International Civil Aviation Organization

The 10th Meeting of the FANS Implementation Team for South-East Asia (FIT-SEA/10) and the 17th Meeting of the South-East Asia ATS Coordination Group (SEACG/17)

Singapore, 24 − 27 May 2010

Agenda Item 2: Central Reporting Agency

Extracts from the Problem Reports, presented at IPACG FIT/19

(Presented by Japan)

SUMMARY

This Information Paper presents the information of the Problem Reports that were reported to the Central Reporting Agency-Japan covering the area of the Pacific Ocean in Fukuoka FIR.

1. BACKGROUND

1.1 The first Informal Pacific Coordinating Group FANS Interoperability Team (IPACG FIT) meeting (FIT/1, January 2000) was held in Hawaii, U.S.A. in conjunction with IPACG/14.

1.2 The IPACG FIT CRAs continue to process Problem Reports (PRs) received from operators and service provided in the North and Central Pacific. The IPACG FIT CRA consist of two complementary organizations (JCAB CRA and FAA CRA), each supporting their respective area.

1.3 PRs submitted to one of the CRA organizations (FAA CRA or JCAB CRA) that are found to be more appropriate to be analyzed within the remit of the other organizations are transferred to that organization.

2. DISCUSSION

2.1 Since the beginning of the IPACG/FIT meeting, the CRA-Japan has processed with a number of reports submitted by the Stakeholders regarding the problem events in Fukuoka FIR. The last IPACG/32 and FIT/19 meetings were held in Honolulu from 10-14 May. On the meeting, totaling 14 PRs received in recent 6 months were reported.

2.2 The PowerPoint charts contained in **Attachment** to this paper provide the Extracts from the PRs presented at last IPACG32 and FIT/19 that were received and processed by the CRA-Japan in Fukuoka FIR. The latter part of the **Attachment** introduces the Oceanic Air Traffic Control Suits and functions in use now and in the near future at the Fukuoka Air Traffic Management Center.

3. RECOMMENDATIONS

3.1 The meeting is invited to:

a) review the information contained in this paper;

b) encourage FIT-SEA Stakeholders to continue to provide reports of any anomalies that they might experience. Prompt and full reporting of such events to the FIT-SEA CRA will allow any deficiencies to be identified and rectified.

- END -

Extracts from the Problem Reports, presented at IPACG FIT/19

FIT-SEA10

Singapore

24 May, 2010

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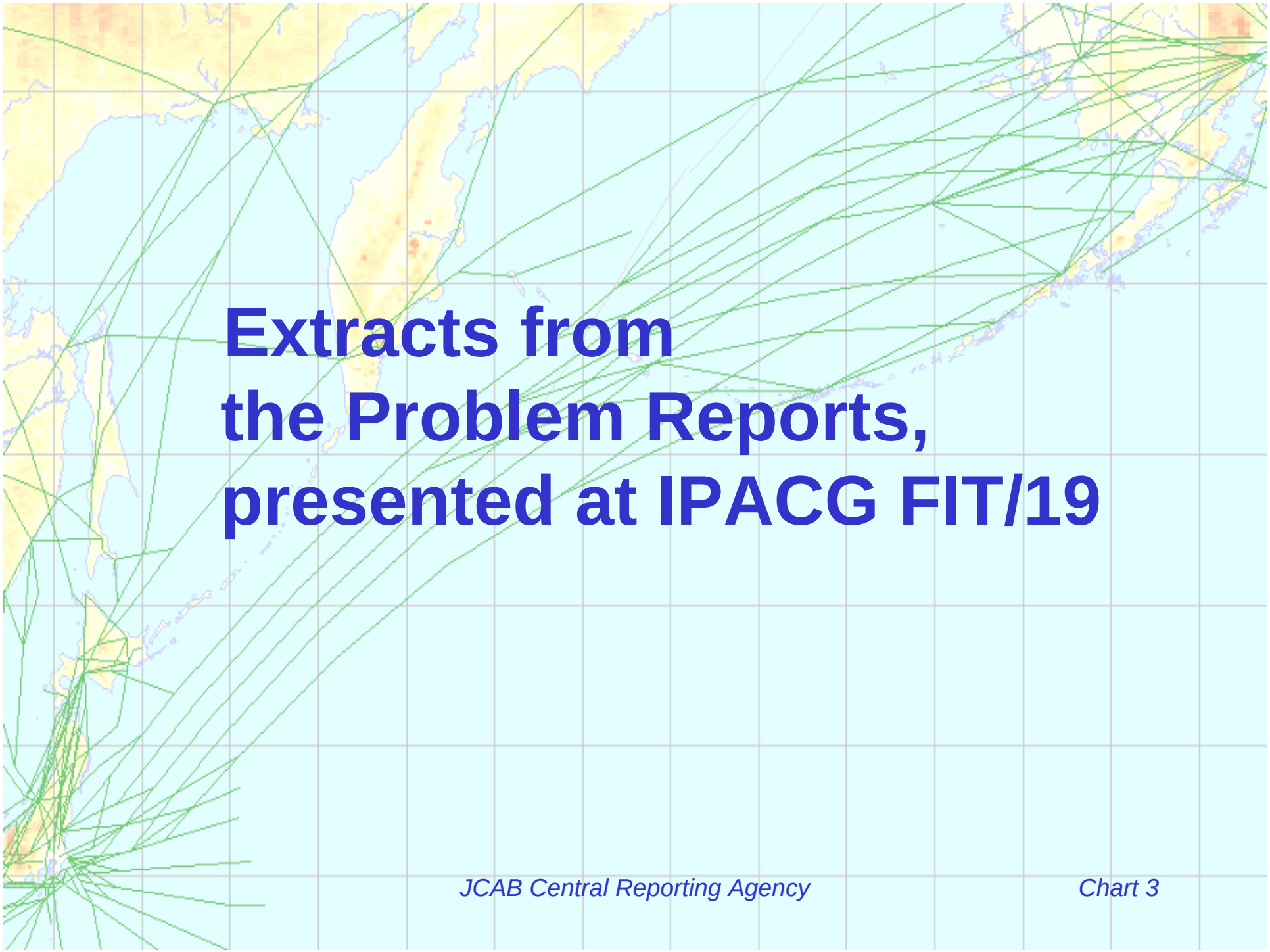
- Extracts from
  the Problem Reports,
  presented at IPACG FIT/19

- FUKUOKA ATMC



Extracts from the Problem Reports, presented at IPACG FIT/19

Specific PRs

- Unable to establish ADS-C.(PR10472)
- Incorrect ADS reports downlinked.(10509)
- Augmented ADS periodic rate.(PR10524)
- Unable to talk via SATVOICE.(PR10525)

Unable to establish ADS-C

PR Number: PR10472

- CPDLC operable, unable to establish ADS-C.
- After the CPDLC reset, ADS remains inoperative until ATSU(=CMU FANS/1) box manually reset.
- Recommended upon the “INVAILED DATA” message on the DCDU per the QRH (Quick Reference Handbook).
- Corrected on FANS-A+.

Incorrect ADS reports downlinked

PR Number: PR10509

- An ATSU end system received the incorrect ADS reports.
- The ATSU end system uplinked an ADS demand request in response to the received incorrect ADS report.
- The incorrect ADS reports included default value in ADS predicted route group.
- Amounted to 560 ADS data exchanged between Air/Ground in about two hours.

Periodic Report

- Periodic reports to be downlinked by the specified interval.
- In Fukuoka FIR, the following fields are included in the report.
  1. Basic ADS: Current position
  2. Flight ID
  3. Intermediate projected intent points
     Distance (NM), True bearing (degree) , Altitude (feet), ETA (hhmmss)
  4. Fixed projected point
     Latitude (degree), Longitude (degree), Altitude (feet), ETA (hhmmss)
  5. Predicted Route (Next) (Next+1)
     Latitude (degree), Longitude (degree), Altitude (feet), ETA (hhmmss)
  6. Earth Reference
     T-Angle (degree), Speed (Knots), V-Rate (feet/min)
  7. Air Reference
     T-Angle (degree), Speed (Knots), V-Rate (feet/min)

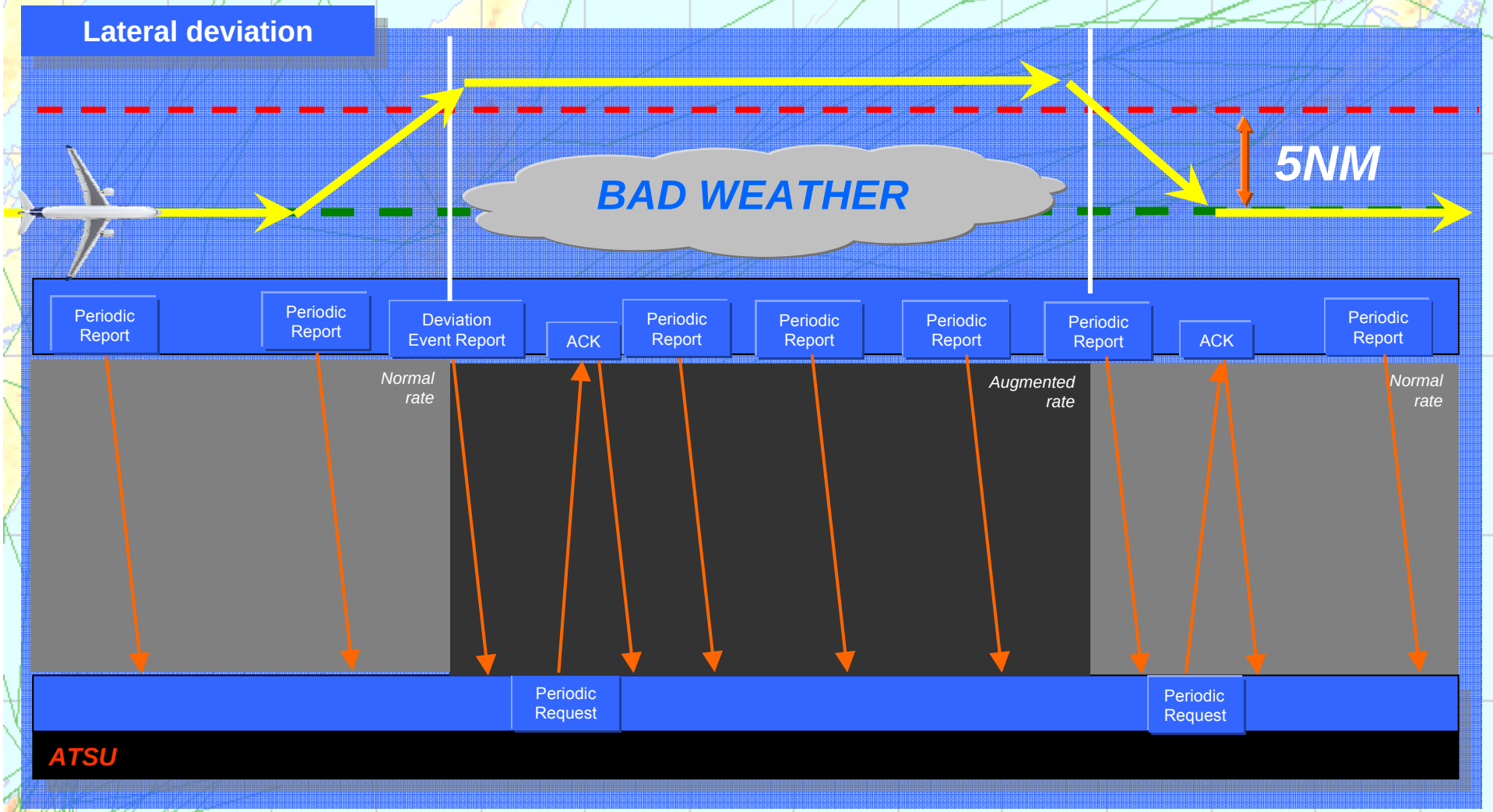
The RTCA DO-258A describes that in case Flight Management System takes more than 5 seconds in computing such ADS data as Predicted Route data and Intermediate Projected Intent Group data, those ADS data fields can be filled with default values.

Augmented ADS periodic rate

PR Number: PR10524

- An airline questioned the number of ADS reports downlinked.
- In the FIR, nominal ADS periodic rate is 9 min 36 sec in considering TLS with RNP4 operation.
  (Refer to IPACG/28 WP/15)
- Because ATSU detected the aircraft did not reach the assigned altitude yet, ATSU requested ADS periodic contract with 5 min 20 sec.
- The aircraft deviated because of weather and the ATSU again requested ADS periodic contract with 5 min 20 sec.

Augmented periodic rate

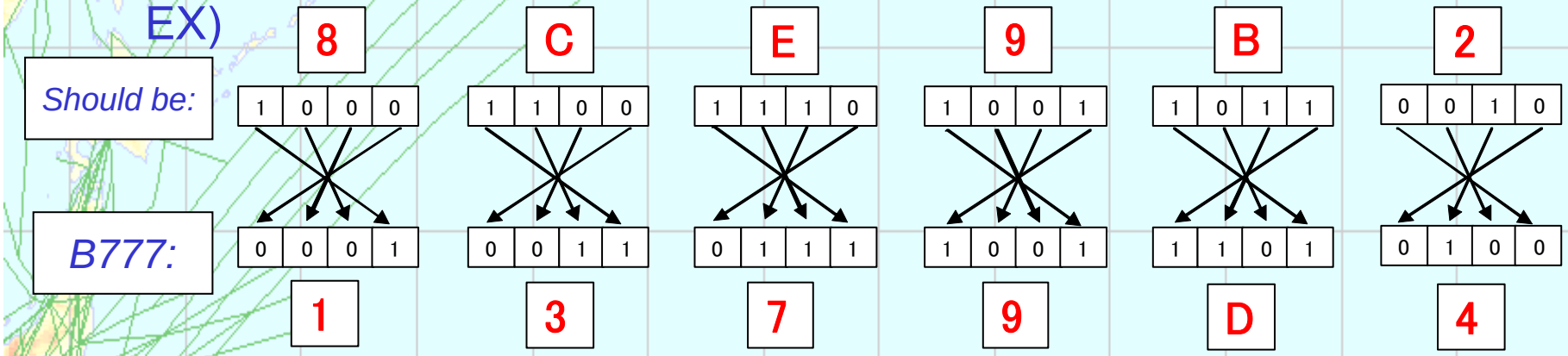


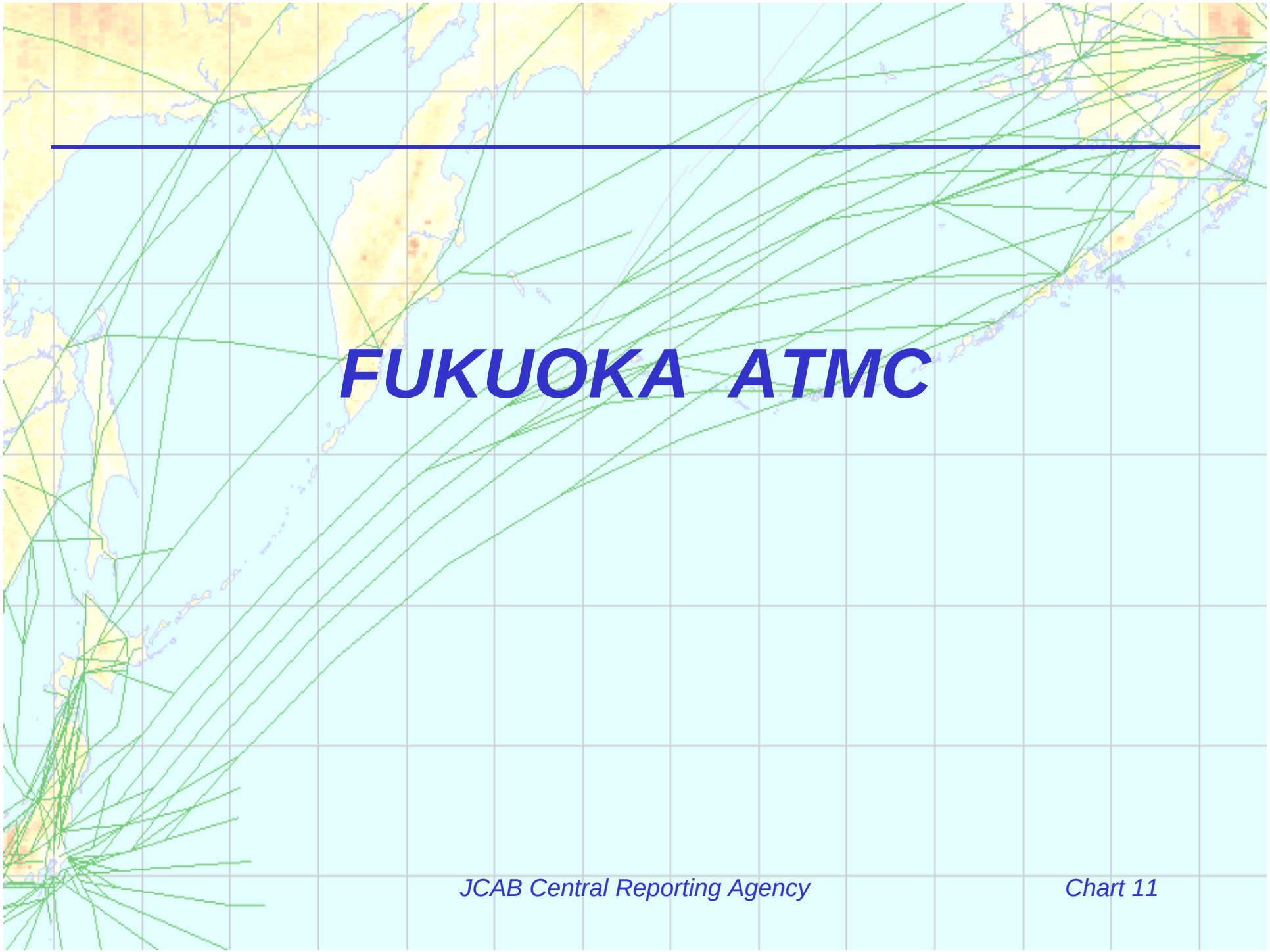
Unable to talk via SATVOICE

PR Number: PR10525

- The ATSU extracts SATVOICE number (ICAO 24 bit ID code) out of a FN_CON message.
- The bit order of the ICAO 24 bit ID code put into the AFN FN_CON message was actually reversed on every 4 bits.
- Symptomatic to B777.
- The ICAO 24 bit ID code is set in an optional field of the FN_CON message.

EX)





FUKUOKA ATMC

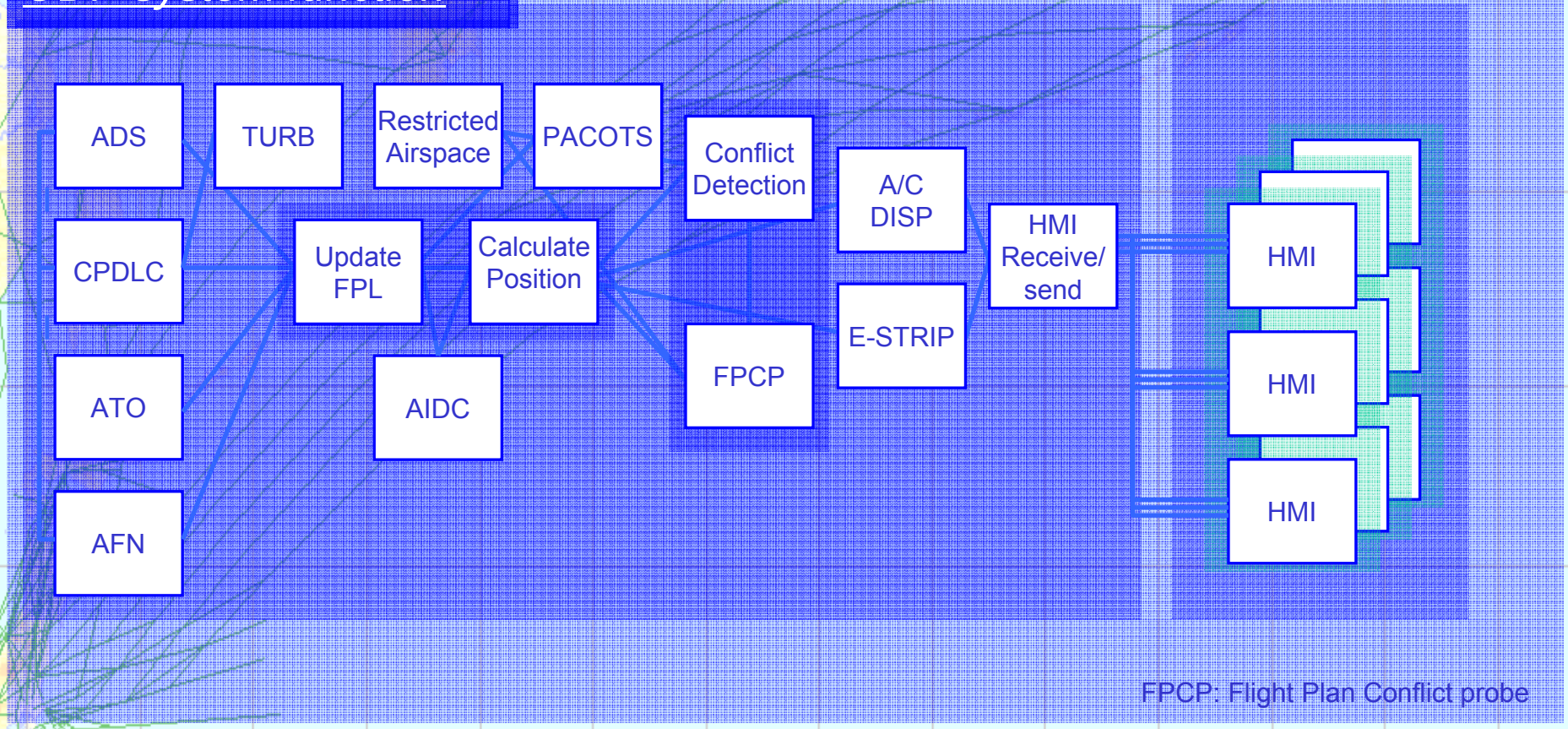
Oceanic ATC system in FUKUOKA FIR

ODP (Oceanic Air Traffic Control Data Processing System)

Oceanic ATC system in FUKUOKA FIR

ODP (Oceanic Air Traffic Control Data Processing System)

ODP system function



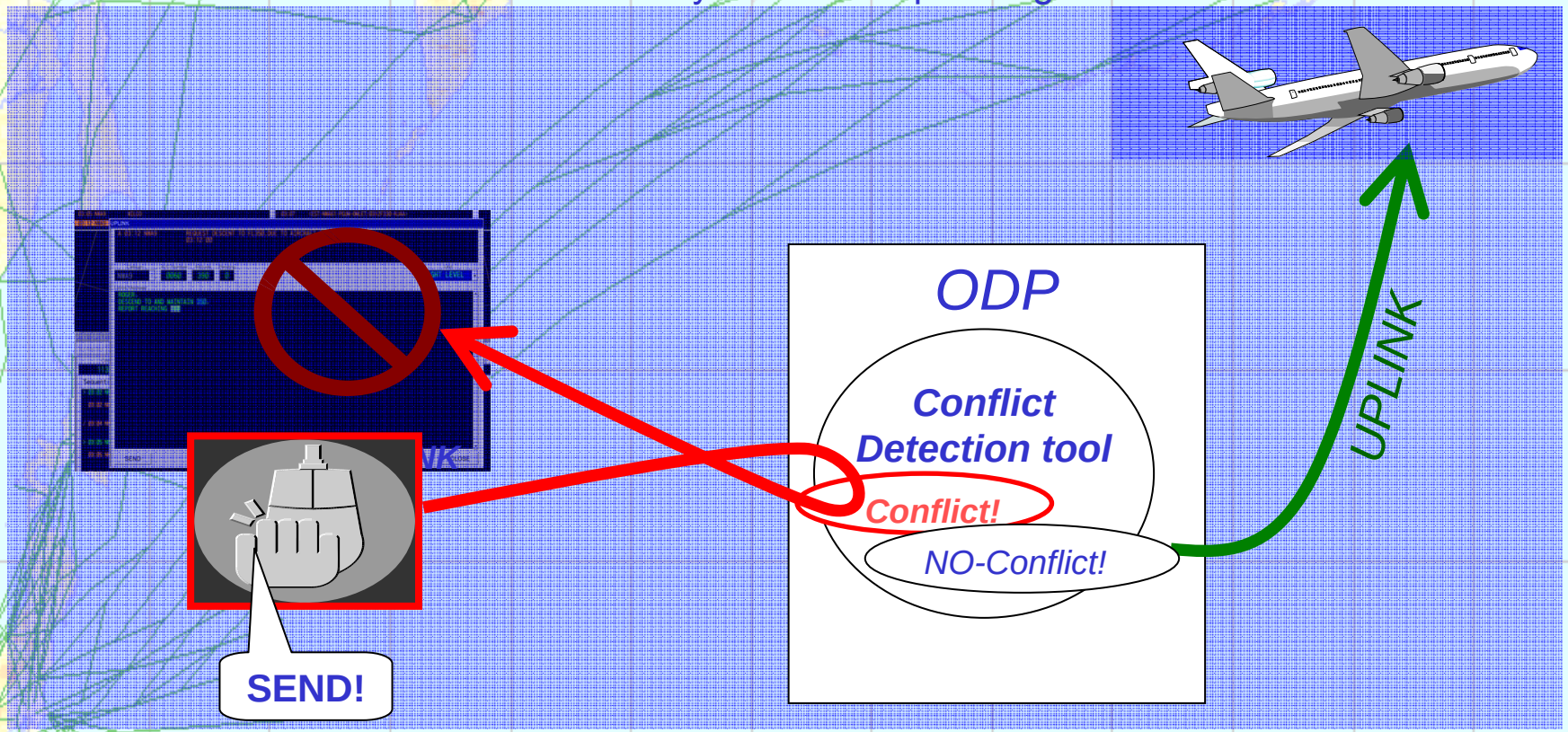
Oceanic ATC system in FUKUOKA FIR

ODP functions

- Trial command function : Check if a controller's clearance to a pilot's request is safe or not. In response to a Trial Clearance command the function checks for the existence of conflict.

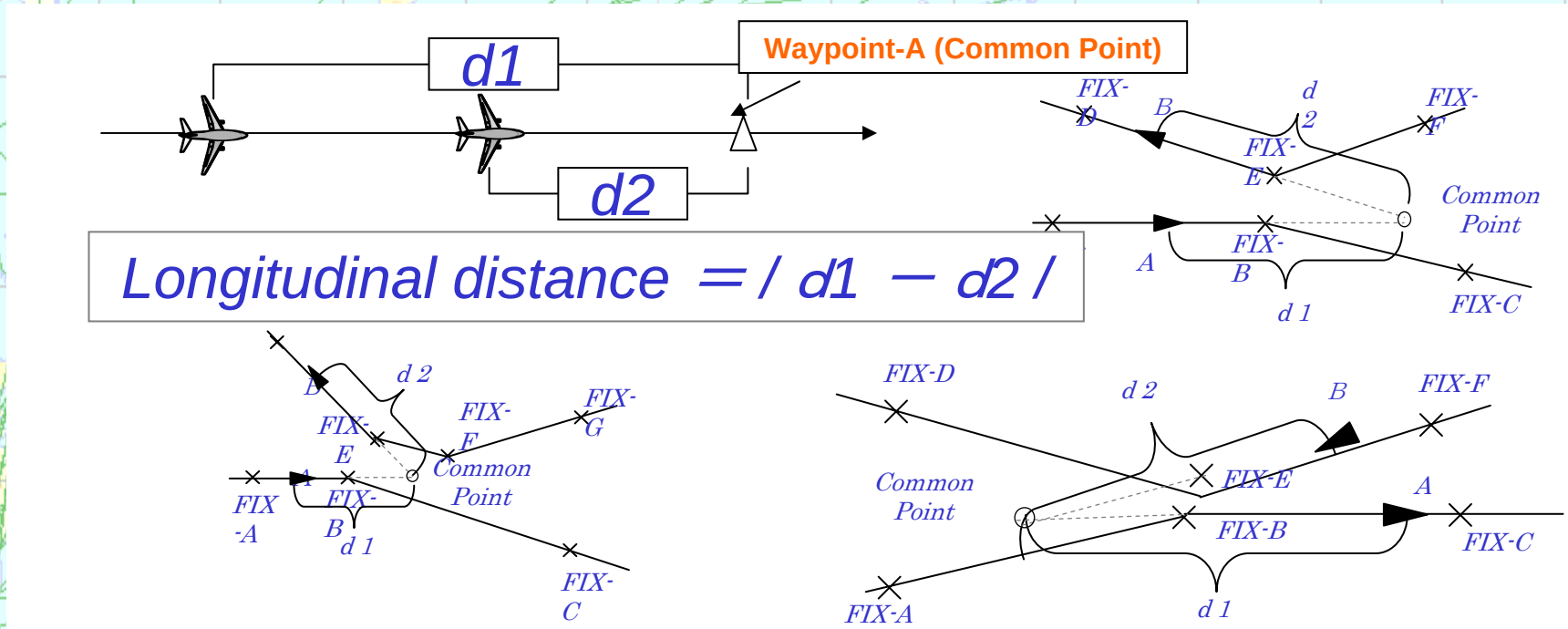
Oceanic ATC system in FUKUOKA FIR

- Clearance check function : When issuing a clearance via CPDLC, the function automatically checks for conflicts based on the clearance. If there detected any conflicts, the function prevent the system from up linking the clearance.



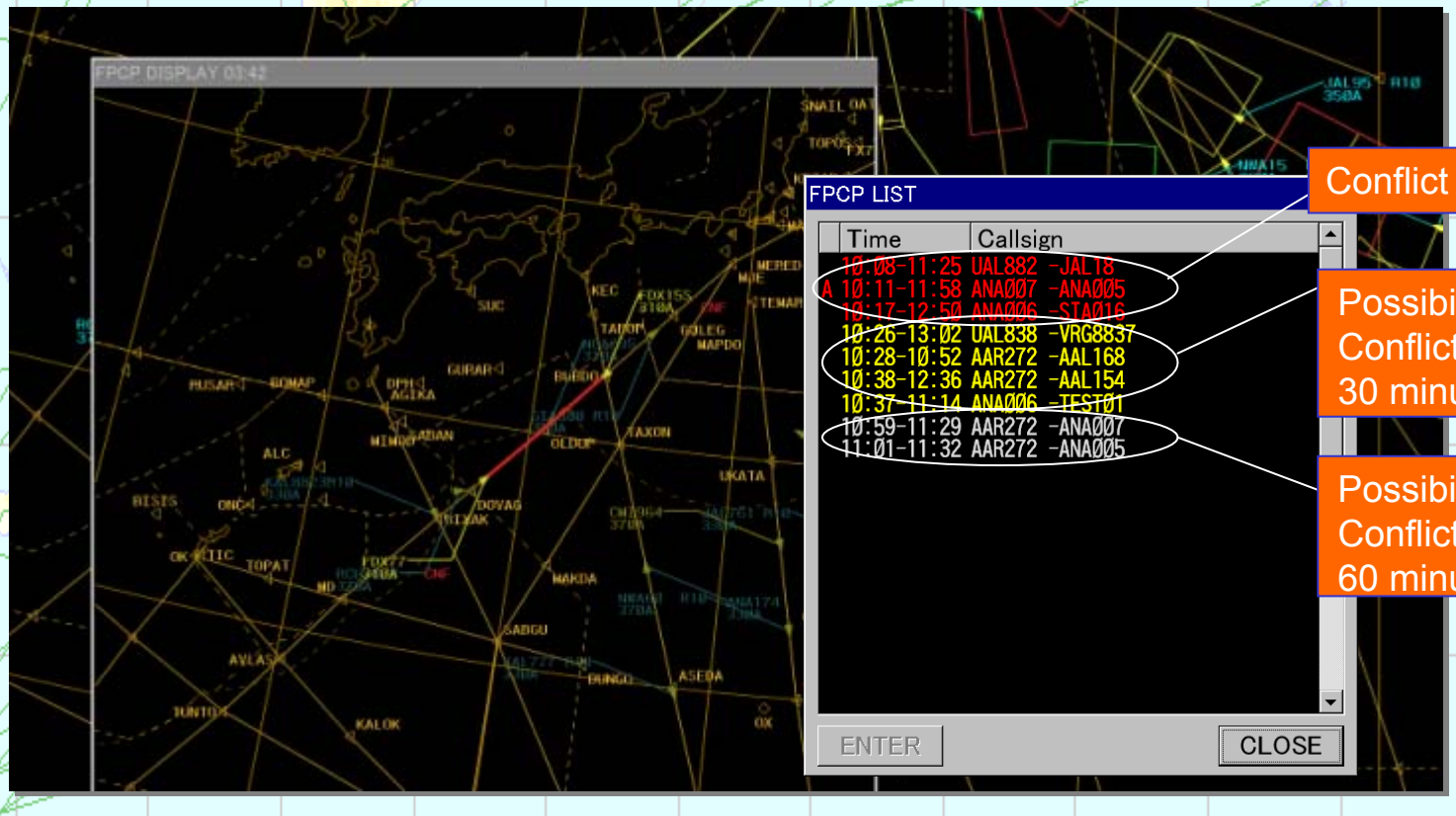
Oceanic ATC system in FUKUOKA FIR

- Conflict detection using Common Point method : Applying the Common Point method to the data-linked aircraft pair.
  (Common Point method is based on the ICAO standard)



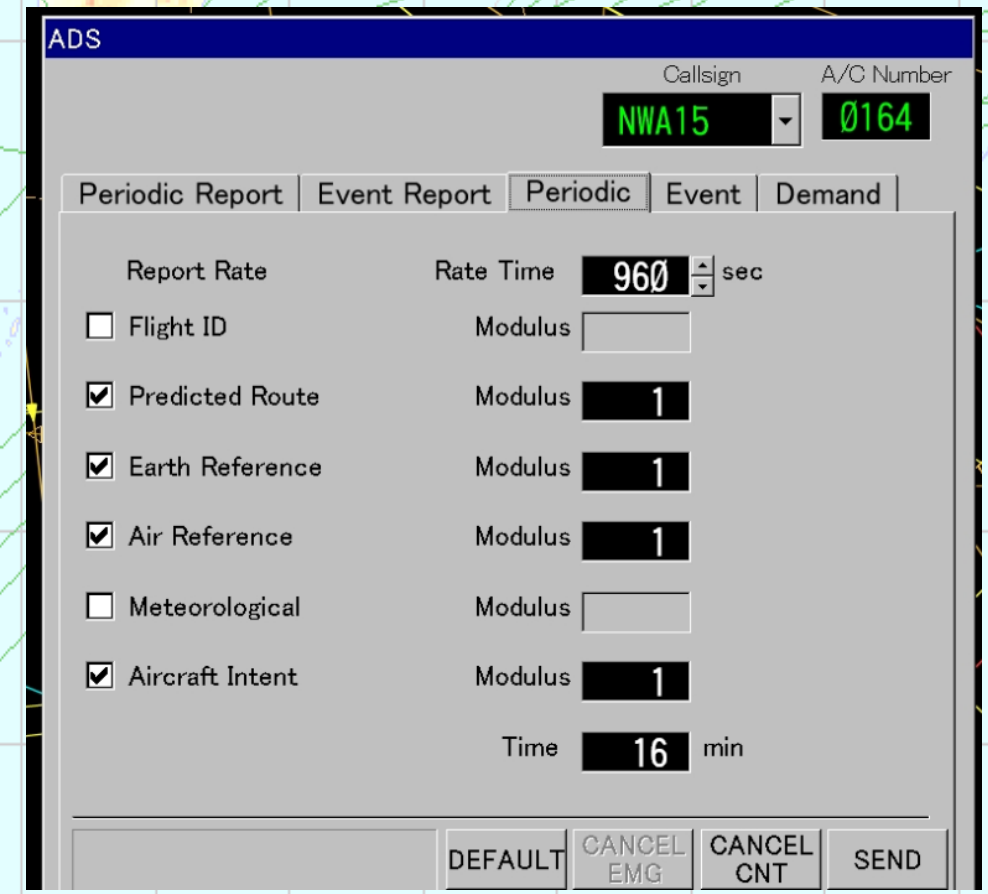
Oceanic ATC system in FUKUOKA FIR

- FPCP
  (Flight Plan Conflict Probe) : Capable of detecting conflicts for 3 hours in advance, preventing the emergence of conflicts.



Oceanic ATC system in FUKUOKA FIR

- Altering periodic interval function : Capable of altering ADS reporting rate arbitrarily



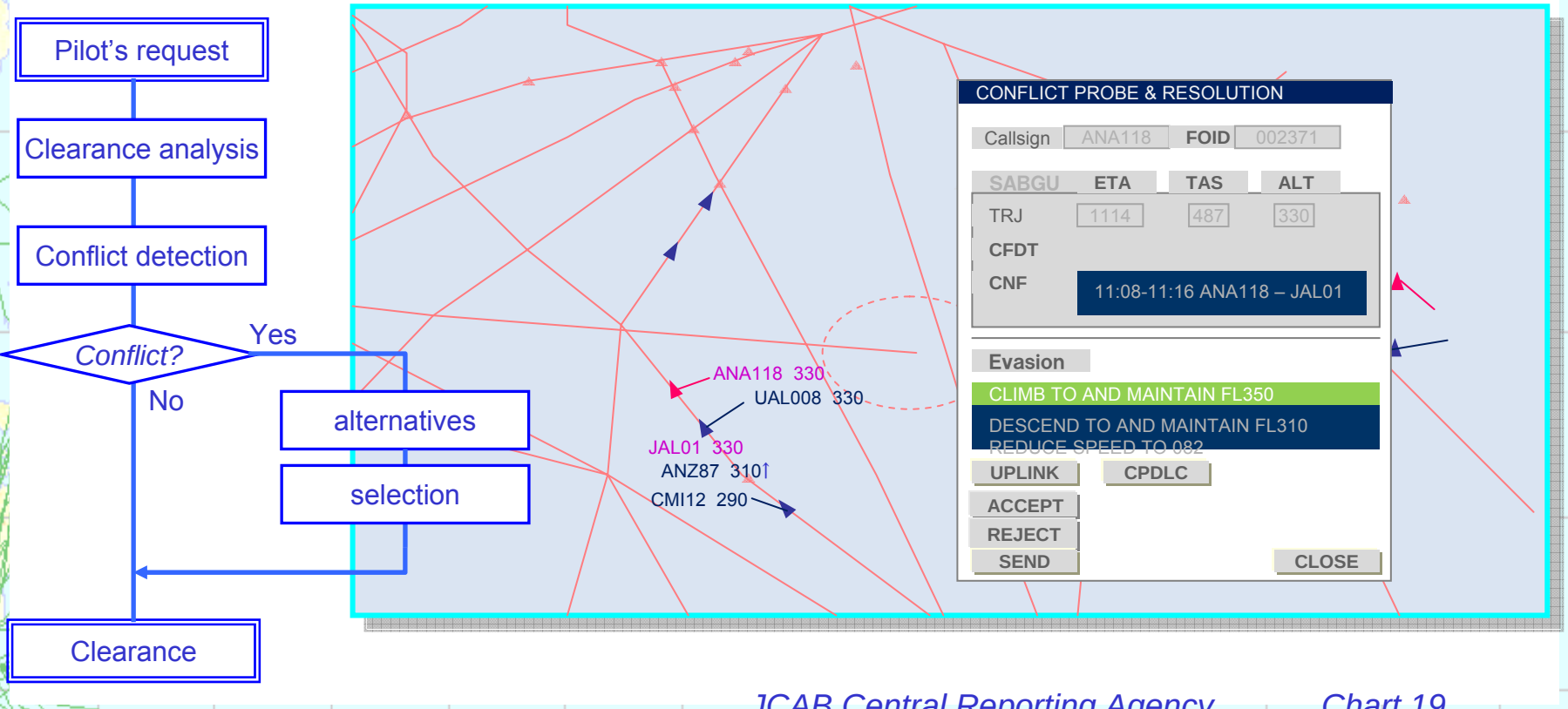
Oceanic ATC system in FUKUOKA FIR

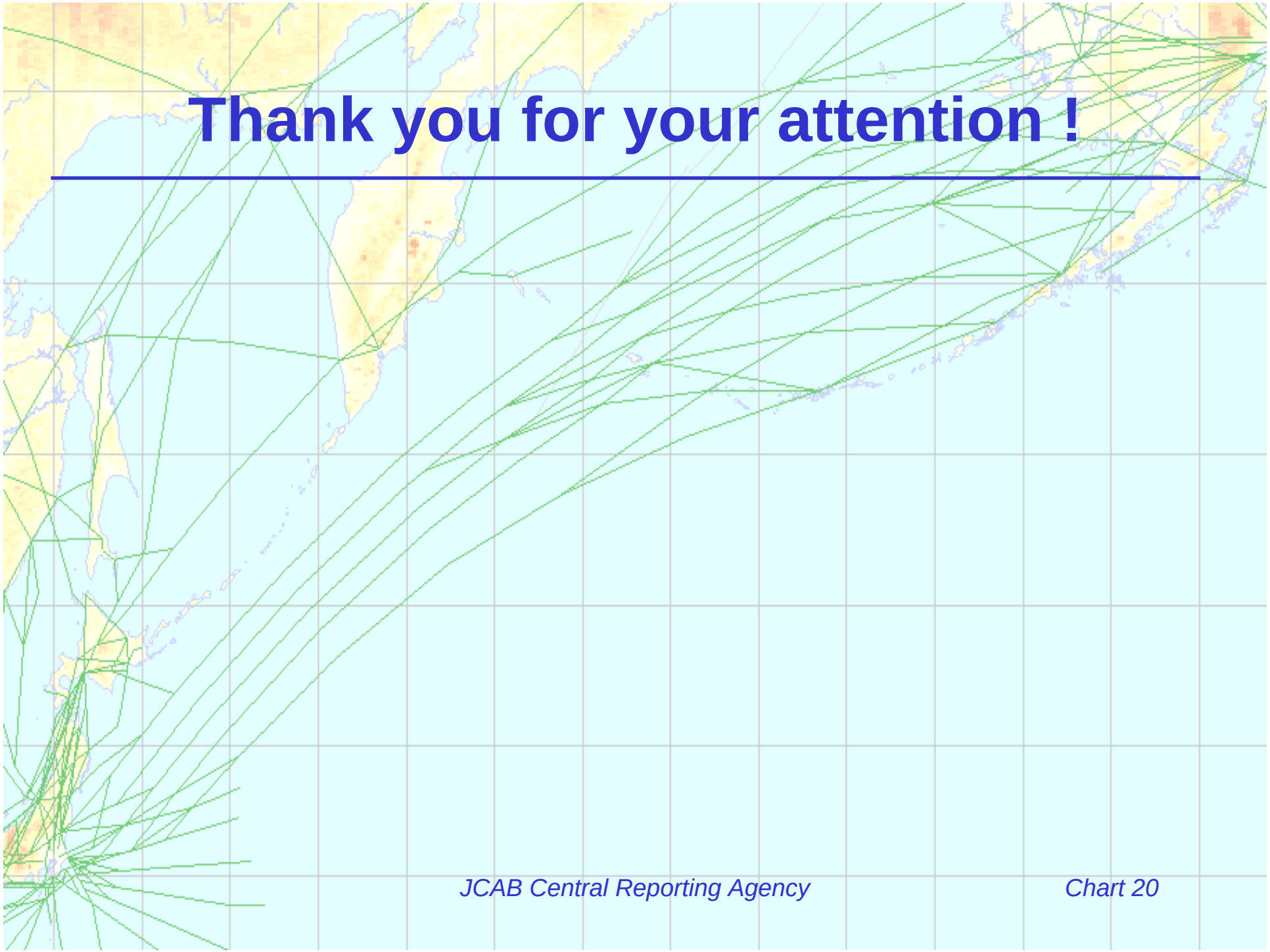
<Function currently in production (to go into service in 2012) Service in)>

Conflict Probe & Resolution

Automatically determines if pilot's request for clearance is acceptable.

If a conflict is detected, then presents a possible alternative to the controller.





Thank you for your attention !