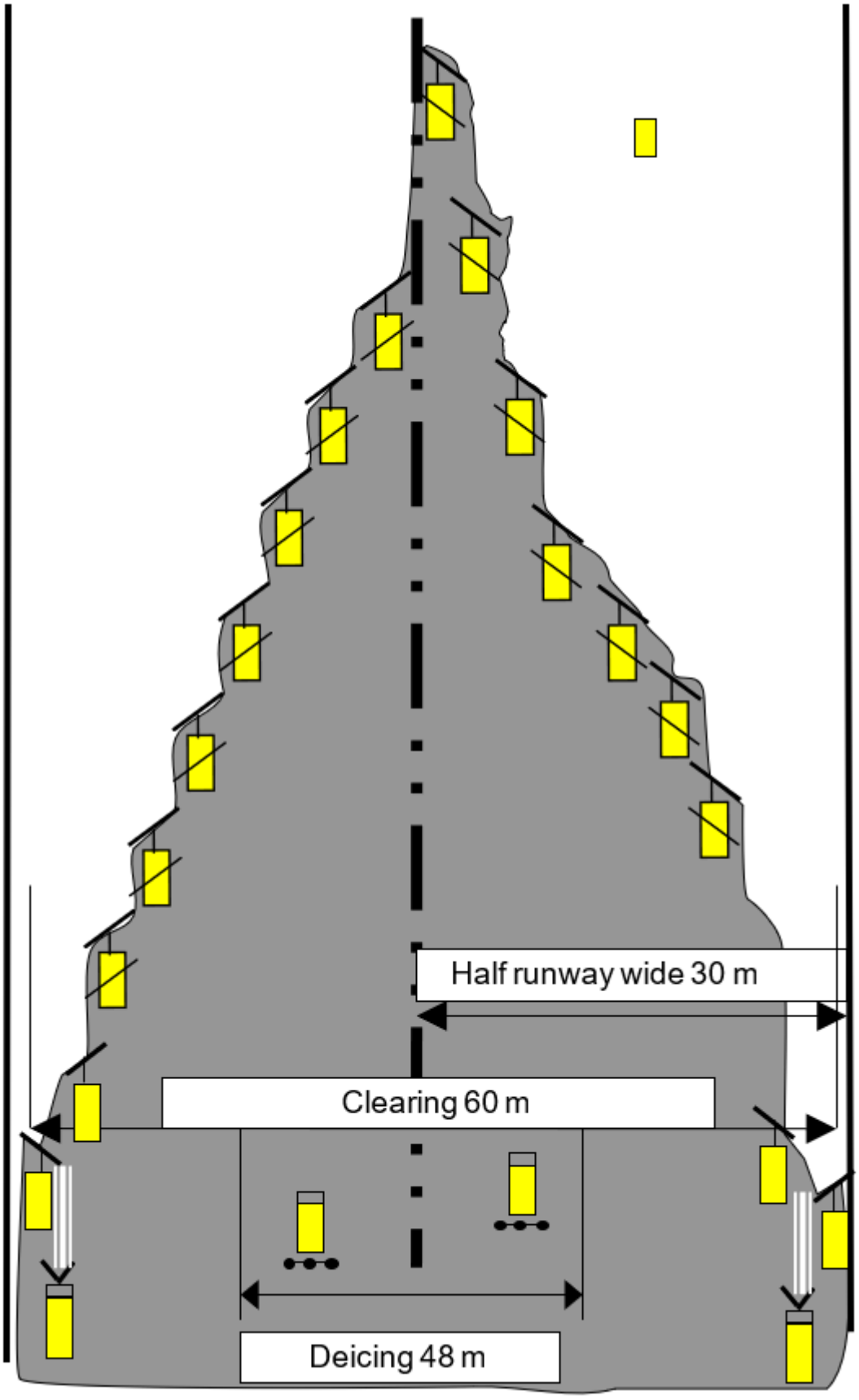
Each group is headed by an operations / team leader.

5.6.6. Clearing Runway Standard

5.6.7. Runway clearance as standard with a group



5.6.7.1. Runway clearance (double clearance) with two groups



5.6.8. Apron Cleaning with Snow (> 5cm)

As of Winter 2021/22 a revised “Prozessanweisung”(directive) (Weisung 2.00315) has been issued, defining the responsibilities of every party involved in the process of “snow cleaning of apron”.

Target	– Coordinated, efficient snow clearance on the stands when it snows – Cooperation with partner companies who are responsible for clearing snow from the stands
Scope	– FZAG: Airfield maintenance (winter service); airport management; apron control; airfield control/resource dispo/winterops coordinator – Partner companies: Swissport, dnata, AAS (ramp organisations, pushback)
Specification documents	– ADR.OPS. B.035 «Operations in winter conditions»
Risk Owner	– Head Flight Operations (OF)
Applicable documents	- 2.00202 Prozess Winterdienst - Systemdokument «SER_WTD_08.02_009_SD_Räumungspläne über 5cm
Evidence and deadlines	
Terms and abbreviations	– TML: Teamleader - Lkw: Truck - FIDS: Flight Information Display System

1 Chargen

1.1 FZAG:

Rolle	Charge
Airport Authority	Dispatch of the evacuation teams
Airfield Maintenance (Winterdienst)	Execution of clearance
Airport Steering / Ressourcen Dispo	Closure of the corresponding clearing zones
Winterops Coordinator	Coordination of snow clearance in case of >5cm snow
Apron Control	Adapted taxiing traffic management during snow clearance

1.2 Partnercompanies (Ramp Organisationen / Pushback):

Rolle	Charge
Swissport	- Independent clearing of stand zones by means of a Winter service vehicle with pointed plough - Clearance of handling material on request from resources Dispatching, possibly moving aircraft
dnata	- Clearance of handling material on request from resources Dispo, ev. displacing aircraft
AAS	- Clearance of handling material on request from resources Dispo, ev. displacing aircraft

2 Ressourcen

2.1 FZAG:

FZAG Clearing Teams
- Operations Manager Snow Loading (SV); Location: Apron Control (in case of >5cm snow: shuttles between Apron Control and Winterops Coordinator workplace in Airport Steering)
- Team 1
- Team 2
- Team 3

Each team has:

- 1 TML (Teamleader)
- 1 Wheel loader
- 1 Snow blower
- 4 Trucks

2.2 Partnercompanies (Ramp Organisation / Pushback):

Partnerfirmen		
-	Swissport	Standard handling equipment & pushback; one winter maintenance vehicle with pointed plow
-	dnata	Standard handling equipment & pushback
-	AAS	Standard handling equipment & pushback

3 Responsibilities (<5cm/>5cm Schnee)

3.1 FZAG:

Stelle	Responsibilities <5cm Snow	Responsibilities >5cm Snow
Airport Authority	Contact point for inquiries individual stand clearances or stand areas	Forwards any inquiries to Winterops Coordinator
Airfield Maintenance (Winterdienst)	Coordinates Airport Authority snow removal orders with Resources Dispatch; informs Operations Manager snow loading.	
Operation Manager Snowloading (SV)	Coordinates the implementation of snow removal and snow loading on the stands	
Airport Steering	After consultation with Airport Authority, information from partner companies (handling agent) about desired apron clearing during the night, in case of snow or surface de-icing. Time: 17:00	
Ressourcen Dispo	Informs the partner companies for the purpose of clearing the handling material; communication via FIDS header line (zone/area - time window).	
Winterops Coordinator		Contact point for requests for individual site clearances or site areas; coordinates and prioritizes these with the head of operations for snow loading (SV), after consultation with the resource's dispatcher
Apron Control	Adapted taxiing	

Outside airport operating hours (see 1.5), snow removal will be coordinated between Airport Authority and Airfield Maintenance (Winter Maintenance).

4 Validity (operating hours / outside operating hours)

This directive is valid during the official operating hours of Zurich Airport; the last scheduled flight movement must be considered; in the morning it applies from 05:30.

5 Planning snow removal

During the operating hours of the airport (see 1.5 Validity) and conditions with >5cm snow (see 1.4 Responsibilities), the order (temporal, prioritized) of the zone clearance takes place via Outlook Calendar. All FZAG offices concerned have "Read" access, the winter service center, winterops coordinator and snow loading operations manager have "Write & Read" access.
This guarantees all parties involved a constant overview of when which snow platoon cleans which zone.

- In terms of system technology, the following four divisions are used:
- Team 1
- Team 2
- Team 3
- Team OPEN (for recorded areas that have not yet been assigned)

6 Handover coordination "Snow Removal Stands" from Airfield Maintenance to Winterops Coordinator and v.v.

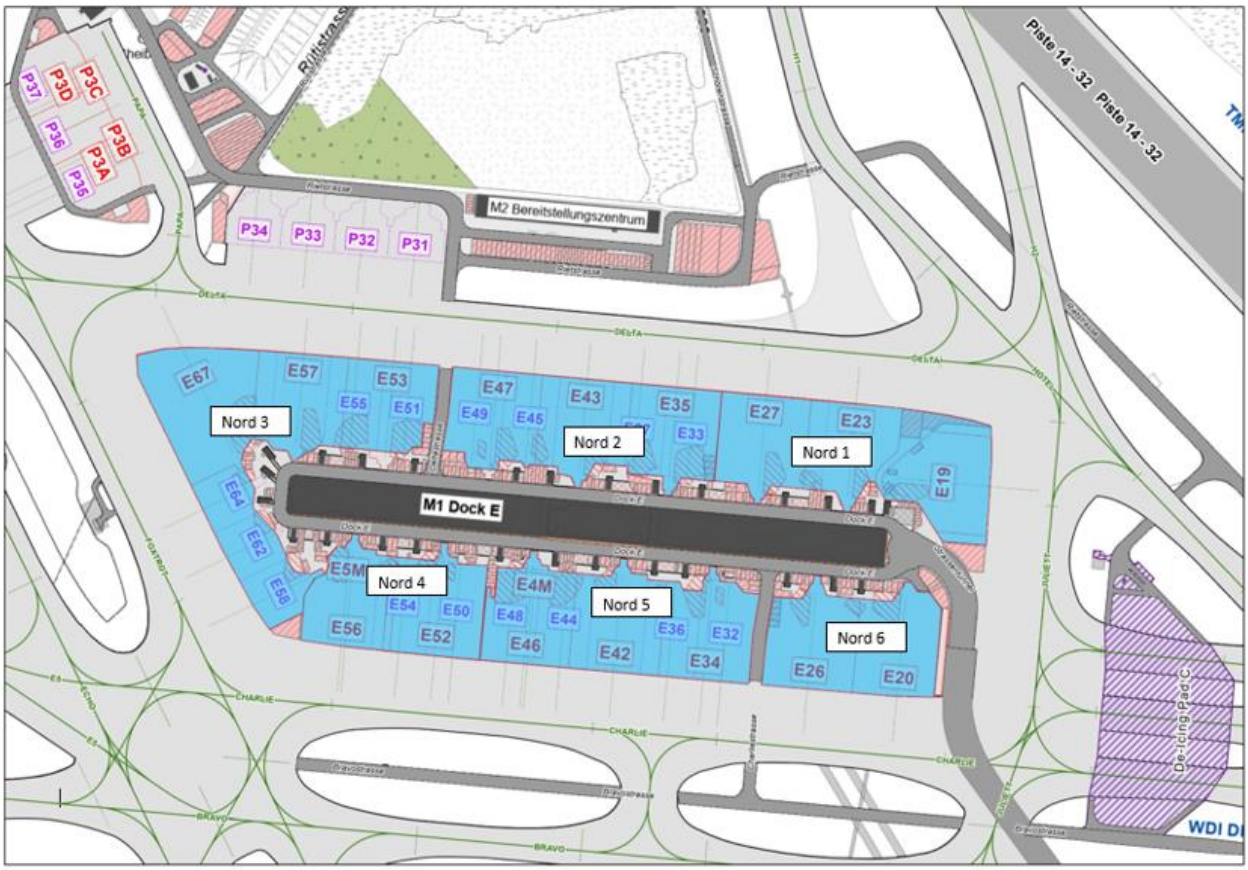
The transfer of the coordination "snow clearing of parking spaces" from Airfield Maintenance (winter service center) to Winterops Coordinator takes place after bilateral agreement between the Winter Service Coordinator and the Winterops Coordinator. The time of the transfer is determined by the system but is fluid in that existing orders are known and, where possible, already assigned (see also 1.6).
The information to all partners is done via the FIDS header line "Coordination of snow clearing of parking lots via Winterops Coordinator Tel 67756".

The return from the Winterops Coordinator to Airfield Maintenance (winter maintenance center) is analogous to the takeover. The FIDS header line is deactivated.

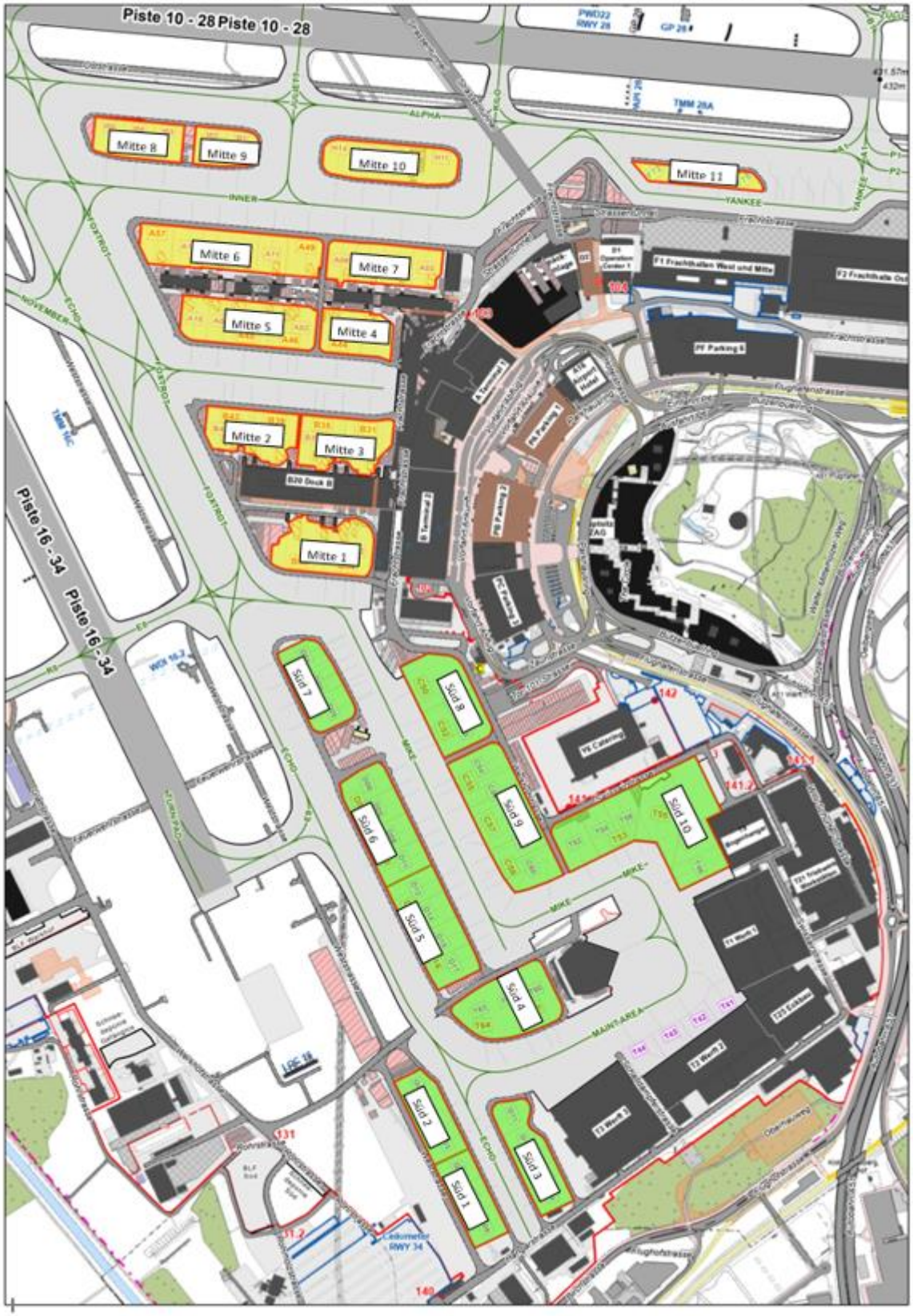
7 Appendix

7.1 Areas of the stand blocks

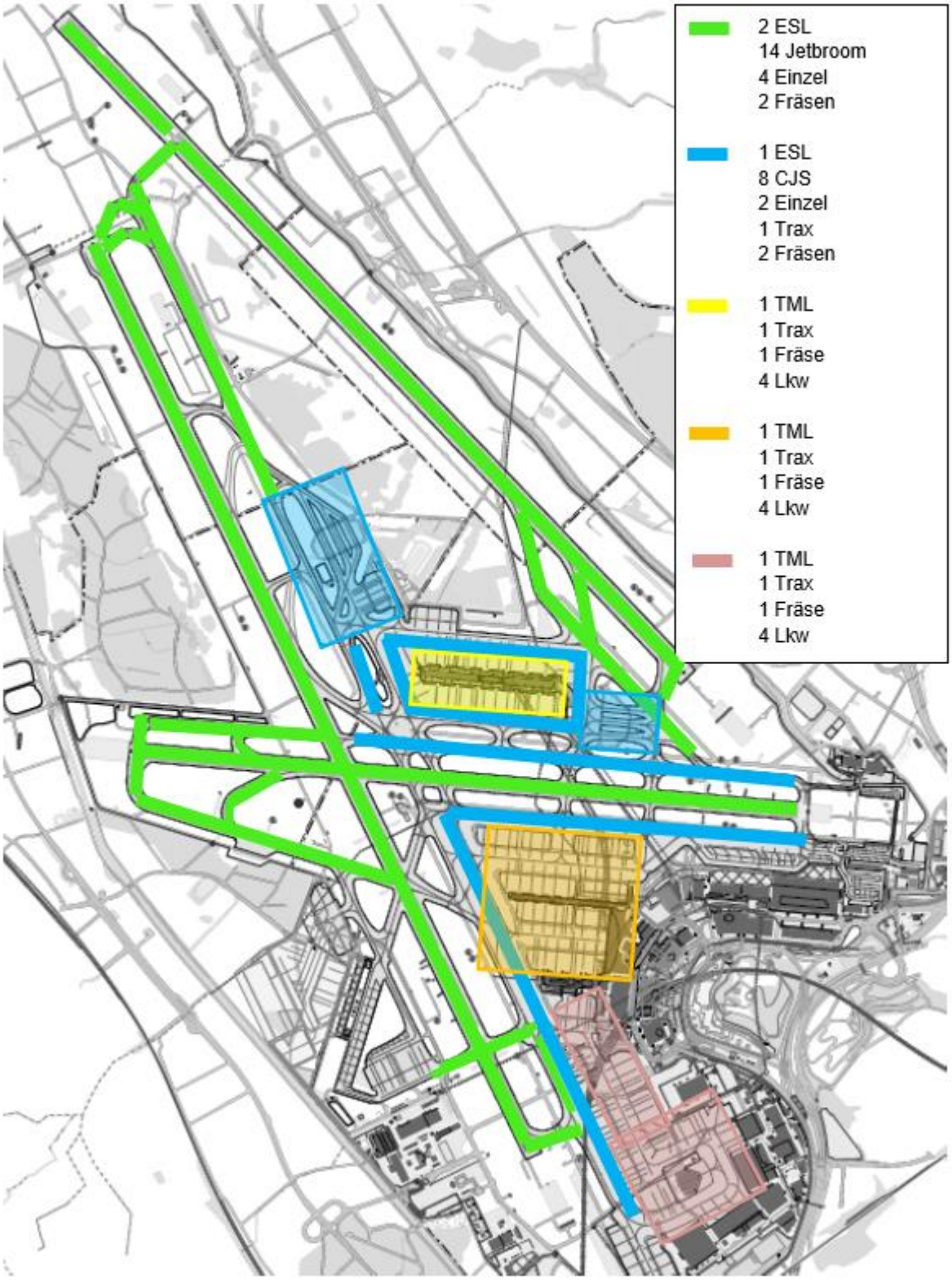
7.1.1 Area Nord (Dock E)



7.1.2 Area middle (Hotel / India / Fox / Dock A & B) / Süd (Charlie / Delta / Golf / Werft)



7.2 Overview of clearance plans for Zurich Airport



5.7. Meteo

by Andreas Asch, MeteoSwiss

5.7.1. METAR (actual weather information)

The METAR is issued every 30min by MeteoSchweiz.

Setup of the message:

a. 4 – letter (ICAO-) airport code
b. observation time
c. wind direction in degrees / wind speed in knots
d. horizontal visibility in meters
e. weather phenomena (e.g. RA = rain, SN = snow, SHSN = showers of snow, FG = fog)
f. cloud amount (FEW, SCT, BKN, OVC) and cloud base in 100 feet
g. temperature / dew point in degrees celsius
h. atmospheric pressure in hectopascal (hPa)
i. trend; valid for the next two hours

Example:

a b c d e f g h i

LSZH 280920Z 27005KT 1800 BR SCT003 BKN004 06/06 Q1017 BECMG 3000 BKN005

In cases with reduced visibility the so called 'Runway Visual Range RVR', which depends on the visibility, background luminance and runway lights, is included in the Metar:

j. runway considered
k. RVR – runway visual range in meters

Example:

j k j k

EDDM 290850Z 20002KT 1000 **R26R/P1500N R26L/1100VP1500U** RA BR

FEW001 SCT002 BKN005 06/06 Q1015 BECMG 3000 SCT005 OVC008

According to the European air navigation plan no SPECI are issued in METAR code form since every 30 minutes a METAR is issued. Special reports are issued as local report/QAM.

5.7.2. TAF (terminal area forecast)

Two types of TAF with different validities are disseminated. Airports issue either short or long TAF. For LSZH Long TAF are issued every 3 hours with a validity period of 30 hrs, beginning at 00/03/06/09/12/15/18/21 UTC.

Example:

…….A B C D E F G H

TAF LSZH 111125Z 1112/1218 20003KT 9999 FEW020 SCT180 TX16/1114Z TN09/1206Z

I J

TX11/1212Z BECMG 1120/1124 25010KT SCT020 BKN040 TEMPO 1123/1208 -RA TEMPO 1202/1208 29015G35KT 3000 +SHRA BECMG 1206/1209 31010KT PROB40 TEMPO 1214/1218 32015G25KT

Setup of the message:

A. 4 - letter (ICAO-) airport code
B. observation date/time (11th; 11:25 UTC)
C. validity time frame // date/time (from 11th, 12 UTC / until 12th 18 UTC)
D. wind direction in degrees / wind speed in knots
E. horizontal visibility in meters
F. cloud amount (FEW, SCT, BKN, OVC) and cloud base in 100 ft
G. TX = Temperature (highest for day) in centigrade/day&time UTC e.g.11th 14 UTC
H. TN = Temperature (lowest for night) in centigrade/day& time UTC e.g. 12th 08 UTC
I. TX = Temperature (highest for next day) in centigrade/day&time
J. weather codes as used for METAR (Decoding see 5.7.1)

TAF AMD: The TAF AMD is issued when a major change is forecasted for the validity period of the TAF.

TAF COR: TAF COR is issued when a formal error needs to be corrected.

CNL: When the forecast is cancelled (for example due to the non-availability of observations).

Examples:

TAF AMD LSZH 310300 310413 34015KT …

TAF COR LSZH 310300 310413 33015KT …

TAF LSZH 310300 310413 CNL

5.7.3. Most common abbreviations used in weather reports and forecasts during winter operations:

BECMG	becoming	BECMG 1518	change of MET-Conditions between 15 and 18 UTC
TEMPO UTC	temporary	TEMPO 1214	temporary fluctuations of MET-Cond. Between 12 and 14
PROB	probability	PROB40	probability of 40%
FM	from	FM 1215	change of MET-Conditions from 12.15 UTC
TL	till	TL 1305	change of MET-Conditions until 13.05 UTC
AT	at	AT 1410	change of MET-Conditions at 14.10 UTC
NOSIG METAR)	no significant changes forecasted for the next 2 hours (used in TREND forecast in		

Wind:

VRB variable wind direction (wind speed < 3 KT)

CAVOK Ceiling And Visibility OK

replaces visibility, present weather and clouds if the following criteria are met:

-> Meteorological visibility 10km or more

-> No clouds below 5000ft or below Minimum Sector altitude if higher than 5000ft (for LSZH the MSA is 8000ft AGL)

-> No Cumulonimbus

-> No significant weather phenomena present

Clouds:

(1 octa equals 1/8)

FEW	few	1-2 octas of sky covered
SCT	scattered	3-4 octas of sky covered
BKN	broken	5-7 octas of sky covered
OVC	overcast	sky fully covered (8 octas)

Typical weather phenomena during winter time:

-SN	light snow
SN	moderate snow
+SN	heavy snow
SHSN	showers of snow
-RA	light rain
RA	moderate rain
+RA	heavy rain
SHRA	showers of rain
RASN	rain with snow
SNRA	snow with rain
SHRASN	showers of rain and snow
TSSN	thunderstorm with snow
FZDZ	freezing drizzle
FZRA	freezing rain
FZFG	freezing fog
TSGS	thunderstorm with small hail or snow pellets
PL	ice pellets
TSGR	thunderstorm with hail
BLSN	blowing snow (6ft or more above the ground)
DRSN	drifting snow (up to 6 ft above the ground)
FG	fog (only reported if visibility < 1000m except in combination with BC, MI, PR, VC)
MIFG	shallow fog (below 6 ft above ground)

BCFG patches of fog (randomly covering the aerodrome)

PRFG partial fog (substantial part of the aerodrome is covered by fog)

IC ice crystals in suspension (only reported if visibility is ≤ 5000m)

BR mist (only reported if 1000m < visibility < 5000m and RH > 75%)

HZ haze (only reported if 1000m < visibility < 5000m and RH < 75%)

Table with weather phenomena (not all combinations are possible ore make sense):

Qualifier				Weather Phenomenon							
Intensity		Descriptor		Precipitation		Obscuration				Other	
-	light	MI	shallow	DZ	drizzle	FG	fog	FU	smoke	PO	sand whirls
	moderate	BC	patches	RA	rain	BR	mist	VA	volcanic ash	SQ	squalls
+	heavy	PR	partial	SN	snow			DU	dust	FC	tornado
VC	Vicinity	DR	low drifting	SG	snow grains			SA	sand	SS	sandstorm
		BL	blowing	IC	ice crystals			HZ	haze	DS	dust storm
		SH	showers	PL	ice pellets						
		TS	thunderstorm	GR	hail						
		FZ	freezing	GS	snow pellets						

6. IT Systems

6.1. AOS (Airport Operation System)

by Kevin Dornbierer FZAG Airport Steering & Deicing Coordination

Functions

- **Airport Operation System**
  - Flight numbers
  - Destinations
  - Stand / parking positions
  - Aircraft types / registrations
  - Delays – IATA codes
  - Actual off block / on block timings
  - Deicing provider
  - if applicable:
    - planned Deicing procedure: on-stand or remote
    - planned Deicing lane on remote Deicing pad
  - planned take-off runway
  - AOS – Input Mask for silent commincation Apron Control <-> Pad Coordinators

- **Management System for delay information**
  - ETD (estimated departure time) shown on passenger information boards and sent out by telex. Is considered as TOBT
  - Staff ETD (estimated departure time – not shown on passenger information boards and not sent out by telex). Is considered as TOBT
  - NI (next information)

- **Abbreviations used in Winter Operation**
  - **I** Deicing requested, planned for on-stand Deicing
  - **SEQ** not used
  - **ICE** Deicing truck assigned or Deicing in progress on-stand
  - **VOR** aircraft ‚pre-deiced' (Vorenteisung)

- **XXI** Deicing request cancelled by crew or airline staff
- **RIC** Deicing requested, planned for remote Deicing
- **RIO** not used

➢ **Headerline**

The headerline is used to disseminate important information to all airline staff at the airport. In Winter Operation, it will be used for the following information:

- Deicing on request
- general Deicing
- general Deicing with extended STW General Deicing with extended Slot Tolerance Window of -.. to +..

➢ **AOS Input Mask Pad Coordinator <-> Apron Control**

The AOS input Mask is used for silent communication and information sharing between Pad Coordinator and Apron Control and vice versa.

- Status of deicing lane
- Next aircrafts planned on specifc lane
- Status of deicing process and aircraft on specific lane

6.2. DMAN / darts (Departure and Arrival Traffic Management System)

by Fabian Brühwiler, FZAG Teamleader ICT Airfield Systems

Functions DMAN / ***darts***:

- A-CDM Plattform
- Departure Planning
  - Off Block Time planning respectively take off planning
  - Considering SID, wake turbulence category and aircraft speed class
  - Consideration of actual stand and T/O runway for taxi time
  - Deicing requests and Deicing status received from AOS
  - Basic adjustment of taxi time if remote Deicing is required including approx. Deicing time
  - Considering ATC Slots in the departing sequence planning and also consider the extended slot window in the departure sequence planning if special procedure is applied (reference point 10.2)
- Display of Taxi Strips
  - Sequencing of departing aircraft
  - Display of arriving, departing and towed aircraft
  - Display of runway crossing status
  - Display of aircraft being actual treated in the remote Deicing pad
- Arrivals
  - Display of stand allocation
- Abbreviations
  - SOBT Scheduled Off Block Time
  - **TOBT** Target Off Block Time
  - TSAT Target Start Up Approval Time
  - **TTOT** Target Take Off Time
  - **EDIT** Estimated DEICING Time
  - **Abbreviations according A-CDM Manual by Eurocontrol**

- Interfaces
  - **to TRACE** ATC-Flightplan, ATC slot, SID, aircraft separation matrix, ...
  - **to AOS** Flightplan, ELDT / SOBT / TOBT, Deicing status, ...
  - **to DGS** Activating the corresponding dock guidance system for arriving traffic. Displaying departure planning information like TOBT, TSAT, TTOT to the flight crew.

6.3. sally (Resource Allocation Management System)

by Marion Asshoff/Samuel Heinz, FZAG Resource Dispo / Airport Steering

Functions sally-stand

- stand allocation
- using same data warehouse as DMAN / darts

Functions sally-gate:

- gate allocation
- using same data warehouse as DMAN / darts

- **Deicing Pad – Apron – Deicing Coordination Fallback Communication System**
  - Webbased information screen for the case of failure of the AOS Input Device at Pad C/F and display at Apron Control and Deicing Coordination.
  - Lane available or closed / Entry or Exit clear / ACFT soon ready / ACFT released by Pac Coordinator
    - Dateils See specific Document (at DMS FZAG)

6.4. Deicing Tool “AROSA”

by Philip Gentsch, FZAG, Head Deicing Coordination

Functions ***Prognosis Tool***

- calculation of Deicing resources needed for a defined time range with defined standards
- using same data warehouse as AOS and DMAN / darts

Functions ***Planning Tool***:

- calculation of TSAT / TTOT , ECZT, EEZT based on given parameters (e.g. Taxi time, process time of Deicing, Takeoff slot)
- using same data warehouse as AOS and DMAN / darts

6.5. Borrma **(Boschung Road and Runway Management)**

by Corinne Häberlin, FZAG Airport Authority

Functions:

- on each of the three runways, three sensors are installed near the centerline, each measuring the ground temperature, surface condition (dry, moist, wet) and freezing temperature.
- along the three runways, measuring stations are transmitting the outside air temperature and precipitation
- the Borrma Software is used to manage data received from these measuring points
- the system is installed in the Airport Authority Duty Office and at the ‘Werkhofzentrale’ at Werkhof.
- three different alert levels indicate the risk of icing and trend for clear ice building up on the runway

7. Charges

7.1. Aircraft Deicing

by Philip Gentsch, FZAG Deicing Coordination

7.1.1. Charge for the use of the Deicing Facilities

FZAG imposes user fees for the use of the Deicing facilities. Details are to be found in the Airport Charges Catalogue.

7.1.2. Party liable to pay charge

The usage of de Deicing pads/areas will be charged to the ground handling company of the respective airline.

7.2. Removal of snow and ice

The charges for cleaning, clearing and Deicing of runways, taxiways and tarmac are included in the landing charges.

8. Crisis Management

8.1. ‘Krisenstab Schnee’

by Philip Gentsch, FZAG Deicing Coordination

Location: any meeting room according to arrangement

Start of Operation:

- continuous moderate to heavy snowfall
- continuous freezing rain
- on request of any member of the ‘Krisenstab Schnee’

Activation:

- by FZAG Winterops Coordinator
- by Airport Authority

Duties and competences:

- **Planning and coordination of further operations at ZRH airport during or after moderate to heavy snowfall.**
- **Coordination of Media information and updates after major irregularities due to snow or ice.**
- **Planning and coordination of tarmac cleaning after moderate to heavy snowfall.**

Formation / Organisation:

- FZAG Winterops Coordinator
- FZAG Airport Manager
- FZAG Terminal Manager
- Representative Apron Control
- Representative SKYGUIDE / Tower
- Representative FZAG Winterdienst
- Representative SWISS
- Representative SWISSPORT
- Representative dnata

- Representative AAS
- Representative Aviapartner
- Representative Meteo
- Representative AOC / Airlines

8.2. Information Media

by Philip Gentsch, FZAG Deicing Coordination

General: Whenever delays occur due to aircraft Deicing or due to snow removal on runways 'FZAG Corporate Communications' have to be informed by Deicing Coordination

Contacts::

- during office hours: Tel. +41 43 816 99 99 – Bettina Kunz or deputy
- outside office hours: Tel. +41 43 816 99 99 – taken over by Airport Steering
- SWISS Corporate Communications: Tel 0848 773 773 (Hot Line)

Actions by FZAG Corporate Communications:

- with Deicing Coordinator:
  - evaluation of actual situation
  - outlook for next two waves
- immediate information (according standing procedure) of
  - local radio stations
  - newspapers, magazines
  - news agencies

Media Information in case of delays and cancellations

- **Rules:**
  - **Media information by FZAG / SWISS / SKYGUIDE have to be coordinated**
  - **no company or partner shall be blamed for delays or shortcomings**
  - **main subject to be pointed out in media information is that in Winter Operation irregularities cannot be avoided but that the airport and all partners try to reduce the impact to a minimum**
- SWISS NOC will inform local radio stations at 04:45LT about cancelled SWISS flights.
- During the day, FZAG Corporate Communications will inform Media about the general situation at the airport, including delays and number of cancelled flights of all carriers – no specific flight numbers will be mentioned
- SWISS Corporate Communications will inform about their own operation, including delayed and cancelled SWISS-flights

8.3. Terminal Management FZAG

by Corinne Zingg, FZAG Terminal Management

8.3.1. Duty Terminal Manager

Location: Terminal 1, Office A 3-398

Contact: Tel. +41 43 816 76 00 E-Mail: terminal@zurich-airport.com

Duties and competences:

- continuous monitoring of all passenger flow areas and public zones in the terminals, @ front e.g.
  - in front of the terminals (curbside)
  - at the Airport Shopping and railway station
  - Check-in areas
  - Transit area
  - Passport Control Hall
  - Piers / Gates
  - Arrival Zones
- responsible for an orderly, safe and efficient handling process involving all terminal building users
- responsible for quality control of the entire airport infrastructure and appearance
- responsible for the enforcement of the house regulations (Hausordnung) in cooperation with the Police as well as the Terminal Regulations and various Service Level Agreements
- acts as Duty Terminal Manager (DTM) in case of emergencies/accidents and business interruptions
  - calls the airport crisis organisation if applicable
  - leads and coordinates the airport emergency care team (physical and emotional assistance for uninjured passengers and meeters/greeters)

Organisation:

Duty Terminal Manager

- on duty in the terminals 04:00 – 23:30 LT

Standby Terminal Manager – in case of emergencies

- standby 23:30 – 04:00 LT (within 1 hour present at airport)

8.3.2. Restaurants

- special requests (e.g. extension of opening hours) are handled
  - by Duty Terminal Manager
    Tel +41 43 816 76 00
  - by Duty Manager Airport Steering
    Tel +41 43 816 77 44

8.3.3. overcrowded terminals

- contact Duty Terminal Manager Tel. +41 43 816 76 00
  - for any actions to be taken
    - check-in stop
    - catering delivery
    - seating facilities
    - accommodation

8.3.4. facilities for stranded passengers

- contact Duty Terminal Manager Tel. +41 43 816 76 00
  - to organize accommodation and supervision based on the contingency plan for stranded passengers CP11

9. Annex

9.1. Decoding SNOWTAM

prepared by LIDO FlightNav Zurich

SNOWTAM FORM

AEROPLANE PERFORMANCE CALCULATION SECTION		
AERODROME LOCATION INDICATOR	A)	
DATE / TIME OF ASSESSMENT (**UTC**)	B)	
LOWER RUNWAY DESIGNATION NUMBER	C)	01
RWY CONDITION CODE (RWYCC) FOR EACH RWY THIRD (0-6)	D)	0 / 0 / 0
PER CENT COVERAGE CONTAMINANT FOR EACH RWY THIRD	E)	25 / 25 / 25
DEPTH (MM) OF LOOSE CONTAMINANT FOR EACH RWY THIRD	F)	/ /
CONDITION DESCRIPTION ON TOTAL RUNWAY LENGTH *OBSERVED ON EACH RUNWAY THIRD, STARTING FROM THRESHOLD HAVING THE LOWER RUNWAY DESIGNATION NR.* COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLIPPERY WET SLUSH SPECIALLY PREPARED WINTER RUNWAY (FOCA authorization required) STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE	G)	COMPACTED SNOW / COMPACTED SNOW / COMPACTED SNOW
WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITION CODES APPLY, IF LESS THAN PUBLISHED WIDTH	H)	
SITUATIONAL AWARENESS SECTION		
REDUCED RUNWAY LENGTH (LDA) IF LESS THAN PUBLISHED LENGTH (M)	I)	
DRIFTING SNOW ON THE RUNWAY	J)	
LOOSE SAND ON THE RUNWAY	K)	
CHEMICAL TREATMENT ON RUNWAY	L)	
SNOWBANKS ON THE RUNWAY *(IF PRESENT, DISTANCE FROM THE RUNWAY CENTERLINE (M), FOLLOWED BY "L", "R" OR "LR" AS APPLICABLE*	M)	
SNOWBANKS ON A TAXIWAY	N)	
SNOWBANKS ADJACENT TO THE RUNWAY	O)	
TAXIWAY CONDITIONS	P)	
APRON CONDITIONS	R)	
MEASURED FRICTION COEFFICIENT *(**NOT APPLICABLE**)*	S)	
PLAIN LANGUAGE REMARKS	T)	

NOTE.
REPEAT ITEMS B TO H IN CASE OF SEVERAL RUNWAYS.
INFORMATION ON THE SITUATIONAL AWARENESS SECTION REPEAT FOR EACH RUNWAY, TAXIWAY AND APRON.
REPEAT AS APPLICABLE, WHEN REPORTED
MINIMUM SNOWTAM CONTENT (NORMAL CONDITIONS): ITEM A-G.
*THE MAXIMUM VALIDITY OF SNOWTAM IS **8 HOURS**.*

Instructions for the completion of the SNOWTAM format

Aeroplane performance calculation section

Item A – Aerodrome location indicator (four-letter location indicator).

Item B – Date and time of assessment (month, day, hour and minute in UTC).

Item C – Lower runway designator number (nn[L] or nn[C] or nn[R]).
Only one runway designator shall be inserted for each runway and always the lower number.

Item D – Runway condition code for each runway third.
Only one digit (0, 1, 2, 3, 4, 5 or 6) is inserted for each runway third, separated by an oblique stroke (n/n/n).

Item E – Per cent coverage for each runway third. Insert NR (less than 10%), 25 (10-25%), 50 (26-50%), 75 (51-75%) or 100 (76-100%) for each runway third, separated by an oblique stroke (nn/nn/nn or nnn/nnn/nnn).
This info is only reported when runway condition for each runway third (Item D) has been reported as other than 6 and condition description for each runway third (Item G) has been reported as other than 'DRY'. When conditions are not reported, this shall be signified by the insertion of 'NR' for the appropriate runway third(s).

Item F – Depth of loose contaminant for each runway third. When provided, insert in millimetres for each runway third, separated by an oblique stroke (nn/nn/nn or nnn/nnn/nnn).
This information shall only be provided for the following contamination types:
— standing water, values to be reported 04, then assessed value. Significant changes 3 mm;
— slush, values to be reported 03, then assessed value. Significant changes 3 mm;
— wet snow, values to be reported 03, then assessed value. Significant changes 5 mm;
— dry snow, values to be reported 03, then assessed value. Significant changes 20 mm.
When the conditions are not reported, this shall be signified by the insertion of 'NR' for the appropriate runway third (s).

Item G – Condition description for each runway third.

Item H – Width of runway to which the runway condition codes apply. Insert the width in metres (without units of measurement) if less than the published runway width.

Situational awareness section

Elements in the situational awareness section for which no information exists, or where the conditional circumstances for publication are not fulfilled, shall be left out completely.

Item I – Reduced runway length (LDA). The applicable runway designator and available length in meters shall be inserted (e.g. RWY nn **LDA** REDUCED TO [n]nnn).
*This information is conditional when a **NOTAM** has been published with a new set of declared distances.*

Item J – Drifting snow on the runway. When reported, the lower runway designator shall be inserted with a space 'DRIFTING SNOW'.

Item K – Loose sand on the runway. When reported, the lower runway designator shall be inserted with a space 'LOOSE SAND'.

Item L – Chemical treatment on the runway. When reported, the lower runway designator shall be inserted with a space 'CHEMICALLY TREATED'.

Item M – Snowbanks on the runway. When snowbanks are reported present on the runway, the lower runway designator shall be inserted with a space 'SNOWBANK' and with a space left 'L' or right 'R' or both sides 'LR', followed by the distance in metres from centre line separated by a space 'FM CL'.

Item N – Snowbanks on a taxiway. When snowbanks are present on a taxiway(s), the taxiway designator(s) shall be inserted with a space 'SNOWBANKS' (TWY [n] or TWYS [n]/ [n]/ [n]… or ALL TWY SNOWBANKS).

Item O – Snowbanks adjacent to the runway. When snowbanks are reported present, penetrating the height profile in the aerodrome snow plan, the lower runway designator and 'ADJ SNOWBANKS' shall be inserted.

Item P – Taxiway conditions. When taxiway conditions are reported slippery or poor, the taxiway designator followed by a space 'POOR' shall be inserted (TWY [n] POOR or TWYS [n] /[n] /[n] …POOR or ALL TWY POOR).

Item R – Apron conditions. When apron conditions are reported slippery or poor, the apron designator followed by a space 'POOR' shall be inserted (APRON [n] POOR or APRON [n] /[n] /[n] … POOR or ALL APRONS POOR).

Item S – Measured friction coefficient *(not reported)*.

Item T – Item T should only be used to indicate Upgrading and Downgrading of RWYCC or for exceptional cases.
When Up- or Downgrading info is indicated, this shall be the first piece of info.
Acceptable for Item T is info on de-iced RWY section (insert 'DEICED RWY WIDTH [*X*] M. '). In case of partial RWY de-icing, RWYCC of the entire RWY width shall be indicated, i.e. not only for the de-iced partial area. To specify the RWYCC for the de-iced partial area, the RWY width must be reduced and specified in Item H.

9.2. Holdover Time Tables (HOT)

9.2.1. Holdover Time Tables

For Holdover Time Tables refer to publications from FAA and Transport Canada.

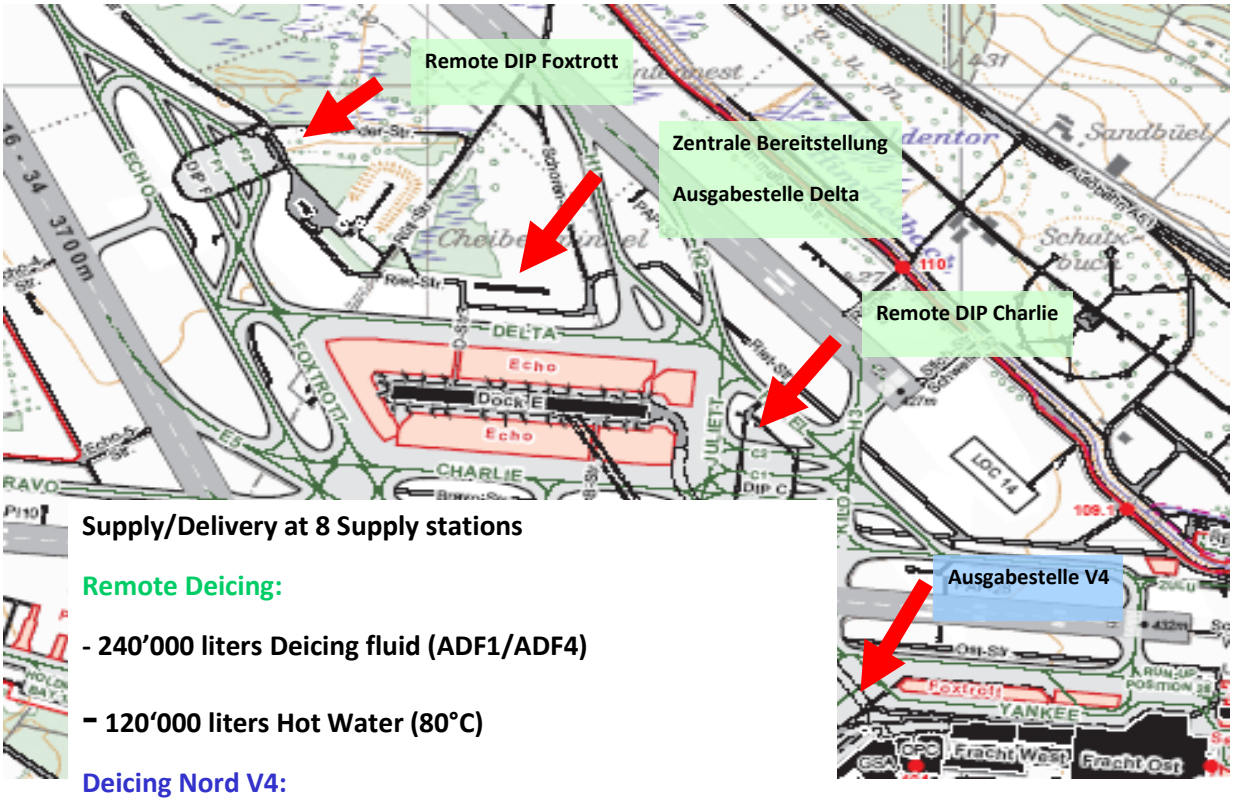
9.2.2. Use of Holdover Time Guidelines for type IV fluid

As a precautionary measure, after all anti-icing operations at ZRH airport with type IV fluid, we recommend to use the generic (worst case) holdover time guidelines for type IV fluids. Swissport strongly recommends not to use the product specific holdover time guidelines, as a timely information to all customers cannot be guaranteed in case the criteria for the use of these guidelines would not be met at some time.

10. Documents

10.1. Deicing Fluid and Hot Water storage facilities

by Daniel Höse, FZAG Head Maintenance Engineering



Supply/Delivery at 8 Supply stations

Remote Deicing:

- 240’000 liters Deicing fluid (ADF1/ADF4)

- 120‘000 liters Hot Water (80°C)

Deicing Nord V4:

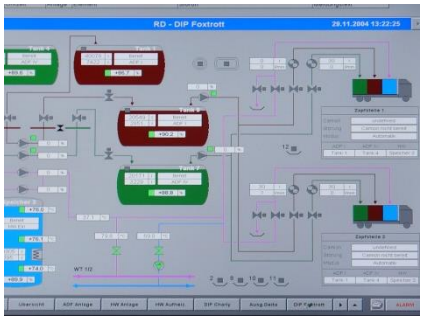
- 200’000 liters Deicing fluid (ADF1/ADF4)

- 30‘000 liters Hot Water (80°C)

Auslagerung der Enteisermittel mit Hilfe der Steuerungs- und Leittechnik

zu den Ausgabestellen DELTA, CHARLIE und FOXTROTT

Pumpwerk Zentrale



Visualisierung

Abfüllvorgang der Enteiserfahrzeuge

10.2. Deicing Plan for Zurich Airport

General overview to be found in Chapter 5.1 ‘Operational Status of the Airport’

Official Document written by Toni Habermacher, SKYGUIDE; revised in October 2008 by Jonas Wobmann, FMP Zurich; and issued by FZAG Operations

DEICING-PLAN FOR ZURICH AIRPORT

DEICING PLAN FOR ZURICH AIRPORT

VALID: (yearly) from 15th October until 30th April

Written by: FMP Zurich/ SKYGUIDE

Issued by: FZAG / ZRH Airport Steering

10.2.1. General introduction

A specific procedure has been created to improve the accuracy of the NMOC data and to overcome the problems associated with slot compliance during periods of adverse operating conditions at aerodromes in relation to Deicing. This procedure allows greater flexibility to the FMP/TWR giving them the procedures and tools to operate as efficient as possible, taking into account local conditions.

Through the provision of DPIs (incl. data from the Deicing tool) to NMOC, the overall information used as a basis for slot calculation has been improved.

10.2.2. Principle

The Deicing plan at Zurich airport is based on three phases, of which each phase represents a further escalation of the corresponding procedures to act on the corresponding situation.

10.2.3. Procedure

The Deicing plan consists of the following three phases decided by DC[3] and SPVR TWR:

PHASE 1 ★: Deicing on request

Deicing of Individual Aircraft (<50%)

Adherence to ATFM slots remains compulsory

- **DC, APRON CONTROL and DEICING PROVIDER shall:**
  - DC in close coordination with Deicing providers and Apron Control shall define the Deicing time and update the Deicing tool AROSA
  - Inform SPVR TWR about actual Deicing time
- **FMP shall:**
  - Coordinate possible individual slot extension with NMOC and transmit it to the TWR

PHASE 2 ★: General Deicing

Deicing of the majority of Aircraft (>50%)

Adherence to ATFM slots or the corresponding extensions remains compulsory

- **DC, APRON CONTROL and SPVR TWR shall:**
  - Coordinate with each other about the activation of General Deicing.
  - Coordinate if general slot extensions are required for the transition period.
- **APRON CONTROL shall:**
  - Activate General Deicing within the DMAN / darts system. With the activation of General Deicing all departing flights will be indicated accordingly within the DPI message to NMOC

- **SPVR TWR shall:**
  - Inform FMP.
  - Start the broadcast "General Deicing procedure in operation, contact 121.810 for requests" on DEP ATIS.
- **FMP shall:**
  - Inform SPVR ACC.
  - Request from SPVR ACC a cancellation of existing sector regulations in lower airspace, which shall be granted whenever possible.
  - Inform NMOC about General Deicing
    1. If requested, request a general slot extension, for the transition period, of 10 minutes for the next 30 minutes (e.g. to clean up the tarmac).
- **DC shall:**
  - In close coordination with Deicing providers and SPVR APRON define the Deicing time and update the Deicing tool AROSA

Cancellation of General Deicing

- **DC shall**
  - After consulting SPVR TWR and APRON switch back to Deicing on request.
- **DOS APRON shall:**
  - Deactivate General Deicing within the DMAN / darts system. With the backspace to Deicing-on-request, the DPI message to NMOC will be treated accordingly.
- **SPVR TWR shall:**
  - Discontinue the ‘General Deicing procedure in operation’ broadcast on ATIS.
  - Inform FMP about the cancellation of General Deicing.
- **FMP shall:**
  - Inform SPVR ACC.

PHASE 3 ★:General Deicing with extended Slot Tolerance Window

When the situation on the airport is no longer controllable or predictable while exhausting the maximum Deicing process time due to continuous snowfall, and most flights are missing their ATFM slots, it is recommended to activate the’ General Deicing with extended Slot tolerance Window’ procedure.

FMP has the complete overview of the state of adherence to CTOT / ETOT of departing aircraft and how the situation is currently reflected. Therefore FMP shall be part of the CDM[1] together with SPVR TWR, SPVR APRON and DC to decide about an activation of the 'General Deicing with extended Slot Tolerance Window' procedure. FMP shall report the current situation with regard to adherence to CTOT/ETOT while DC shall report the predictions of AROSA and the currently used Deicing time values.

A snow committee teleconference is usually called in every hour or on request. If the meteorological previsions forecast snow during night and the next morning, such a conference may be called in at 2115 LT to plan the actions for the remainder of the day and the next morning.

Nevertheless 'General Deicing with extended Slot Tolerance Window' will be applied only after coordination and analysis on D-Day.

FMP may suggest the activation of the 'General Deicing with extended Slot Tolerance Window' procedure and as well the cancellation of the procedure.

General

- The Snow Committee is in charge of activating / prolongation / deactivating 'General Deicing with extended Slot Tolerance Window'
- Once activated, 'General Deicing with extended Slot Tolerance Window' shall be kept for at least 1 hour.
- During 'General Deicing with extended Slot Tolerance Window' the STW of regulated flights is extended according coordination ranging max. up to -15 to +30 around the CTOT.
- Adherence to ATFM slots considering their extended tolerance window remains compulsory.

ATTENTION
Based upon their interpretation, NMOC may deny the extension of the STW.

Activation of 'General Deicing with extended Slot Tolerance Window'

- The Snow Committee shall decide after coordination about the activation of 'General Deicing with extended Slot Tolerance Window' including the:
  - foreseen time span (start and end) during which 'General Deicing with extended Slot Tolerance Window' is required
  - the upper and lower part of the tolerance window .
  - decision if all or only Deicing flights shall be included.

[1] CDM = Collaborative Decision Making

- **FMP shall:**
  - Request via NMOC to
    1. Extend the slot tolerance window for regulated flights departing LSZH according the agreement reached by the snow committee.
    2. Extend the time frame for the STW extension on an hourly basis as it can only be entered for clock +1h within the NMOC system.
  - Inform DC/ SPVR APRON/ SPVR TWR in case the request has been denied by NMOC.
  - Forward the information to SPVR TWR and APRON from which point in time onwards the slots are extended to assure the corresponding ATIS broadcast.
  - Inform SPVR ACC and request cancellation of lower sector regulations;
- **SPVR TWR shall:**
  - Start broadcast: ‘General Deicing with extended Slot Tolerance Window’ procedure in operation, contact 121.810 for requests" on DEP ATIS.
  - Advise staff on duty about the extended STW, and that adherence to it is still required.
  - Enter in TRACE the applicability of the extended STW period in order to reflect the correct extended STW to staff
  - Inform SPVR APRON and FMP if no departures or arrivals are possible, e.g. due to snow clearing.
- **DOS APRON shall:**
  - Inform staff on duty about the extended tolerance window.

End of ‘General Deicing with extended Slot Tolerance Window’ / Normal Operation

In close coordination with each other either FMP, DC, SPVR APRON, or SPVR TWR shall request the End of ‘General Deicing with extended Slot Tolerance Window’. All partner shall agree, as soon as the majority does not require the extended tolerance window anymore.

Either through:

- Not further prolonging the agreed period.
- Defining a new end time.

Either way clear communication is required to assure awareness of all parties involved.

DC will define the Deicing process time valid after the end of the ‘General Deicing with extended Slot Tolerance Window’.

- **SPVR TWR shall:**

- Stop the corresponding broadcast on DEP ATIS, and activate the agreed new state of the airport regarding Deicing, at the defined point in time.
- Advise staff that from a specific point in time standard STWs are applicable again.

- **DOS APRON shall:**
  - Advise his staff that the from a specific point in time standard STWs are applicable again
- **FMP shall:**
  - Inform SPVR ACC and DOS APRON

10.2.4. General duties valid for all phases

- **FMP shall:**
  - Request a Zero-rate regulation for ARR when the airport is closed for more than 30 min.
  - Monitor the slot adherence.
- **TWR und APRON CONTROL:**
  - are free to determine the departure sequence.
  - shall respect the ATC Slot of all flights.
  - Shall coordinate with each other if no departures at all are possible, to assure the inclusion in the DPIs.
- **APRON CONTROL shall:**
  - Input the RWY closure for snow cleaning in the DMAN / darts system, to calculate adequate TTOT.

10.3. Extract AIP

LSZH AD 2 - 23

(Note: Numbering used below as per Original AIP references)

LSZH AD 2.20

5. Deicing

5.1 Most aircraft departing from LSZH are planned for remote Deicing

Exceptions:

- Operational requirements at discretion of Deicing Coordinator Zurich Airport
- Customers of Deicing Provider dnata (Deicing Coordination Zurich Airport informs crew if remote Deicing pre-arranged)
- Customers of Deicing Provider Jet Aviation (Deicing Coordination Zurich Airport informs crew if remote Deicing pre-arranged)
- Customers of DEICING Provider SWP operating propeller aircraft, aircraft requiring underwing DEICING/clear ice check after DEICING/aircraft manufacturers special requirements apply

5.2 Deicing - Status

The Deicing status at Zurich airport may be one of the three following:

- Deicing on request
- General Deicing
- General Deicing with extended Slot Tolerance Window

Departure ATIS broadcasts the Deicing status if ‘General Deicing” or “General Deicing with extended Slot Tolerance Window” is in use.

5.3 Deicing - Procedures

I. If Deicing is required the flight crew shall call “Deicing Coordination” on FREQ **121.810** MHz no later than 15 minutes before TOBT, prior to departure clearance. This call shall be made irrespective of the Deicing status. The flight crew will be informed about the Deicing location foreseen (on-stand or remote Deicing).
II. A-CDM definition according 3.3.2.2 applies.
III. TOBT shall not be adjusted to reflect the DEICING process (spraying time).

5.3.1 Aircraft, de-iced on stand

I. Flight crew shall contact "Zurich Delivery" at TOBT +/-5min and report “aircraft ready” for on stand DEICING.
II. When DEICING activities are completed, standard start-up/push-back and taxi procedure shall be followed in accordance with chapter 3 § 3.3.2.5

5.3.2 Aircraft, foreseen for remote Deicing: Map LSZH AD-2.24.1 – 1 (links to respective page)

- Standard start-up/push-back procedure shall be followed in accordance with chapter 3 § 3.3.2.6 - 3.3.2.7;
- TAX on to the Deicing lane as instructed by “Zurich Apron”; and stop at the marked and yellow lighted stop position (“STOP DEICING”) located to the left of the Deicing lane for commencement of Deicing (REF: LSZH AD 2.9)
- After reaching the Deicing stop PSN (“STOP DEICING”) on the Deicing lane, contact the pad coordinator when instructed:
  - Pad Charlie **FREQ 121.640 MHz**
  - Pad Foxtrott **FREQ 121.635 MHz**
- Pad coordinator may instruct to adjust aircraft position if required.
- After Deicing, when released by the pad coordinator, request TAX clearance from "Zurich Apron"

5.3.3. Between 1st November and 31st March it is prohibited to drain the aircraft’s drinking water tanks onto the tarmac.

5.4 Clean Aircraft Concept (CAC)

Clean Aircraft Concept as defined in ICAO Doc 9640 is applied; aircraft are de-iced according to the requirements of SAE AS6285C. Airport Authority can intervene in case of non-adherence.

3.3.2.3 ATC Clearance

No earlier than 15’ prior to TOBT the crew shall contact “ZURICH DELIVERY” to request departure clearance.

3.3.2.4 Aircraft Ready

Pilot should report ready to "Zurich Delivery" at TOBT +/-5minutes tolerance irrespective of DEICING, pushback vehicle availability and TSAT

10.4. Attachment to the standard Ground Handling Agreement

issued by Swissport

Attachement X

Specification to SGHA item 7.6 Deicing / Anti-Icing

1. PROCEDURES AND USED MATERIALS

- Deicing / Anti-icing Services are carried out by the Supplier according to the procedures specified in Customers De- / Anti-Icing Manual. In absence of a Customer Deicing / Anti-Icing Manual, Swissport's local standard procedure will apply.

- Only Deicing / Anti-icing Fluids specified in DAM are used

- Additional requests are subject to additional charges.

- Remote resp. Stand Deicing Procedure will be decided and coordinated by centralized Deicing Coordination.

2. RESPONSIBILITIES

2.1 Responsibilities of the Carrier

- The Pilot in Command (PIC) or the authorized representative of the Carrier decides whether Deicing / Anti-icing is required and requests the services.

- The (PIC) is responsible for accepting the aircraft with the performed Deicing / Anti-icing treatment.

Note: The final decision for the airplane rests with the PIC. Therefore, his requests will overrule the judgments of Supplier crews and may include additional instructions.

2.2 Responsibilities of Supplier

- Deicing / Anti- icing is only carried out by trained and qualified personnel. The training includes the procedures specified in the manuals. Applicable training records are available.

- The Supplier is responsible for correct and complete accomplishment of the Deicing / Anti-icing of the airplane according to Paragraph 1, the final inspection and information to the flight crew of the results by means of Deicing / Anti-icing code is carried out in accordance to the manuals.

- By transmitting the Deicing / Anti-icing code to the flight crew, the Supplier confirms that the check after Deicing / Anti-icing is completed and that the aircraft critical parts are free of ice, frost, snow and slush.

- Clear ice- and hands on-checks requested for certain A/C types by an licensed Aircraft Engineer are not part of this agreement and therefore not included.

- The Supplier is responsible for the proper quality of the Deicing / Anti-icing fluid applied to the aircraft surfaces.

10.5. Index of relevant documents issued by partners

10.5.1. SWISSPORT INTERNATIONAL LTD.

De-/Anti-Icing Operations Manual

issued by SWISSPORT INTERNATIONAL LTD.

10.5.2. Airlines

DAM – Deicing / Anti-icing Manuals

issued by different Airlines

10.5.3. Swiss International Airlines

De-/Anti-icing at Zurich Airport (for cockpit crews)

issued by Fleet Chiefs

10.5.4. dnata

Winter manual De-/Anti-icing (for handling organisation)

De-/Anti-icing Procedure Manual (Deicing procedures**)**

10.5.5. Jet Aviation / Allen Groupe

Winter manual De-/Anti-icing (for handling organisation)

11. Glossary

Acceptance Rate

The acceptance rate indicates the number of aircraft planned to land at an airport per hour. The rate may be reduced by ATC according to the prevailing meteorological conditions, runway conditions, available parking positions and for other reasons.

Ad hoc-Deicing

Deicing of a single aircraft not planned in advance and request received on short notice. Reaction time is 60 min outside defined Deicing period.

Anti-icing

Precautionary procedure which provides protection against the formation of frost or ice and accumulation of snow or slush on treated surfaces of the aircraft for a limited period of time (holdover time).

ATC Slot

CTOT (calculated take-off time) is issued by Eurocontrol at Brussels as soon as any restriction exists at, arrival airport or on the route of a flight. The slot is valid from CTOT – 5min to CTOT + 10min, i.e. 15 minutes. The calculation is based on TOBT plus taxi-out time.

ATIS 'Automatic Terminal Information Service'

Weather and operational information for crews

VHF frequency 129.000 MHz

Telephone No. +41 43 / 816 22 95

ATS 'Air Traffic Services'

Expression covers all services by Air Traffic Control (ATC) and local organisations (e.g. Apron Control by FZAG) which handle the movement of aircraft on ground and in the air.

‚Ausnahme-Situation' – exceptional situation

‚Ausnahme-Situation' is an extreme weather situation with major impact on flights and airport operations. Examples:

- intense snowfall
- continuous moderate or heavy snowfall
- Freezing Rain
- persistent runway closure due to wind / runway conditions / technical reasons

Such a situation will lead to cancellations, delays and/or diversions.

Braking Action / Bremswirkung (sorry no translation)

Qualitative Beurteilung der Reibungscharakteristik eines Pistenzustandes, ausgedrückt in beschreibenden Begriffen wie gut/good, mittel/medium, schlecht/poor.
Gemessene Reibungskoeffizienten **(μ)** können mittels Korrelationstabellen in Bremswirkung umgewandelt werden.

Check

an examination of an item against a relevant standard by a trained and qualified person.

Clear Ice

A coating of ice, generally clear and smooth, but with some air pockets. It is formed on exposed objects at or below or slightly above the freezing temperature by freezing of supercooled drizzle, droplets or raindrops.

Clear ice may form on wings if the fuel temperature is below freezing point and the aircraft is subject to precipitation, even with outside temperatures of 15º C or higher.

CTOT 'Calculated Take-Off Time

Time calculated by Eurocontrol Brussels based on TOBT of a flight plus planned taxi-time. This time considers flight time to restricted points in European airspace (see ATC Slot)

Deicing

Procedure by which frost, ice, snow or slush is removed from an aircraft in order to provide uncontaminated surfaces.

Deicing on request

No precipitation, only part of the departing aircraft require Deicing.

Change from 'General Deicing' to 'Deicing on request' initiated at the end of a period with snowfall when most of departing aircraft do not need Deicing any more.

Deicing Period

The Deicing period starts October, 01st and ends April, 30th.

Deicing / Anti-icing Fluid

Deicing fluids are:

- heated water
- heated concentrates or mixtures of TYPE I fluid and water
- heated concentrates or mixtures of TYPE IV fluid and water *(not used in ZRH)*

Deicing fluid is normally applied heated in order to assure maximum efficiency.

- **TYPE I** fluid: un-thickened fluid which viscosity is shear independent. Contains a minimum of 80% by weight of glycols. TYPE I fluids give a rather limited holdover time and in precipitation conditions they are preferably used for Deicing only.
- **TYPE IV** fluid: Thickened fluid with a non-Newtonian flow behavior. Contain a minimum of 50% by weight of glycols. Type IV fluiod is used anti-icing and is applied pure 100%.

Deicing Trucks
For use on Remote Deicing Pads, in ZRH so called Vestergaard Beta Trucks (10 by Swissport) are used, featuring a closed cabin with a telescopic arm used for spraying.

For On-stand Deicing, in ZRH Swissport uses so called Vestergaard Gamma trucks (equipped with a basket, spraying is done from a lance) and dnata or Vestergaard Trucks with closed cabin. All trucks are equipped with three tanks for ADF Type I / IV / hot water, mixture of ADF Type I with hot water is done on the truck during the spraying action.

Departure Rate

A departure rate may be issued by ATC if any restriction exists for departing traffic.

ETD

Estimated Time of Departure shown to passengers on public information boards and screens in the airport. Is considered as a TOBT.

Staff ETD

ETD published for airport staff only, not shown on public information boards and screens in the airport. Is considered as a TOBT. As soon the flight is ‘closed’ a regular’ ETD is considered in the Departure Control System. SED shall not be used for A-CDM sequencing issues, neither for delayed onstand Deicings.

Freezing Fog:

Used to describe the phenomena when fog is present and the air temperature is below 0°C. With freezing fog present during Deicing, a two-step (de- and anti-icing) procedure MUST be applied.

Freezing Rain:

Rain that falls through a shallow layer of freezing temperatures at the surface and freezes upon impact to form a coating of glaze upon the ground and on exposed surface. Normally no take-offs allowed during Freezing Rain.

Friction Coefficient / Reibungskoeffizient (sorry no translation)

Der Reibungskoeffizient **μ** entspricht dem numerischen Verhältnis zwischen Bremskraft und Radlast, bei einem gebremsten Messrad eines Messgerätes, welches mit ca. 15 % der Vorwärtsgeschwindigkeit geleistet wird (Bremsschlupf).

General Deicing

Most or all departing aircraft require Deicing. Status disseminated by ATIS and in AOS.

Influences of the status 'General Deicing':

- Most aircraft will need Deicing, crews/airlines/Handling agents have to contact Deicing Coordinator latest 15 Mins. before TOBT.
- special ATS procedures enforced

Holdover Time

Estimated time for which an anti-ice fluid will prevent the formation of frost or ice and the accumulation of snow on the protected surfaces of an aircraft on the ground before commencing take-off roll. The protection ends when commencing the take-off roll and there is no protection from the fluid during the flight.

One step / Two step procedure

one step: is performed with aDn anti-icing fluid. The heated fluid used to de-ice the aircraft remains on aircraft surface to provide limited anti-icing capability.

two step consists of two distinct steps: Deicing procedure and anti-icing procedure

On-stand Deicing (Standplatzenteisung)

Aircraft are de-iced on their parking position after loading and boarding is completed.

Pre-Deicing / *Vorenteisung* (VOR)

An aircraft receives a Pre-Deicing treatment if the corresponding weather forecasts does not forecast any precipitation/freezing fog, until the take-off time.
A two-step procedure (De- & Anti-icing fluid) is applied.

After the end of the process, until the start of any handling activity, a minium dwell time of 60 minutes should be observed.

Remote Deicing / Remote Deicing Pad (RDP)

Deicing of aircraft is executed on specially designed and equipped places, so called Remote Deicing Pads. These RDP are located on the way from parking position to the take-off runway.

STD - Scheduled Time of Departure

Departure time of a flight published in the time tables and tickets of the passengers. Is considered as a TOBT

TOBT - Target Off Block Time

Time at which the aircraft is expected to be ready for departure if not coinciding with SOBT – Scheduled Off Block Time. TOBT is set by airline or handling agent. An TOBT is also set if an aircraft is ready to depart but other reasons (such as ATC delay / start-up delay / Deicing) delay the departure.

Trunked Radio System

‚Betriebsfunksystem' at Zurich Airport (Bündelfunk)

12. Distribution

12.1. FZAG

- O / OG / OF / OM / ON / Airport Authority / Corporate Communications Terminal Management

12.2. SR Technics

- TEMA

12.3. Handling Agents

Swissport	Deicing Coordinator
dnata	Station Control
Cargologic	Operations
Jet Aviation	Operations
Cat Air Service	Operations

12.4. Swiss

- NOC / Ops Engineering / Flight Ops / Quality Assurance Ground Operation Switzerland

12.5. Local Carriers

Edelweiss	Operations (via AOC)
Helvetic	Flight Operations
Chair	Flight Operations
REGA	Operations

12.6. Airlines

- AOC
- Airlines represented at ZRH Airport

12.7. SKYGUIDE

- Tower
- FMP – Flow Management

12.8. External

- BAZL Zürich
- BAZL Bern

Distribution method:

Email is sent by Head Deicing Coordination to members on contact list "Winter Operation" (update by Head Deicing Coordination; available with Airport Steering/Deicing Coordination -> Outlook -> Kontakte) notifying all members, that the updated manual is available on the Internet

(Link: Winter operation – Flughafen Zuerich (flughafen-zuerich.ch)

No paper edition is sent out anymore since Nov'07.