



ATD-2 Integrated Arrival/ Departure/Surface (IADS) System Software Version 3.0.x Releases and Notes

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Table of Contents

1	Purpose	5
2	Release 3.0.1	6
2.1	Overview	6
2.2	New Features	6
2.3	Improvements	6
2.4	Fixes	6
2.5	Operations	6
3	Release 3.0.2	6
3.1	Overview	6
3.2	New Features	6
3.3	Improvements	6
3.4	Fixes	6
3.5	Operations	7
4	Release 3.0.3	7
4.1	Overview	7
4.2	New Features	7
4.3	Improvements	7
4.4	Fixes	7
4.5	Operations	7
5	Release 3.0.4	7
5.1	Overview	7
5.2	New Features	7
5.3	Improvements	8
5.4	Fixes	8
5.5	Operations	8
6	Release 3.0.4.1	8
6.1	Overview	8
6.2	New Features	8
6.3	Improvements	8
6.4	Fixes	8
6.5	Operations	8
7	Release 3.0.4.2	8
7.1	Overview	8
7.2	New Features	9
7.3	Improvements	9
7.4	Fixes	9
7.5	Operations	9
8	Release 3.0.5	9
8.1	Overview	9
8.2	New Features	9
8.3	Improvements	9
8.4	Fixes	9
8.5	Operations	10
9	Release 3.0.5.1 / 3.0.5.2	10
9.1	Overview	10
9.2	New Features	10
9.3	Improvements	10
9.4	Fixes	10
9.5	Operations	10
10	Release 3.0.5.3	10
10.1	Overview	10
10.2	New Features	10
10.3	Improvements	10

10.4	Fixes	11
10.5	Operations	11
11	Release 3.0.5.4.....	11
11.1	Overview	11
11.2	New Features	11
11.3	Improvements	11
11.4	Fixes	11
11.5	Operations	11
12	Release 3.0.5.5.....	11
12.1	Overview	11
12.2	New Features	11
12.3	Improvements	11
12.4	Fixes	11
12.5	Operations	11
13	Release 3.0.6.....	12
13.1	Overview	12
13.2	New Features	12
13.3	Improvements	12
13.4	Fixes	12
13.5	Operations	12
14	Release 3.0.6.1 / 3.0.6.2.....	12
14.1	Overview	12
14.2	New Features	12
14.3	Improvements	13
14.4	Fixes	13
14.5	Operations	13
15	Release 3.0.6.3.....	13
15.1	Overview	13
15.2	New Features	13
15.3	Improvements	13
15.4	Fixes	13
15.5	Operations	13
16	Release 3.0.7 / 3.0.7.1.....	13
16.1	Overview	13
16.2	New Features	13
16.3	Improvements	14
16.4	Fixes	14
16.5	Operations	14
17	Release 3.0.7.2.....	14
17.1	Overview	14
17.2	New Features	14
17.3	Improvements	14
17.4	Fixes	14
17.5	Operations	14
18	Release 3.0.8 / 3.0.8.1 / 3.0.8.2.....	15
18.1	Overview	15
18.2	Dashboard:	15
18.3	Data Quality:	15
18.4	Scheduler Changes	15
18.5	RTC and Client:	15
18.6	Client:	15
18.7	RTC:.....	16
18.8	Operations	17
19	Release 3.0.8.3.....	17
19.1	Overview	17

19.2	New Features	17
19.3	Improvements	17
19.4	Fixes	17
19.5	Operations	17
20	Release 3.0.9.1	17
20.1	Overview	17
20.2	New Features	17
20.3	Improvements	17
20.4	Fixes	17
20.5	Operations	17

1 Purpose

Below are change reports for the 3.0.x series of releases to Charlotte-Douglas International Airport (CLT). These list all the changes since the previous release. The Release Notes for Distribution are meant to be more readable by stakeholders.

Release	Release Date	CLT Deployment Date	Notes
V3.0.0	11 Jul 2017	14 Jul 2017	
V3.0.1	25 Jul 2017		
V3.0.2	08 Aug 2017	08 Aug 2017	
V3.0.3	23 Aug 2017	28 Aug 2017	
V3.0.4	06 Sep 2017	11 Sep 2017	
V3.0.4.1	13 Sep 2017	13 Sep 2017	
V3.0.4.2	15 Sep 2017	15 Sep 2017	
V3.0.5	20 Sep 2017	20 Sep 2017	
V3.0.5.1	21 Sep 2017		
V3.0.5.2	22 Sep 2017	22 Sep 2017	
V3.0.5.3	25 Sep 2017	25 Sep 2017	
V3.0.5.4	03 Oct 2017	05 Oct 2017	
V3.0.5.5	10 Oct 2017	11 Oct 2017	
V3.0.6	18 Oct 2017	18 Oct 2017	
V3.0.6.1	20 Oct 2017	23 Oct 2017	
V3.0.6.2	24 Oct 2017	24 Oct 2017	
V3.0.6.3	8 Nov 2017	14 Nov 2017	
V3.0.7.0,	16 Nov 2017		
V3.0.7.1	27 Nov 2017	28 Nov 2017	
V3.0.7.2	30 Nov 2017	05 Dec 2017	
V3.0.8,	17 Dec 2017		
V3.0.8.1,	26 Dec 2017		
V3.0.8.2	05 Jan 2018	09 Jan 2018	
V3.0.8.3	12 Jan 2018	12 Jan 2018	
v3.0.9.1	24 Jan 2018	25 Jan 2018	

2 Release 3.0.1

2.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.1. Version 3.0.1 was delivered on 25 July 2017.

2.2 New Features

- Enhanced surface scheduler algorithms for improved stability and accuracy.
- Reduced message traffic from STBO to TBFM.
- Minor improvements to user interface including color coding of ground stop flights.

2.3 Improvements

- Improved gate conflict detection logic to reduce missed conflicts.

2.4 Fixes

- Made various bug fixes to enhance system stability.
- Enhanced readability of RTC with fonts and icon behavior, and adding more information at some zoom levels.
- Fixed processing of TMI information from the OIS site.
- Fixed ability to cancel APREQ for some flights.

2.5 Operations

- No change to installation or start-up procedures

3 Release 3.0.2

3.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.2. Version 3.0.2 was delivered on 08 August 2017.

3.2 New Features

- User Interface:
 - Added more information to arrival strips.
 - Enabled both APREQ and EDCT to show on flight strips as appropriate.
 - Added source of restrictions to Client display.
 - Removed obsolete features from tower display.
 - Added notifications when restrictions end.

3.3 Improvements

- Expansion of system configuration and robustness.

3.4 Fixes

- Fixed readability and usability issues for RTC and Client.
- Prevented some actions on Client unless user has appropriate permissions.
- Fixed issues with notification panel inconsistencies.
- Fixed flight consistency issue between Client and RTC.
- Fixed APREQ acknowledgement issue.
- Fixed issues with how TMIs are applied.

3.5 Operations

- No change to installation or start-up procedures

4 Release 3.0.3

4.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.3. Version 3.0.3 was delivered on 28 August 2017.

4.2 New Features

- DASH has a new cell to show predicted gate conflicts, showing the two flights, the gate, and the conflict times
- The Client display has a new panel to show what exclusions have been entered
- Fix closures are also now read and processed automatically from the OIS web site

4.3 Improvements

- Improved the sorting of flights in the airline Priority list
- Added buffers to account for taxi time uncertainty, which will lead to more achievable take-off times
- Improved readability of the RTC display (includes several items)
- Multiple back-end enhancements to system configuration and data processing

4.4 Fixes

- Multiple fixes for enhanced stability
- Fixed readability of fonts when displaying a gate conflict for an arrival
- Fixed errors in reading of some OIS restrictions

4.5 Operations

- No change to installation or start-up procedures

5 Release 3.0.4

5.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.4. Version 3.0.4 was delivered on 11 September 2017.

5.2 New Features

- DASH:
 - Show Departures and Arrivals by East/West side as well as by departure fix.
- User Interface:
 - Readability of strips on RTC is improved.
 - Users may now move strips manually on RTC.
 - Flights manually moved (e.g., to hangar) will start in that position when activated.
- IDAC/APREQ:
 - Show source of APREQs in TM Actions and Notifications panels.
 - Departure runways shown on STBO and TBFM will now agree.
 - Negotiation can now occur in any APREQ mode.

5.3 Improvements

- DASH
 - New quick-look cell shows ground stops.
 - New plot shows predicted queue size and counts by east/west direction.
- System
 - Added data sources and adaptation to support DFW configuration.
- Adaptation
 - Taxiway lines for the B-C alley have been updated.
 - Updated arrival/departure fixes – GANTS and PARQR

5.4 Fixes

- Corrected issue with duplicate flights.
- Corrected gate conflicts consistency issue.
- Removed unused user interface features.
- Fixed other minor user interface features.

5.5 Operations

- No change to installation or start-up procedures.

6 Release 3.0.4.1

6.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.4.1. Version 3.0.4.1 was delivered on 13 September 2017.

6.2 New Features

- None.

6.3 Improvements

- Improved system configuration for training system.

6.4 Fixes

- Fixed source column in APREQ table to be more understandable.
- Fixed issues affecting system stability.
- Fixed issues associated with scheduler ETA buffers.
- Adjusted adaptation for new departure fixes.

6.5 Operations

- No change to installation or start-up procedures

7 Release 3.0.4.2

7.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.4.2. Version 3.0.4.2 was delivered on 15 September 2017.

7.2 New Features

- None

7.3 Improvements

- None

7.4 Fixes

- Corrected issue that prevented an Observer mode controller display (Client) from starting.

7.5 Operations

- No change to installation or start-up procedures

8 Release 3.0.5

8.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.5. Version 3.0.5 was delivered on 20 September 2017.

8.2 New Features

- DASH:
 - Added new indicator of overall system health.
 - Added arrival/departure indicator to gate conflict display.
- User Interface:
 - Enhanced arrival search with automatic zoom to flight.
 - Added more information to arrival details panel.
 - Changed B757 display to reflect that it's a heavy.
 - Added new hot keys as requested by users.
 - Made other minor enhancements to user interfaces.
- IDAC/APREQ
 - User may now cancel APREQ times that came from SWIM feed.
- TMI
 - System will not recognize two TMI restrictions with overlapping periods as duplicates.
- System:
 - Created configuration for DFW operations.

8.3 Improvements

- Improved processing of TRACON scratchpad runways for arrivals.
- Improved logic for matching of flights across various sources.
- Updated adaptation to better match CLT operations.
- Improved software design in various areas to improve behavior, robustness, and ability to debug issues.
- Added performance monitoring of more components and data feeds.

8.4 Fixes

- DASH
 - Improved stability and performance.
- User Interface
 - Fixed landing runway consistency, gate conflict display, flights table search, and flights table filter.
 - Enhanced RTC readability.

- Flight Matching
 - Fixed several cases in which flights were not properly matched across data sources.
- IDAC/APREQ
 - Fixed bug that prevented exclusion of flights from an APREQ on the timeline.
- System
 - Fixed reset on what-if system.

8.5 Operations

- No change to installation or start-up procedures

9 Release 3.0.5.1 / 3.0.5.2

9.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.5.1. Version 3.0.5.1 was delivered on 22 September 2017.

9.2 New Features

- Incorporated field changes into delivered user preference files.

9.3 Improvements

- Improved system robustness.
- Improved taxi time predictions.
- Updated CLT TRACON video maps.

9.4 Fixes

- Fixed error in passing of some TMI restrictions from Client to RTC.
- Fixed errors in detection of TMIs as being duplicates that were not.
- Fixed error in ramp closure processing.
- Fixed errors in notifications window for various TMI changes and inputs.
- Addressed more flight matching issues.

9.5 Operations

- No change to installation or start-up procedures

10 Release 3.0.5.3

10.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.5.3. Version 3.0.5.3 was delivered on 25 September 2017.

10.2 New Features

- None

10.3 Improvements

- None

10.4 Fixes

- Fixed an error in flight matching that caused the surface ASDE-X to do too much processing, overloading that server.

10.5 Operations

- No change to installation or start-up procedures

11 Release 3.0.5.4

11.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.5.4. Version 3.0.5.4 was delivered on 05 October 2017.

11.2 New Features

- Updated user preference files.

11.3 Improvements

- Enabled sending of IMC configurations from STBO to TBFM, which enhances arrival trajectory prediction.

11.4 Fixes

- Corrected separation matrices for IMC.
- Modified surface display to show more tracked flights.
- Fixed issue preventing manual spot assignment in some cases.

11.5 Operations

- No change to installation or start-up procedures

12 Release 3.0.5.5

12.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.5.5. Version 3.0.5.5 was delivered on 11 October 2017.

12.2 New Features

- No change in new features

12.3 Improvements

- Modified site adaptation to account for new runway-to-departure fix mappings.

12.4 Fixes

- No fixes were included

12.5 Operations

- No change to installation or start-up procedures

13 Release 3.0.6

13.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.6. Version 3.0.6 was delivered on 18 October 2017.

13.2 New Features

- User Interface (RTC)
 - Added ability to create a flight strip, if it can be associated with a flight in the ATD-2 system.
 - Added ability to designate a flight as being repositioned or suspended from scheduling.
 - Added ability to undo Pushback state, whether manually or automatically set.
 - Added text showing radio frequencies for gates on background map.
 - Added additional information to arrival flight strips.
 - Added blue outline indicator for B757 types.

13.3 Improvements

- Set default surface metering mode to be “no metering”.
- Enhanced modeling of GA flights to avoid them getting stuck in “In Ramp” state.
- Increased modeled inter-flight spacing for Arrivals and Departures to make ETOT more realistic.
- Increased minimum spacing between arrivals to make ETA's more accurate.
- Adjusted pushback duration estimates based on live data analysis.

13.4 Fixes

- Fixed issue causing keyboard entries to not be accepted at times.
- Fixed issue causing multiple copies of same flight to appear on timelines.
- Fixed Client menu selections when multiple flights are selected.
- Fixed Client menu after APREQ time is requested to not show Exclude option.
- Made system more robust to TRACON track data outages.
- Fixed multiple issues with flight matching involving ASDE-X and Mode S data.
- Fixed aircraft class for some aircraft types.
- Fixed EFTT algorithm to account for buffer in delivery to runway.

13.5 Operations

- No change to installation or start-up procedures.

14 Release 3.0.6.1 / 3.0.6.2

14.1 Overview

This document describes the changes to the ATD-2 software baseline for versions 3.0.6.1 and 3.0.6.2. Version 3.0.6.2 was delivered on 24 October 2017.

14.2 New Features

- No new features added.

14.3 Improvements

- Added configuration files for operational TBFM connection.
- Modified scheduler logic to not be impacted by GA flights that have not pushed back.
- Adjusted TMAT advisories to account for predicted runway queue.
- Increased window over which gate conflicts will be detected.

14.4 Fixes

- Fixed issues with Client search and mouse focus.

14.5 Operations

- No change to installation or start-up procedures.

15 Release 3.0.6.3

15.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.6.3. Version 3.0.6.3 was delivered on 14 November 2017.

15.2 New Features

- Added date/time information to target creation.
- Added Dashboard monitoring of operational IDAC connection.

15.3 Improvements

- Improved surface scheduler behavior in presence of uncertain GA flights.
- Updated mapping from runway to departure fix.

15.4 Fixes

- Addressed a variety of flight matching and input feed processing issues as reported in Field Reports.
- Fixed bug preventing removal of a user-created strip.
- Fixed bug in Client flight search.
- Fixed bug in logic that caused some TMATs to not be displayed.

15.5 Operations

- No change to installation or start-up procedures

16 Release 3.0.7 / 3.0.7.1

16.1 Overview

This document describes the changes to the ATD-2 software baseline for versions 3.0.7.0 and 3.0.7.1. Version 3.0.7.1 was delivered on 28 November 2017.

16.2 New Features

- Added parsing of fixed-based MITs and re-routes.
- Changed AAL's EOBT feed to the AAL operational one.
- Simplified and tightened spacing on RTC to declutter it.

- Allow user to snap a flight to a gate even if it has tracks.
- Adjust precedence rules in scheduler, and decreased instability due to Ready flights.
- Added indication of converging operations for South Flow.

16.3 Improvements

- Enhance OIS parsing to detect removals before end time. Make OIS handling more robust.
- Improve departure fix decision tree for CLT.
- Added Gate Hold plot to Dashboard.

16.4 Fixes

- Fixed various RTC and Client user interface issues.
- Improved DFW surface adaptation.
- Improved OIS parsing when APREQ end time is missing.
- Fixed advisory value after undo of pushback.
- Fixed bugs in Dashboard threshold and color coding.

16.5 Operations

- No change to installation or start-up procedures.

17 Release 3.0.7.2

17.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.7.2. Version 3.0.7.2 was delivered on 05 December 2017.

17.2 New Features

- Added departure gate to flight strip at any zoom level.
- Show converging operations for every South configuration.
- Show flights that have pushed back even if surveillance is old.

17.3 Improvements

- Don't remove Hold once flight gets APREQ time.
- Improved flight matching mediation rules.
- Added reversion to TAIS feed if TRACON feed fails.
- Adjusted taxi time buffers to reduce gate hold.

17.4 Fixes

- Fixed bug associated with suspended flights.
- Fixed bug in preference file handling.
- Enabled manual scheduling even if system doesn't have a TMA id.

17.5 Operations

- No change to installation or start-up procedures

18 Release 3.0.8 / 3.0.8.1 / 3.0.8.2

18.1 Overview

This document describes the changes to the ATD-2 software baseline for versions 3.0.8, 3.0.8.1, and 3.0.8.2. Version 3.0.8.1 was released on 26 December 2017 and version 3.0.8.2 was released on 05 January 2018.

18.2 Dashboard:

- The runway and gate views in the Predicted Excess Queue Times Monitor and Predicted Excess Queue Times By Rwy Direction Monitor now show the aircraft callsigns associated with each data point on the plots

18.3 Data Quality:

- Improvements to EDCT times
- Improvements to gate assignments
- Improvements to flight matching
- Improvements to flight status (diverted, etc)
- Position-derived runways override the STARS runway

18.4 Scheduler Changes

- A new display metering algorithm requirements to turn on metering
 - Where N and M are adaptation editable values (current values are N=1, M=2, O=5)
 - N taxi flights must be experiencing the target queue size AND
 - M gate departures must exceed the upper threshold value within O minutes
 - Uncertain, controlled, and exempt flight delays are ignored for calculations
- To turn off metering (Same as original algorithm)
 - All flights at gate within O minutes should be have delay values less than the lower threshold.

18.5 RTC and Client:

- If an airport configuration is added as a future configuration change and then removed before it takes effect, the notification will now show with "Cancelled" in the details and have its end time updated to be the time of the cancellation.
- For an APREQ, MIT, or fix closure removed from OIS page before its expiration time and is identified as removed in STBO, the corresponding notification in the notification window in STBO and RTC will be highlighted in blue and CXL will be appended to notification in the banner details. The same behavior will happen for ground stops that have a PURGED message received from TFM before the expiration time.
- Red color used on the map to signify runway closures has been darkened.

18.6 Client:

- If an RTC controller drags a flight that has been put into the "reposition" state, the flight's position will be updated on the Client map if that target is displayed.
- When the user manually enters an APREQ release time, the time must be within 2 hours of "now".
- Departure Fix Table: fix fields are colored red when the fix is closed
- Departure Fix Table: MIT fields can be colored based on user-supplied threshold
- Flights Table: If a flight is suspended by automation, the Flight Status field will show Suspended. If a flight is suspended by a controller, the Flight Status field will show the same state the flight previously had but now the Sched Suspended field will show "Suspended".

18.7 RTC:

- Corrected behavior to allow a pushback to be undone
- When the strip is still at the gate, i.e. not pushed back yet: if the controller drags the strip, the location change will stay local to his/her display. This is in response to readability issues where the controller was moving strips at the gate for readability and so the strips were jiggling around on the other displays which was not intended or desired.
- In 3.0.7, the RTC count boxes got switched so brown was on the left and blue was on the right. This has been fixed to put blue back on the left and brown on the right.
- Improve "bloom" when the map is zoomed out
- If the user executes a "Search" for a flight and the flight exists in the system but currently is not displayed, the former behavior was that the Search field stayed white indicating a flight was found but nothing happened since the strip is not displayed. The new behavior is to either a) force display of the strip or b) tell the user why the strip can't be displayed. Note: There are still some flights for which the user still gets no response. We haven't been able to track down all these cases yet. So tell the users that if they search but nothing happens, please file a feedback report so we can look into it further.
- Reduction of false detection of flights entering the hardstand, caused by jumpy tracks near the edge of the hardstand. I.e., the user should see fewer yellow hardstand boxes falsely assigned when the flight isn't actually in the hardstand.
- Currently, if a flight is suspended by automation, it is not displayed on the RTC and controllers had no way to unsuspend it. New behavior: as stated in the Search bullet above, if the controller executes a Search for that flight, it should display. Additional new behavior: If the controller opens the Flight Menu, Suspend will be selected. The user can click Normal to take the flight out of suspended state. Note that once the controller clicks Normal, the flight will always be displayed; if the controller decides he doesn't want to see it any more, he will have to Suspend it again and then select Remove Icon.
- Up until now, for a flight NOT suspended by automation, if the controller clicked Suspend in the Flight Menu, the flight would be set into the same suspended state as if it was suspended by automation. New behavior: for a flight NOT suspended by automation, if the user clicks Suspend, the flight will retain the same state information as it had before but now it will be removed from the runway schedule. (So note that there is only one Suspend checkbox on the Flight Menu, but its behavior is different based on whether the original flight was suspended by automation vs suspended manually by a controller.) Also, the flight will be displayed in gray. The Suspended case is intended to be used when there is a short-term delay of an uncertain duration where the flight will need to give up its current slot on the timeline but is expected to continue eventually. An example is a fuel spill. Once the flight is ready to continue, the controller should go back into the Flight Menu and click Normal.
- Arrivals can no longer be suspended.
- In the Flight Menu, the Return To Gate case has been moved up in to the FLIGHT STATUS block. The Return to Gate case is intended to be used when the flight has left the gate but had some sort of mechanical problem that requires a return to the gate. The Return To Gate clears Actual OUT and other events; It is NOT supposed to be used to correct erroneous pushbacks. Return To Gate was removed from the right mouse menu so that users aren't selecting it by mistake when they really want to use Move To Gate.
- Reposition handling was improved. The Reposition case is intended to be used when the flight should be relocated away from its gate, such as parking a flight in the hardstand to get it out of the way or moving a flight to maintenance.
- Move To Gate handling was improved. The Move To Gate case is intended to be used when tracks cause the flight to display away from the gate before it has pushed back (departures) or when it has already pulled in to the gate (arrivals). For departures in particular, the Move To Gate sets a flight back into the Scheduled state. So if STBO marks a flight as pushed due to bad tracks, the controller can use this to undo the pushback when the right mouse menu of "Undo Pushback" doesn't work. Once the controller has selected Move To Gate for a flight, "under the hood" the tracks are now ignored and the flight is forced to display at the gate. That means the controller needs to issue the Pushback or Proceed To Spot command to clear the forced display at the gate.
- Corrected display of flights at the tips of B, C, and E concourses that showed flights as pushed when they weren't.

18.8 Operations

- No change to installation or start-up procedures

19 Release 3.0.8.3

19.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.8.3. Version 3.0.8.3 was delivered on 12 January 2018.

19.2 New Features

- Updates to metering display properties were made to improve when the metering advisories are turned on.

19.3 Improvements

- No improvement changes in the software

19.4 Fixes

- Flights subject to ground stop, MIT, and departure fix closures should not be included in the metering display algorithm.

19.5 Operations

- No change to installation or start-up procedures

20 Release 3.0.9.1

20.1 Overview

This document describes the changes to the ATD-2 software baseline for version 3.0.9 and 3.0.9.1. Version 3.0.9 was not deployed; version 3.0.9.1 was deployed on 25 January 2018.

20.2 New Features

- Adaptation updates for surface traffic re-routes due to construction in West ramp.

20.3 Improvements

- No improvement changes in the software

20.4 Fixes

- Corrected a bug that was causing ground stops from TFM to be re-added after the user removed them.

20.5 Operations

- No change to installation or start-up procedures