CIVIL AVIATION BUREAU of JAPAN

Collaborative Decision Making at JCAB ATMC

First Meeting of Asia/Pacific ATFM Steering Group
Tokyo, Japan, December 8 -10, 2010

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Why CDM?

principles to CDM:

- ✓ The facilitation of better information exchange among ATM stakeholders will lead to better decision making.
- ✓ Tools and Procedures need to be in place to enable among the various ATM stakeholders to more easily respond to changing conditions.

CDM at JCAB ATMC

Air Traffic Management Officers
- Air Traffic Flow Management
- Airspace Management
- Oceanic ATM

Air Traffic Information Specialists
- Spot Management and Planning

The Engineering Specialists for Air Traffic Management
- CNS Operation Coordination

Air Traffic Meteorological Center Specialist

The Air Self-Defense Force Liaison

Information Sharing → CDM

Other ATM Facilities

Area Control Centers

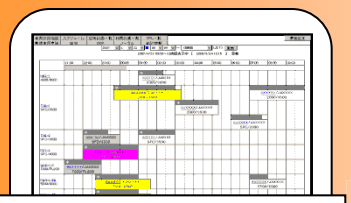
Terminal ATC Facilities

Aircraft Operators

Cooperation with Japan Self-Defense Force

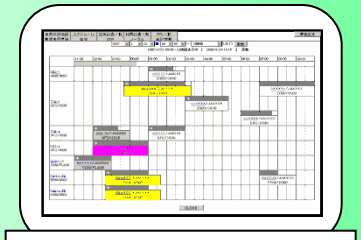
Civil Aviation Bureau of Japan

Notification, updating, and cancellation of airspace utilization



JSDF Liaison

Face-to-Face coordination

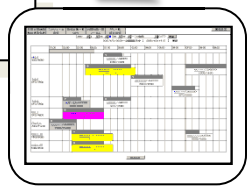


ATMC

- plans of airspace utilization
- status of airspace utilization
- coordination of CDRs

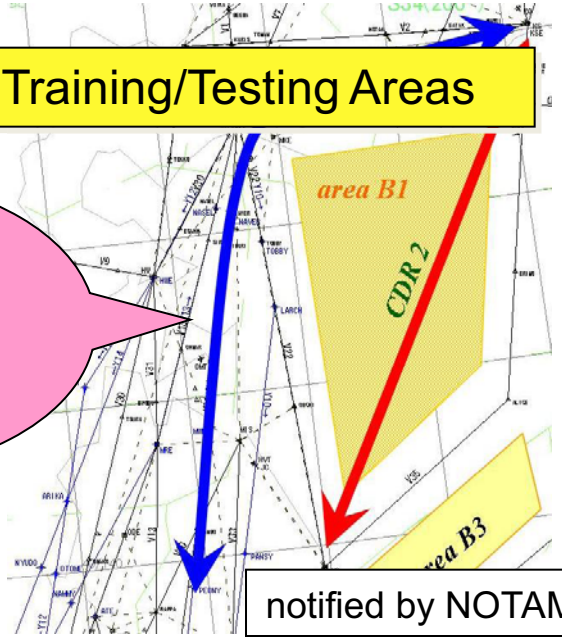
Coordination of the Self-Defense Force's High Altitude Training/Testing Areas

ACC, Airport



- The status of airspace utilization
- Efficient utilization of unused airspace

Having released area B1, we'll set CDR2.
Thanks man!

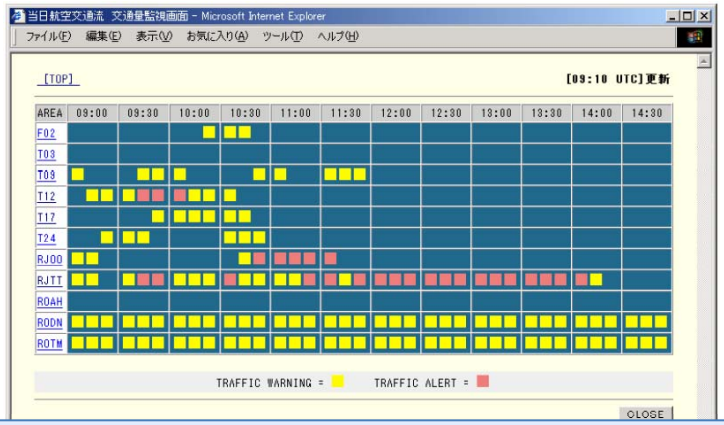


notified by NOTAM

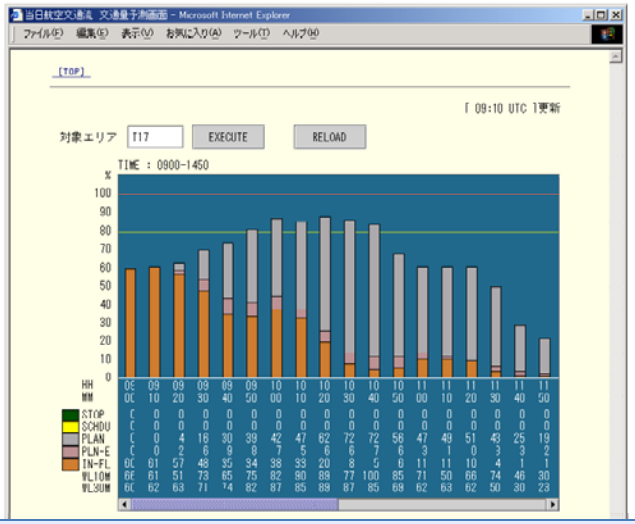
ATW (Air Traffic Management Workstation)

Civil Aviation Bureau of Japan

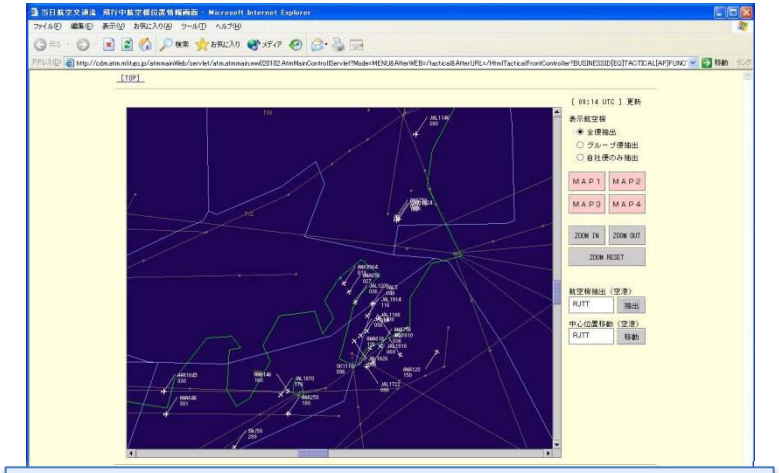
ATW is a graphical display related to the status of ATM operation in Fukuoka FIR, which provides CDM information, and makes CDM partners to assist their decision making on operations and their coordination on rerouting and arrival time frame.



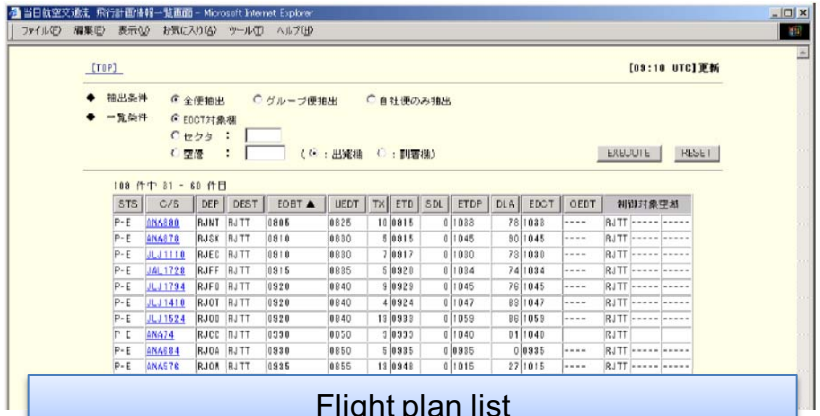
View format of saturation of sectors and airports



Traffic volume prediction chart of each sector



Traffic situation display

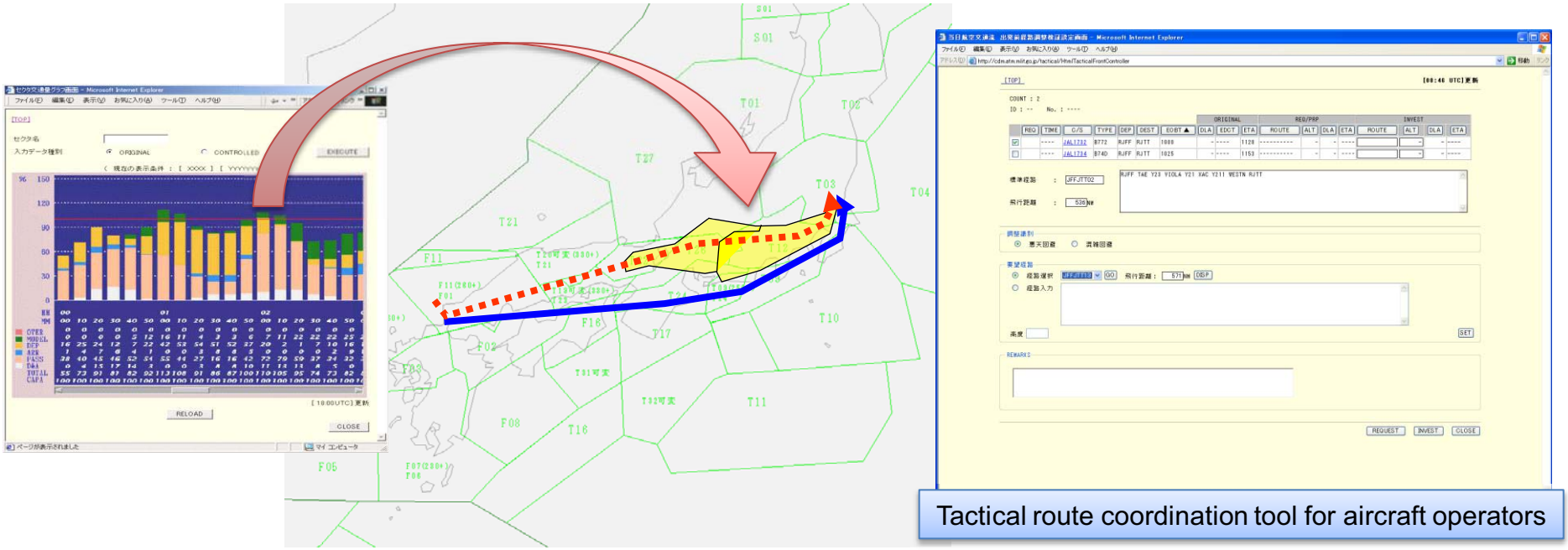


Flight plan list

Route Coordination

Civil Aviation Bureau of Japan

- ✓Strategic - a few months before operation
  - standard routes for major city pairs to ensure safe, orderly and efficient traffic flow
  - collaborative rerouting to specified flights for specified period to avoid expected saturation of sector
- ✓Pre-tactical - a day before operation
  - collaborative rerouting based on schedule to avoid expected saturation of sector
- ✓Tactical - day of operation
  - collaborative rerouting based on flight plan to avoid congested sector or adverse weather



Tactical route coordination tool for aircraft operators

Time Frame Coordination

Civil Aviation Bureau of Japan

Substitution

ETA
A-air01 --- 0800
B-air02 --- 0802
C-air03 --- 0804
B-air04 --- 0806
B-air05 --- 0808
C-air06 --- 0810
A-air07 --- 0812
C-air08 --- 0814

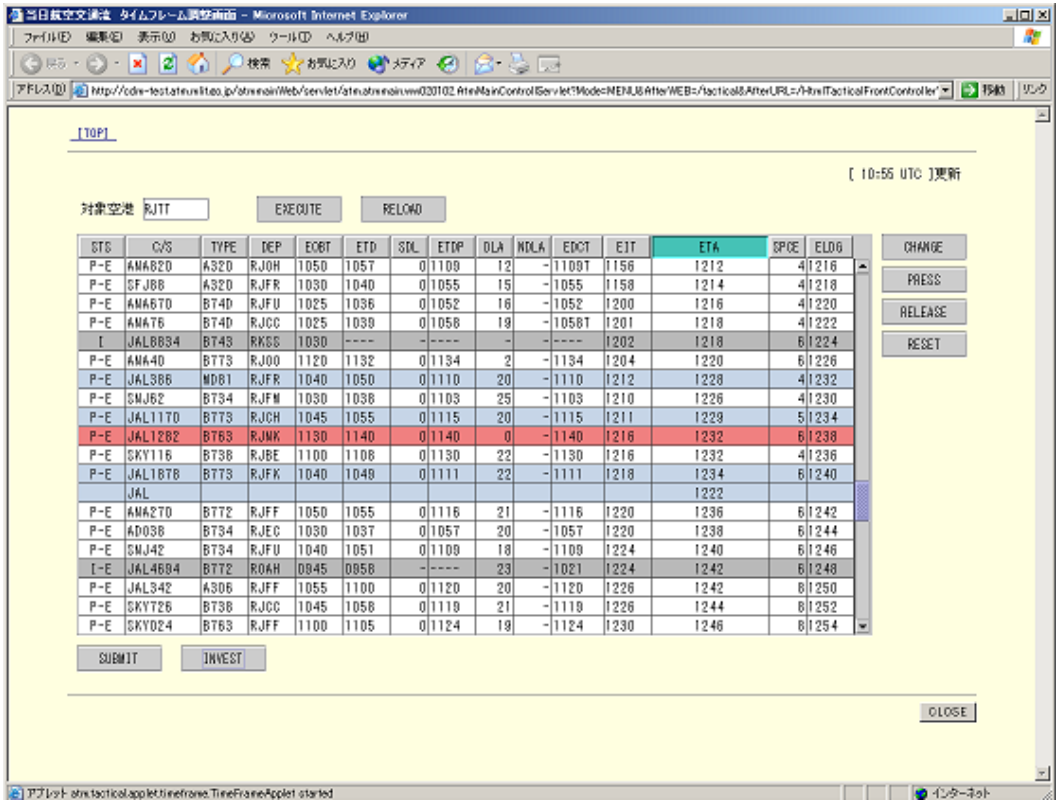
ETA
A-air01 --- 0800
B-air02 --- 0802
C-air06 --- 0804
B-air04 --- 0806
B-air05 --- 0808
C-air03 --- 0810
A-air07 --- 0812
C-air08 --- 0814

Compression

ETA
A-air01 --- 0800
B-air02 --- 0802
C-air03 --- 0804
B-air04 --- 0806
B-air05 --- 0808
C-air06 --- 0810
A-air07 --- 0812
C-air08 --- 0814

ETA
A-air01 --- CNL
B-air02 --- 0800
C-air03 --- 0802
B-air04 --- 0804
B-air05 --- 0806
C-air06 --- 0808
A-air07 --- 0810
C-air08 --- 0812

Arrival slot swapping at destination airport is available for aircraft operators through ATW under the condition of flow control for airport.

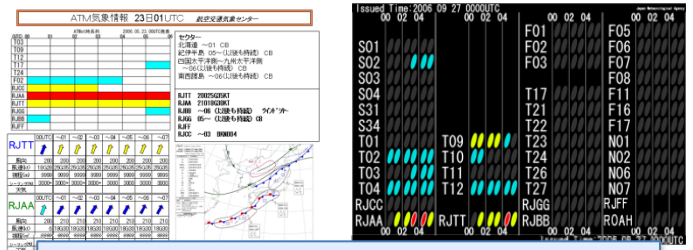


CDM conference

Civil Aviation Bureau of Japan

Web conference through ATW take place twice a day on regular basis or ad-hoc convocation with members involved to share information regarding ATM operation such as weather, ATC operation, flow control and flight operation, and to have a common situational awareness.

- Members
  ATMC, AOC (ANA, JAL),
  ATMetC, ATC facilities (TMC)
- twice a day, ad-hoc



example of sharing information
- weather products specialized for ATM

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***ATM OPERATIONS PLAN***

VALID 2009/0701/2345 THRU 0545
-CAPACITY(CAPA) & CONSTRAINTS-
 RJCC : 2100-0300  CAPA=04-06△  LOW VIS
 RJTT : 0200-0300  CAPA=10       RWY 34L/16R CLSD (0200-0245 CONST )
        0300-////  CAPA=14       FLTCK (ILS RWY22)
 S01  : ////-0200  CAPA=96▼     DEV (CB)
 T01  : 0130-////  CAPA=92-97    DEV (CB)

-INITIATIVE-
 RJCC : 0010-0150  5MINIT DEP FM RJTT
 RJTT : 2330-0140  EDCT
 T12  : 2300-0005  3MINIT DEP FM RJAA/RJTT
 G585 : 0130-UFN   8MINIT @ SAPRA RGDLS OF ALT WB FOR MONGOLIA, RUSSIA, EUROPE
 <POSSIBLE>
 RJAA : 0330-0500  15MIT, 250KT @ MELON, MAMAS
 RJTT : 0300-////  EDCT
 T24  : 0540-////  EDCT FOR ACFT DEST RJOO VIA OHDAI
-OTHER-
 RJAA : 2340-////   ﾀﾞｲﾊﾞｰﾄ対応体制
 NEXT CDM CONFERENCE 2009/0702/0620
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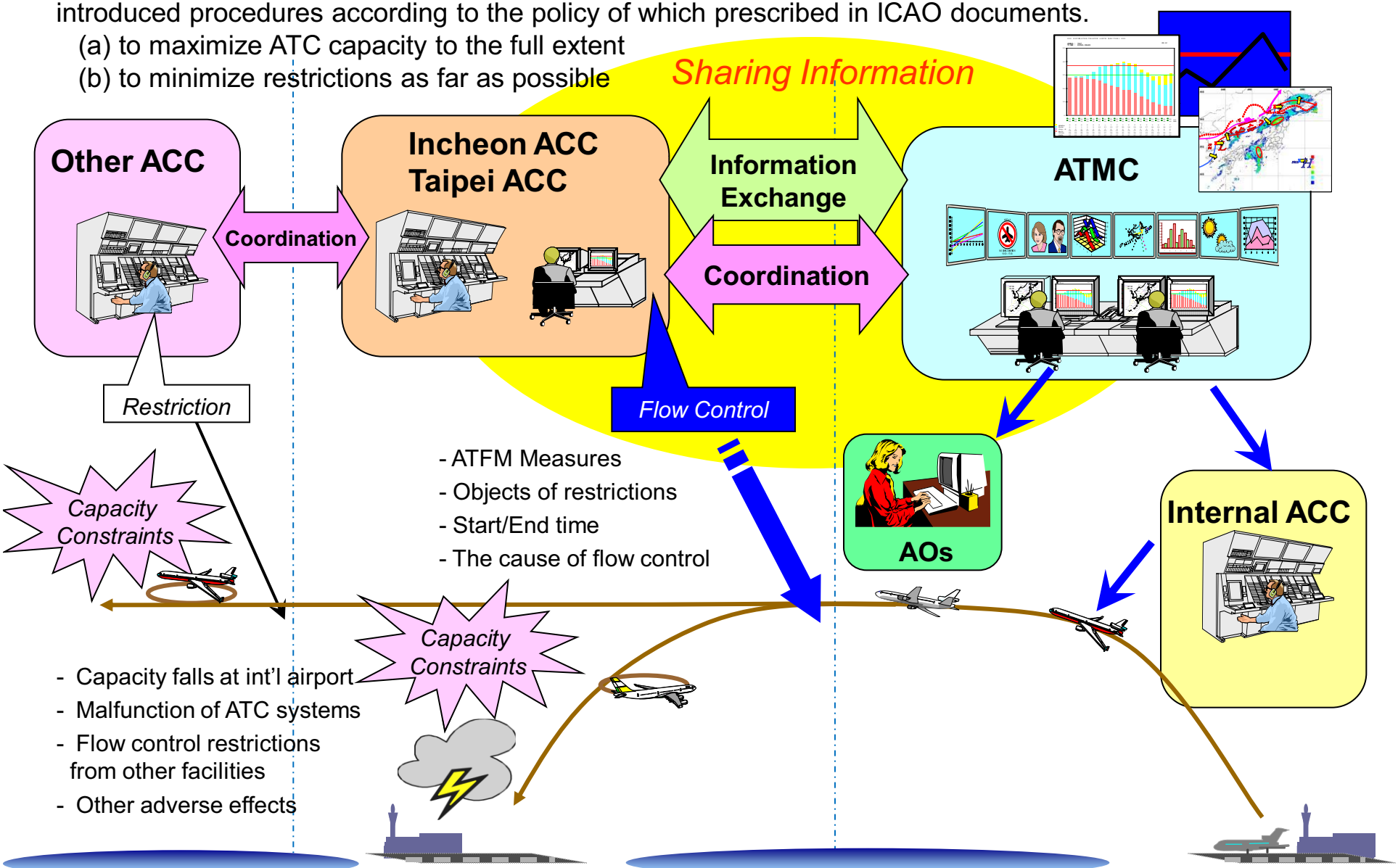
International ATFM

introduced procedures according to the policy of which prescribed in ICAO documents.

(a) to maximize ATC capacity to the full extent

(b) to minimize restrictions as far as possible



Information sharing

● When ATMC or ----- ACC recognizes an event which affects or might affect orderly traffic flow between the FIRs, the facility shall provide the other facility with the information, and both facilities shall keep sharing information while the traffic flow is affected by the event. Events of which information shall be shared mutually are as follows:

(1) Capacity falls at defined international airports, caused by:
  a. runway closure;
  b. severe weather; or
  c. other adverse effects;

(1) Malfunction of ATC systems, such as radar, flight data processing system (FDP), radar data processing system (RDP), or communication systems;

(3) Flow control restrictions at the responsible facility's request on aircraft destined for other FIR; or

(4) Other adverse effects on international traffic flow.

● Information is not necessarily provided with flow control coordination, but would be rather provided at the possible phase of flow control. Information provision should be made timely when the event is predicted and/or has begun/changed/dissolved.

Flow control application and coordination

● Both facilities are able to implement flow control in the events previously cited and besides when:
a. excessive airborne holdings arise or are predicted; or
b. necessary to ensure the safety of aircraft operations.

● Flow control is implemented by specifying some of the following restrictions at the FIR boundary to the aircraft destined for the affected airport(s) or airspace:
a. Minimum longitudinal interval by time or distance at the same altitude;
b. Minimum longitudinal interval by time or distance regardless of altitude; or
c. The number of aircraft which is acceptable in a specific time frame.

● Flow control coordination shall involve the following items:
a. The cause of flow control implementation;
b. Flow control restrictions;
c. Fixes or airways where restrictions are applied to;
d. Objects of restrictions (Objects of restrictions shall be only the aircraft which are destined for the affected airport or airspace.);
e. Start / end time (Effective time at paragraph (c)); and
f. Expected time of next coordination (if possible).

● Information provision or coordination should be periodically made while the flow control is applied.

● If urgent action is not necessary, flow control shall be requested at least sixty (60) minutes prior to the time when the restriction becomes effective to ensure that the accepting facility makes necessary coordination with other relative ATC facilities.

Air Traffic Flow Management

Promoting safe and orderly flow of air traffic

Strategic Planning
- Demand (schedule)
- Route Coordination

Pre-Tactical Planning
- Demand (schedule)
- Airspace Utilization
- Route Coordination

Tactical Coordination
- Capacity and Demand (FPL)
- Airspace Utilization
- Weather information
- Flow Control
- Re-routing

MONITOR

ANALYSE

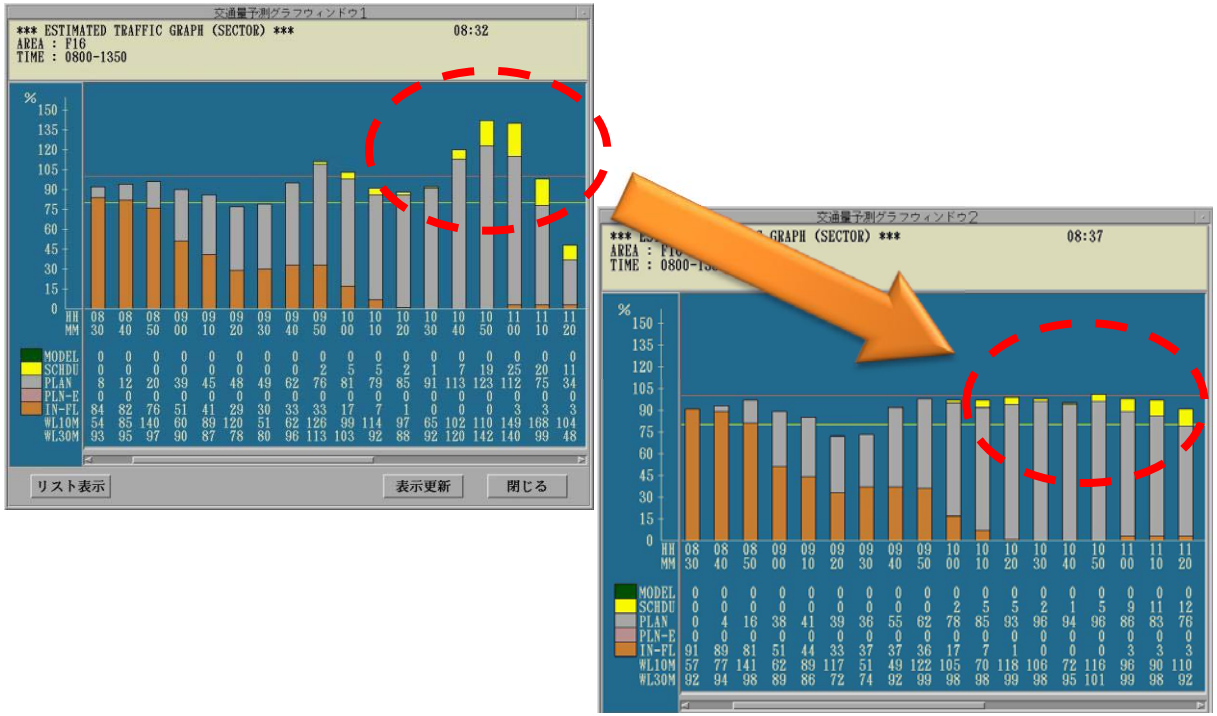
EVALUATE

IMPLEMENT

Ground Delay Program

- Expected Departure Clearance Time (EDCT) is calculated by ATM system, and distribute as a message to aircraft operators.

Calculation of available entering time into sector and/or available landing time of airports

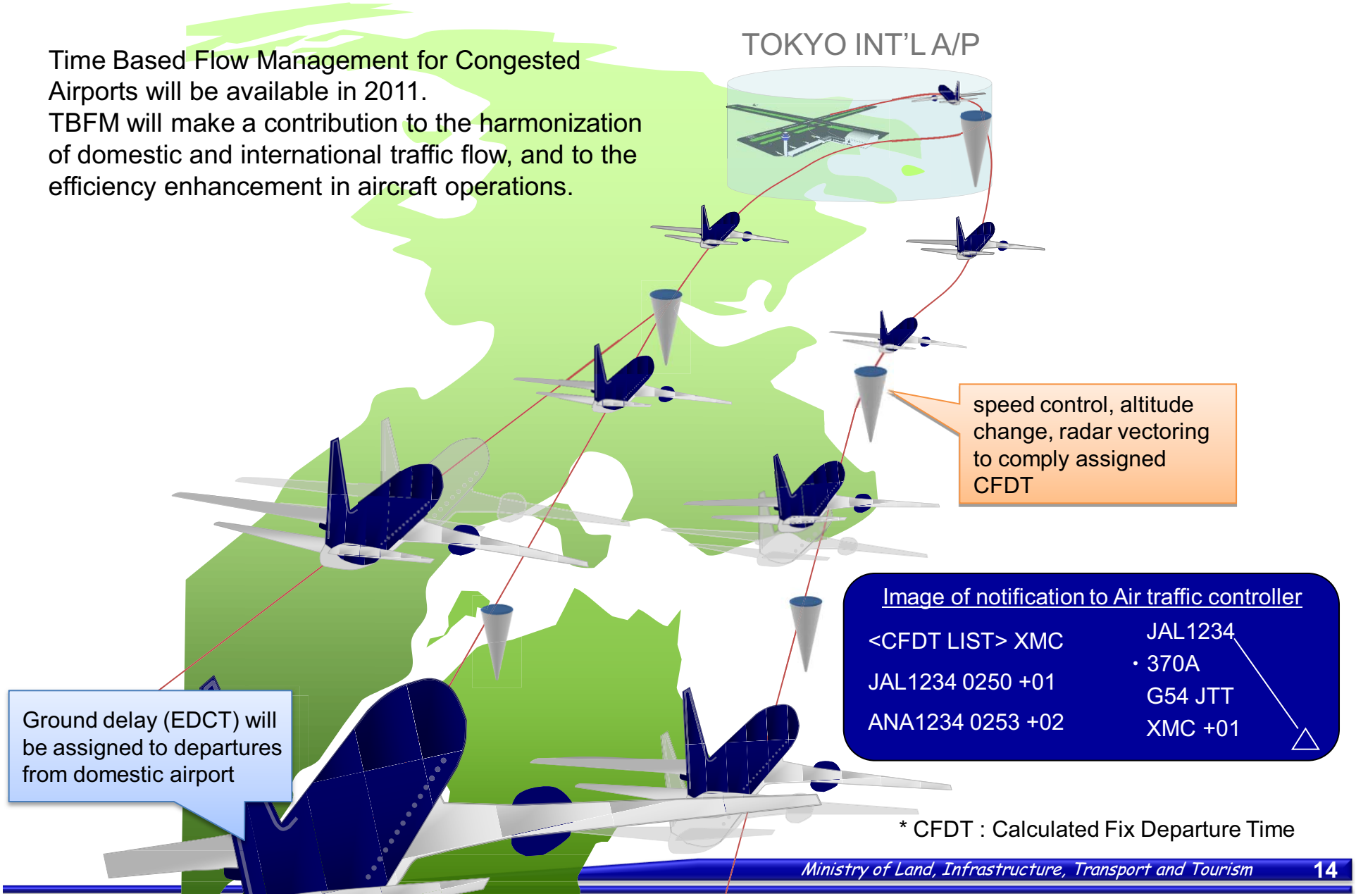


Allocation of necessary ground delay to aircraft

EDCT = EOBT + taxiing time + necessary ground delay

Near-Term Plan

Time Based Flow Management for Congested Airports will be available in 2011.
TBFM will make a contribution to the harmonization of domestic and international traffic flow, and to the efficiency enhancement in aircraft operations.



* CFDT : Calculated Fix Departure Time