Business Continuity Manual

Business Continuity Plan: E2

Flight Information Display System

		Signature	Revision	Effective Date
Updated By	AGM, Solutions Planning & Operation Readiness, ABD	Rita Lee	32	Jun 2023
	Assistant General Manager TOD	Joanne Ma		
Reviewed By	Assistant General Manager BCP, SSBC	Emily Chu		
Approved By	General Manager SSBC	David Jea		

Blank page

BCP – E2. Flight Information Display System

Table of Content

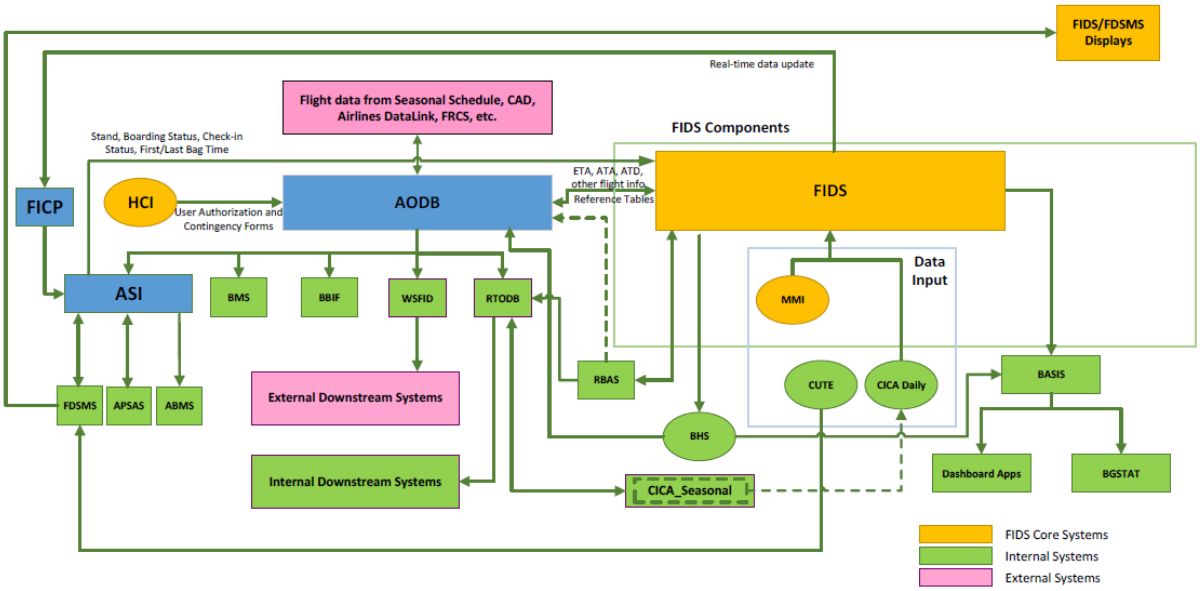
1. ABBREVIATIONS

AA	Airport Authority
ACC	Apron Control Centre
A-CDM	Airport Collaborative Decision Making
AD	Airfield Department
ADM	Airport Duty Manager
AOC	Airline Operators Committee
AODB	Airport Operational Database
APV	Apron Passenger Vehicle
ASI	Airport Services Integration Platform
ATA/ATD	Actual Time of Arrival/ Departure
BASIS	Baggage Analysis and Statistics Information System
BBIF	Browser-Based Information Network Form
ABD	APM and Baggage Department
BGSTAT	Baggage Data Statistics Repository
BHS	Baggage Handling System
BMS	Baggage Management System
CAD	Civil Aviation Department
CICA	Check-in Counter Allocation System
CIO	Chief Information Officer
CUTE	Common Use Terminal Equipment
DRSAS	Disaster Recovery System – Airport Systems
ETA/ ETD	Estimated Time of Arrival/ Departure
FICP	Flight Information Customized Program
FIDS	Flight Information Display System
FDSMS	Flight Display Management System
HCI	Human Computer Interface
HKIA	Hong Kong International Airport
IAC	Integrated Airport Centre
ITD	Information Technology Department
ITP	Information Technology Procedure
IVRS	Interactive Voice Response System
LD	Landside Department
MMI	Man Machine Interface
MTRC	MTR Corporation
PA	Public Address
PBS	Positive Boarding System
PFIDS	Personal FIDS
POC	Port-of-call

RBAS	Reclaim Belt Allocation System
RTODB	Real-Time Operational Database
SAS	Stand Allocation System
IDI	Innovation & Data Insights
SOCC	System Operations Control Centre
STA/STD	Scheduled Time of Arrival/ Departure
TOD	Terminal Operations Department
TLDM	Terminal & Landside Duty Manager
TLPM	Terminal & Landside Procedures Manual
TMS	Terminal Management System
TRC	Telephone Response Centre
WADIDB	Web Application Deployment Infrastructure Database
WIDS	Web-Based Information Display System
WSFID	Web Service for Flight Information Distribution

2. FLIGHT INFORMATION DISPLAY SYSTEM (FIDS)

2.1. Normal FIDS Systems Data Flow Diagram



2.2. Purpose

The purpose of this document is to record the contingency arrangement for ensuring continuation of flight data update and dissemination to the **direct** interfaces of FIDS in a timely manner in the event of the failure of the FIDS system under different scenarios, including:

a. FIDS host server failure
b. AODB failure
c. ASI failure
d. RBAS failure
e. CICA failure
f. Airport Disaster

3. FIDS HOST SERVER FAILURE

3.1. Functionalities of FIDS Host Server

FIDS host server is the most important component in FIDS system. It receives and disseminates the latest flight information and status update to passengers and airport operators via other AA systems or components. FIDS system cannot function at all when FIDS host server fails, and therefore contingency measures are required in supporting the continuous provision of flight information to FIDS displays and downstream systems to minimize the disruption to airport operations.

3.2. Consequences

a. Flight information on FIDS/FDSMS displays is outdated
b. AD FIDS Duty Team cannot update flight information via MMI.
c. Check-in counter/boarding gate status updated on FDSMS cannot be sent to FIDS systems.
d. Flight information retrieved from IVRS/PA is out-dated.
e. Flight information in AODB downstream systems (such as BMS) is outdated.
f. Flight information retrieved from RTODB or WSFID downstream systems (such as My Flight, PFIDS, IVRS/PA, eDirectory) is out-dated.

3.3. Contingency Measures

When FIDS host server is out of service for over 30 minutes, AODB HCI will be used to enter flight information into AODB for distribution to its downstream systems. RBAS update will be switched over to AODB for flight information retrieval and reclaim allocation distribution for downstream systems.

No contingency arrangement is available for BASIS as its downstream systems are dashboards and for statistics systems only.

3.4. Role and Responsibilities

a. <u>Airport Duty Manager (ADM)</u>

   i. ADM is the person to monitor the situation closely on impact to airport operation and inform related parties in preparation of other airport operation procedures to reduce impact to passengers and airport operations.

ii. Upon activation, ADM shall inform AD, ABD, IDI, TOD, LD and notify SOCC to implement this procedure accordingly.

iii. ADM shall inform management and related parties in preparation of other airport operation procedures if situation is worse.

b. Airfield Department (AD)

i. AD FIDS Duty Team is responsible for updating flight information using FIDS contingency system i.e. HCI Flight Contingency Form to continue providing updated flight information to passengers and airport operators. Please refer to User Guide – HCI Flight Contingency Form.

ii. AD FIDS Duty Team shall call ABD Duty Team for departure flight updates including flight cancellation, adhoc flight and ETD.

c. Terminal Operations Department /Landside Department (TOD / LD)

i. TLDM or his/her delegate shall notify AOC of the procedure activation and request airlines/handling agents to provide update flight information via fax/email.

ii. TOD Duty Team shall also check if the following systems have updated flight information input via HCI Flight Contingency Form.
- FIDS/FDSMS Displays
- HKIA website
- IVRS
- PA
- PFIDS
- Mobile Apps including My Flight
- Dashboard Apps

d. Systems Operations Control Centre (SOCC)

Upon notification by ADM, SOCC shall activate the necessary contingency procedures including HCI Flight Contingency Form and RBAS O&M Manual Contingency Plan when FIDS host server is out of service for over 30 minutes. SOCC shall deactivate the contingency procedures upon the resumption of FIDS host server.

e. Airlines or Handling Agents

Airlines or handling agents shall inform AD FIDS Duty Team of updated flight schedule via fax/call/email.

f. Airline Operators Committee (AOC)

AOC shall keep all AOC members informed of activation and deactivation of contingency procedure.

3.5. Procedures Guidelines

a. SOCC shall inform ADM, TLDM or his/her delegate and AD FIDS Duty Team upon FIDS host server failure. In case of suspected cyber-attack, SOCC shall also inform Risk & Security section of ITD for further investigation.

b. SOCC shall provide estimated resumption time every 30 minutes to ADM, TLDM or his/her delegate and AD FIDS Duty Team.

c. If FIDS host server is out of service for over 30 minutes, ADM shall inform all parties about the activation of FIDS contingency procedures immediately.

d. SOCC shall implement RBAS contingency procedure immediately. Please refer to RBAS Operation & Maintenance Manual Contingency Plan (Section 4.5 Case 3).

e. AD FIDS Duty Team shall input all flight updates through HCI Flight Contingency Form. Please refer to User Guide – HCI Flight Contingency Form.

f. Upon system resumption, SOCC shall inform all parties and deactivate the procedures.

4. FDSMS SERVER FAILURE / NETWORK EQUIPMENT FAILURE

4.1 Functionalities of FDSMS Server

The FDSMS Server is to drive the display of flight information for all FIDS display device units at HKIA. Under this scenario, communication between AODB and FIDS remains normal. However, the latest flight information cannot be reflected on the FIDS displays at those locations caused by the failure of the FDSMS Server.

4.2 Consequences

Updated flight information cannot be delivered to passengers in-terminals. The last updated flight information will remain on the displays for 1 hour on all display devices.

4.3 Contingency Measures

When FDSMS server is out of service for over 30 minutes, WIDS will be used to display flight information on FIDS displays that have been affected by the FIDS display screen.

4.4. Roles & Responsibilities

a. Airport Duty Manager (ADM)

ADM shall assess the failure impact to airport operations and inform related parties in preparation of other airport operation procedures to reduce impact to passengers and airport operations.

b. Terminal Operations Department / Landside Department (TOD / LD)

i. TOD and LD Duty Team shall patrol the affected area and verify if the WIDS contingency display is in place.

ii. TLDM or his/her delegate as appropriate shall determine if Duty Officers shall be deployed to the affected area to assist passengers.

c. Systems Operations Control Centre (SOCC)

SOCC shall activate the contingency procedures i.e. WIDS contingency if failure is over 30 minutes and deactivate procedures upon resumption. Please refer to ITP-085 FIDS Contingency Procedure.

4.5. Procedure Guidelines

a. SOCC shall inform ADM, TLDM or his/her delegate as appropriate on the service impact. In case of suspected cyber-attack, SOCC shall also inform Risk & Security section of ITD for further investigation.

b. SOCC shall provide estimated resumption time every 30 minutes to ADM, TLDM or his/her delegate as appropriate.

c. SOCC to activate WIDS contingency to those affected FIDS displays which are out of service for over 30 minutes.

d. If FDSMS Server failure has impact to check-in counters or transfer counters, SOCC shall publish airlines' corporate logo onto FIDS displays at check-in counters and transfer counters according to the latest counter booking. Please refer to ITP-085 FIDS Contingency Procedure.

e. SOCC shall deactivate the procedure if FDSMS server resumes normal.

f. TOD and LD Duty Team shall check if all FIDS displays resume normal.

5. AODB FAILURE

5.1. Functionalities of AODB

There are two major functions for AODB in supporting FIDS operation:

a. Update FIDS system with the following data:
   - Seasonal schedule
   - Active auto flight data update (Registration mark, aircraft subtype, POC, Origin/Destination, total passenger no.) from airlines/handling agents
   - Active flight data update from CAD (e.g. ETA, ATA, ATD) and airlines/handling agents (from data link) via HCI Flight Contingency Form user authorization function.

b. Disseminating up-to-date flight data to downstream systems/users.

5.2. Consequences

a. No real time update of flight information obtained from CAD or via data links.

b. AODB downstream systems are affected without update information: BMS, WIDS, HKIA website, IVRS, PA, BBIF, WSFID, Mobile Apps, PFIDS, PBS, e-Directory and Dashboard Apps. TRC in full manual mode.

5.3. Contingency Measures

When AODB is out of service for over 15 minutes, AD FIDS Duty Team shall manually update flight information received from CAD and airlines/handling agents. Downstream users will receive flight update via fax/email.

5.4. Roles & Responsibilities

a. Airport Duty Manager (ADM)

ADM shall assess the failure impact to airport operations and inform related parties in preparation of other airport operation procedures to reduce impact to passengers and airport operations.

b. Airfield Department (AD)

AD FIDS Duty Team is responsible for collecting necessary flight information from A-CDM and, manually update the arrival/departure time in FIDS MMI.

c. Systems Operations Control Centre (SOCC)

SOCC shall activate the contingency procedures if AODB is out of service for over 15 minutes and deactivate procedures upon AODB resumption.

d. Airlines or Handling Agents

Airlines or handling agents shall provide AD FIDS Duty Team of latest flight schedule via fax/email.

e. Airline Operators Committee (AOC)

AOC shall keep all AOC members informed of activation and deactivation of contingency procedure.

5.5. Procedure Guidelines

a. SOCC shall inform ADM, TLDM or his/her delegate and AD FIDS Duty Team of system failure and activate necessary contingency measures if AODB is out of service for 15 minutes. In case of suspected cyber-attack, SOCC shall also inform Risk & Security section of ITD for further investigation.

b. AD FIDS Duty Team shall gather ETA/ATA/ATD from A-CDM and from airlines/handling agents via fax/email and input the data directly into FIDS MMI.

c. SOCC shall de-activate the flight information page and post the maintenance page on HKIA website, mobile apps and PFIDS.

d. TLDM or his/her delegate shall request SOCC to forward flight information enquiry and public address request to manual response mode in order to be manned by TOD Duty Team.

e. TOD Duty Team shall check and confirm the followings:

- IVRS – Flight information enquiry has been diverted to TOD Duty Team for manual handling.
- PA – Public address request has been diverted to TOD Duty Team for manual handling.
- HKIA website – the maintenance page in has been posted.

- Mobile Apps – the maintenance page in has been posted.
- PFIDS – the maintenance page in has been posted

f. SOCC shall notify downstream systems/users including BBIF, WSFID and WIDS subscribers of downstream systems status and provide them with the flight information via fax/email by running data from FIDS systems.

g. TOD Duty Team shall check if IVRS, PA, HKIA website, Mobile Apps, PFIDS, PBS and e-Directory and Dashboard Apps have resumed normal when contingency procedure is deactivated.

6. ASI Failure

6.1. Functionalities of ASI

ASI acts as a middleware for information exchange between different application systems. ASI connects FIDS to the following systems:

- From FDSMS: gate and check-in status
- From APSAS: stand/gate assignment and chocks time
- From ABMS: first bag and last bag time
- To FDSMS, APSAS, ABMS: real-time flight update

6.2. Consequences

a. No real-time update such as ETA, ATA, ATD to FDSMS, APSAS and ABMS.

b. Gate/check-in status, stand/gate assignment and arrival baggage delivery status will be outdated on FIDS/FDSMS displays and AODB's downstream systems such as BMS, WIDS, HKIA website, IVRS, PA, BBIF, WSFID, Mobile Apps, PFIDS, PBS and e-Directory.

6.3. Contingency Measures

When ASI is out of service for over 60 minutes, SOCC shall execute the ITP-1566 ASI Contingency Procedure.

6.4. Roles & Responsibilities

a. Airport Duty Manager (ADM)

ADM shall assess the failure impact to airport operations and inform related parties in preparation of other airport operation procedures to reduce impact to passengers and airport operations.

b. Airfield Department (AD)

AD FIDS Duty Team is responsible for updating check-in counter and boarding status in MMI upon requests from airlines/handling agents.

c. Terminal Operations Department (TOD)

i. TOD Duty Team shall patrol and verify if flight information on FIDS displays are in order; or otherwise call SOCC for abnormal issues.

ii. TLDM or his/her delegate as appropriate shall deploy Duty Officers to affected areas to assist passengers if necessary.

d. Systems Operations Control Centre (SOCC)

SOCC shall activate the ASI contingency procedures if ASI is out of service for over 60 minutes and deactivate procedures upon ASI resumption.

e. Airlines or Handling Agents

Airlines or handling agents shall keep AD FIDS Duty Team informed of check-in counter and boarding status via call.

f. Airline Operators Committee (AOC)

AOC shall keep all AOC members informed of activation and deactivation of contingency procedure.

6.5. Procedure Guidelines

a. SOCC shall inform ADM, TLDM or his/her delegate and AD FIDS Duty Team of system failure and activate necessary contingency measures if ASI is out of service for 60 minutes. In case of suspected cyber-attack, SOCC shall also inform Risk & Security section of ITD for further investigation.

b. TLDM or his/her delegate shall inform AOC of the activation of contingency procedure.

c. Airlines/handling agents shall keep AD FIDS Duty Team informed of check-in counter and boarding status of departure flights via call.

d. AD FIDS Duty Team shall update check-in counter and boarding status via MMI upon receiving calls from airlines/handling agents.

7. RBAS FAILURE

7.1. Functionalities of RBAS

RBAS is responsible for reclaim belt allocation. It gets arrival flight information from FIDS and sends allocated reclaim belt details to FIDS for further distribution to AODB then to other downstream systems such as FDSMS and WSFID.

7.2. Consequences

a. FDSMS and WSFID subscribers including WIDS at baggage enquiry desks and Mobile Apps will be affected.

b. Users cannot get updated reclaim assignment from FIDS/FDSMS displays, HKIA website and Mobile Apps.

7.3. Contingency Measures

When RBAS is out of service, ABD Duty Team shall update reclaim belt assignment on FIDS MMI immediately.

7.4. Roles and Responsibilities

a. <u>APM and Baggage Department (ABD)</u>

ABD Duty Team shall update reclaim belt assignment on FIDS MMI.

b. <u>Terminal Operations Department (TOD)</u>

i. TOD Duty Team shall patrol and verify if flight information on FIDS displays are in order; or otherwise call SOCC for abnormal issues.

7.5. Procedure Guidelines

a. SOCC shall inform ADM, TLDM or his/her delegate of system failure if RBAS is out of service. In case of suspected cyber-attack, SOCC shall also inform Risk & Security section of ITD for further investigation.

b. ABD Duty Team shall update reclaim belt assignment via FIDS MMI.

8. CICA FAILURE

8.1. Functionalities of CICA

Check-in Counter Allocation System (CICA) is an online booking system for counter allocation. The web-based interface of CICA allows airlines/handling agents and AA users to make online counter requests and amendments, view the most updated counter allocation status in text and graphic formats and generate tailor-made booking reports. The updated and confirmed check-in/transfer counter information via CICA will then be updated to FIDS displays.

For the detailed handling of CICA failure, please refer to TLPM/066 Contingency Procedure for Check-in Counter Allocation System (CICA).

9. AIRPORT DISASTER

9.1. Background

Airport disaster recovery operations procedure shall be implemented when physical locations where FIDS/AODB core systems are deployed get severely affected by disaster resulting in unavailability of both FIDS and AODB.

9.2. Possible Symptoms

The symptoms of FIDS host server failure and AODB failure are observed.

9.3. Consequences

Subject to the airport disaster situation, all FIDS and AODB related functions may not be performed and airport operations would be severely affected.

9.4. Contingency Measures

When the possible symptoms of airport disaster are observed, SOCC shall immediately inform ADM and escalate to ITD management, subject to the decision of CIO, SOCC shall activate the backup FIDS/AODB systems at the disaster recovery site in order to maintain the FIDS/AODB functions as much as possible.

9.5. Roles & Responsibilities

a. Airport Duty Manager (ADM)

ADM shall inform management and related parties in preparation of other airport operation procedures to reduce impact to passengers and airport operations when disaster recovery procedure is activated.

b. Terminal Operations Department /Landside Department (TOD / LD)

TLDM or his/her delegate as appropriate shall deploy Duty Officers to patrol affected areas to assist passengers if necessary and follow the disaster recovery operations procedure for necessary action.

c. Airfield Department (AD)

AD FIDS Duty Team shall responsible for the flight updating and follow the disaster recovery operations procedure as appropriate.

d. Information Technology Department (ITD)

ITD CIO is the person to activate/de-activate disaster recovery operations procedure and provides guidelines to related parties for action if appropriate.

e. Systems Operations Control Centre (SOCC)

SOCC shall provide technical support to reduce the system failure impact to airport operations.

9.6. Procedure Guidelines

a. SOCC shall inform ADM, AD FIDS Duty Team, TLDM or his/her delegate of FIDS and AODB systems failure and escalate to ITD management. In case of suspected cyber-attack, SOCC shall also inform Risk & Security section of ITD for further investigation.

b. Subject to the decision of ITD CIO after assessment on the failure impact to airport operations, SOCC would implement disaster recovery operations procedure. ADM shall inform management and related parties in preparation of other airport operation procedures to reduce impact to passengers and airport operations.

For details, please refer to the Disaster Recovery Operation and Maintenance Manual – DRSAS issued by ITD.

END OF BCP – E2