

JCAB CRA Activities since IPACG FIT/16

IPACG FIT/17
Seattle, U.S.A.
19 May, 2009

JCAB CRA Activities Since IPACG FIT/16

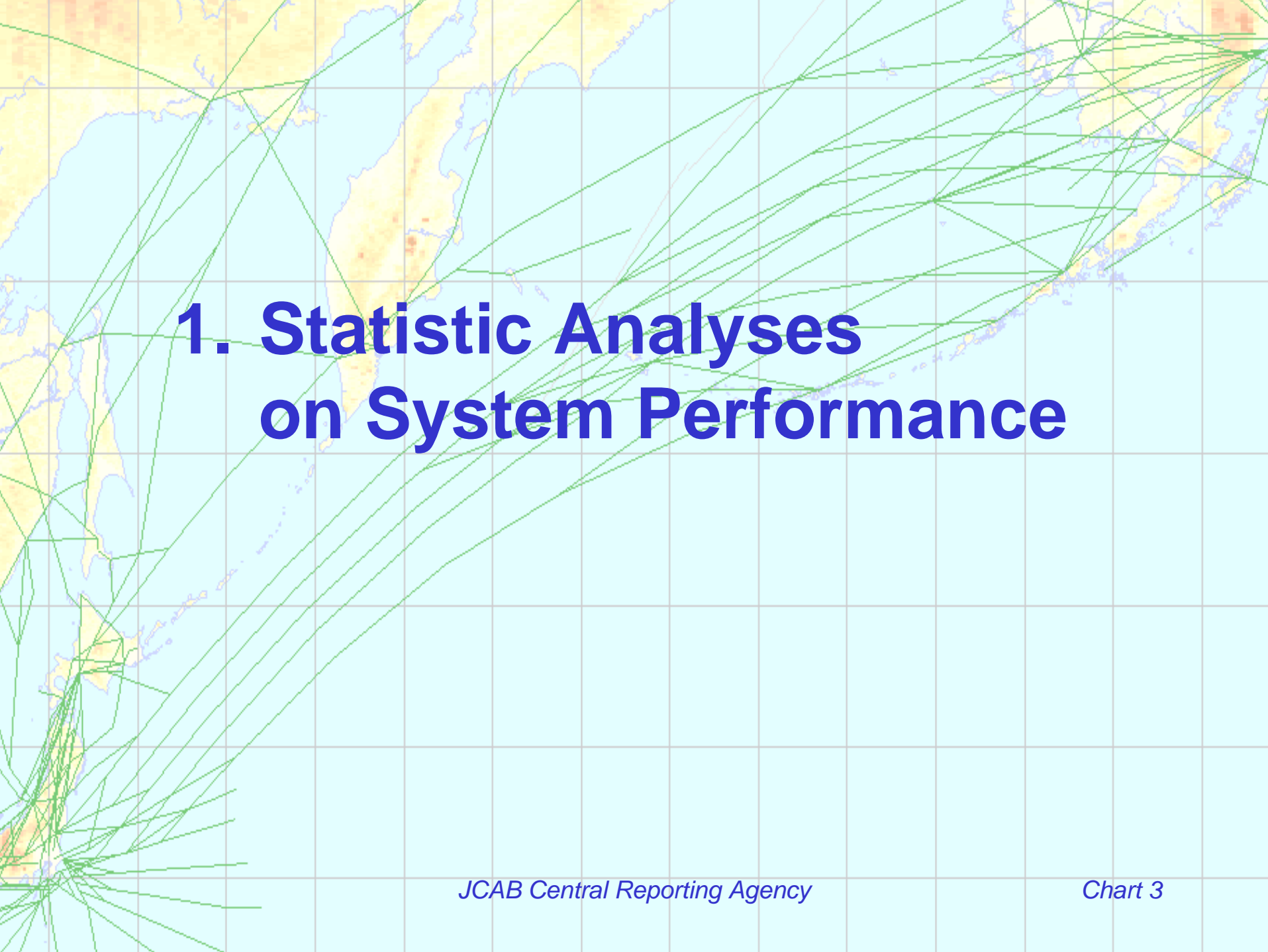
This presentation contains;

1. Statistic Analyses on System Performance

- System Performance Analysis Data

2. Problem Reports since IPACG FIT/16

- Specific reports

The background of the slide is a map of Southeast Asia, showing the Malay Peninsula, Sumatra, and the Indonesian archipelago. Overlaid on this map is a dense network of thin green lines representing flight paths or connections between various locations. The lines are most concentrated in the southern part of the region, particularly around the Indonesian archipelago, and radiate outwards towards the north and east. The map is also overlaid with a light blue grid.

1. Statistic Analyses on System Performance

CPDLC System Performance

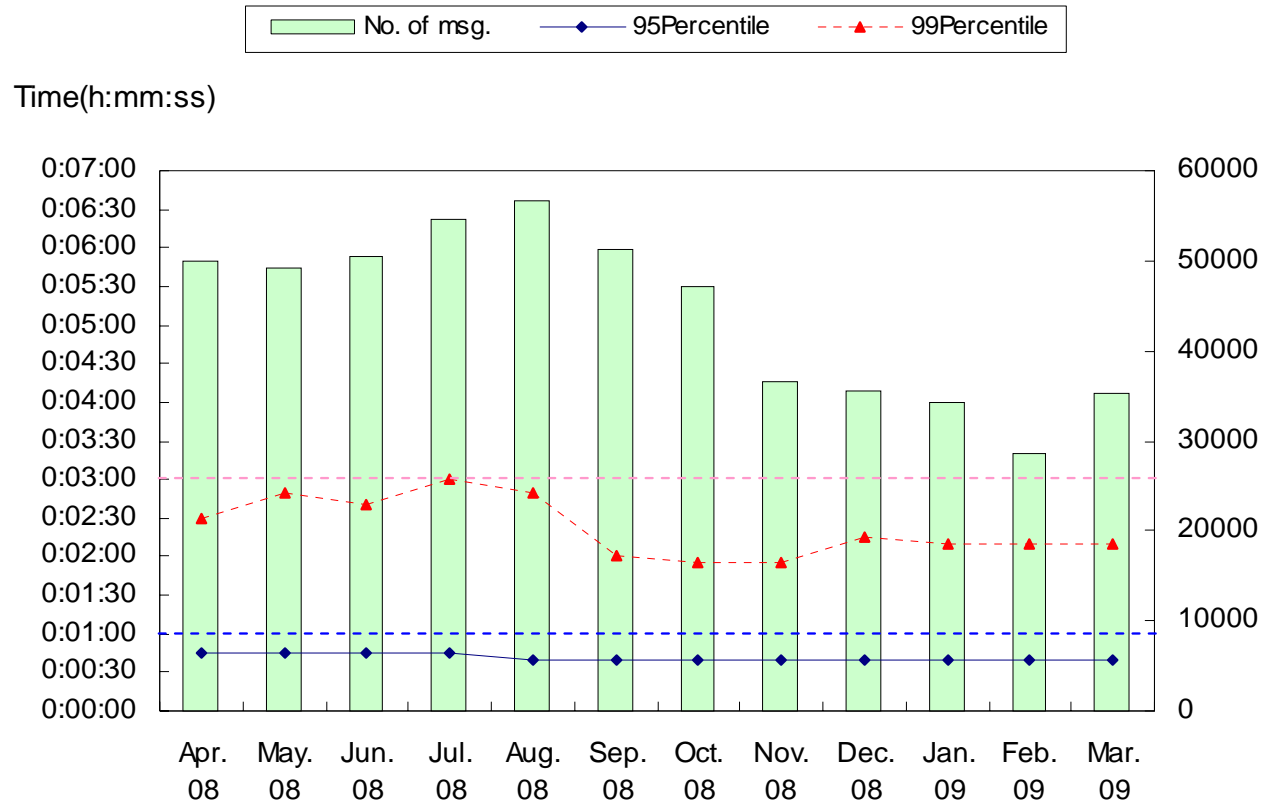
- In this section, we provide CPDLC system performance on:
 - + CPDLC Down-link Performance
 - + CPDLC Up-link Performance
 - + CPDLC Up-link Message Success Rate
 - + Success Rate of Automatic-Transfer of CPDLC Connections to the Next ATSUs
(Fukuoka ATM Center - Oakland & Anchorage ARTCC)

CPDLC Down-link Performance

(One-way Trip Time:

Difference of time-stamps between the avionics and ground systems)

(Fig.) CPDLC Downlink 95 & 99 Percentile

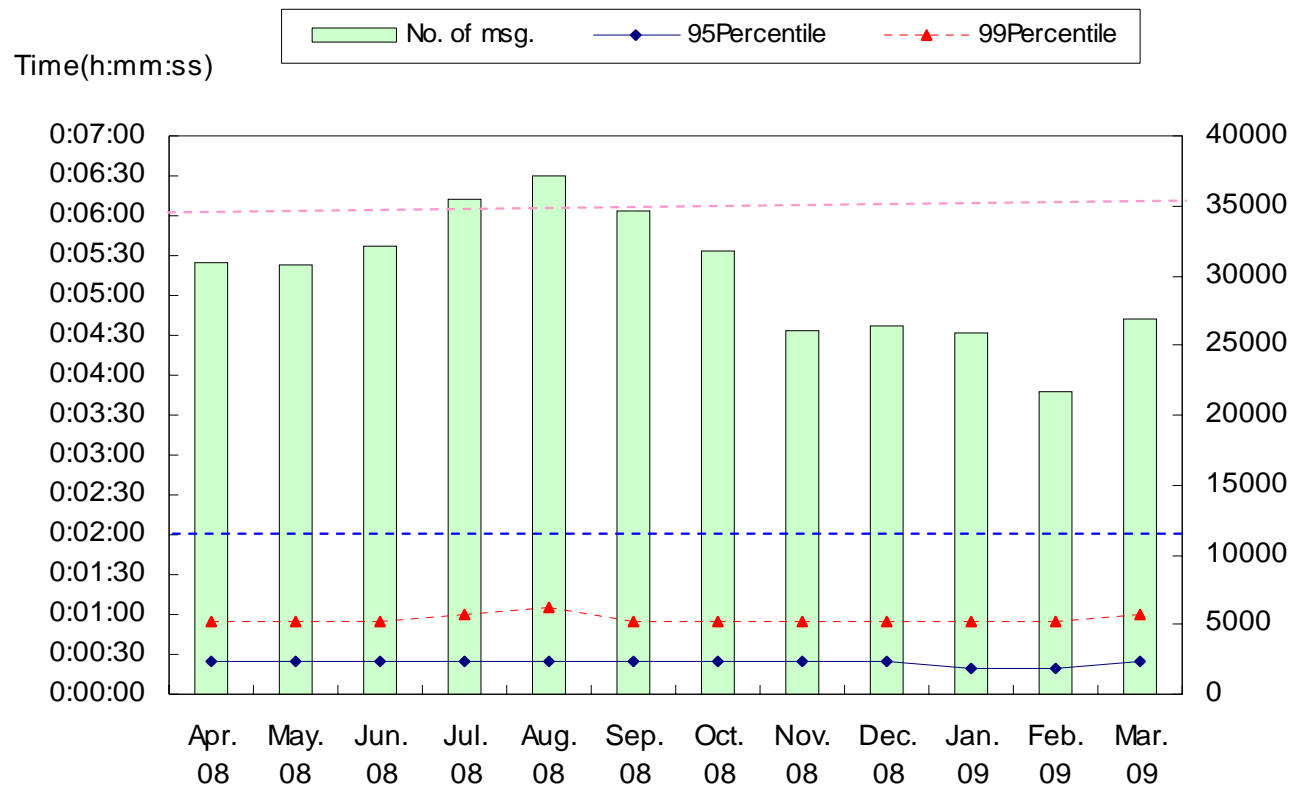


CPDLC Up-link Performance

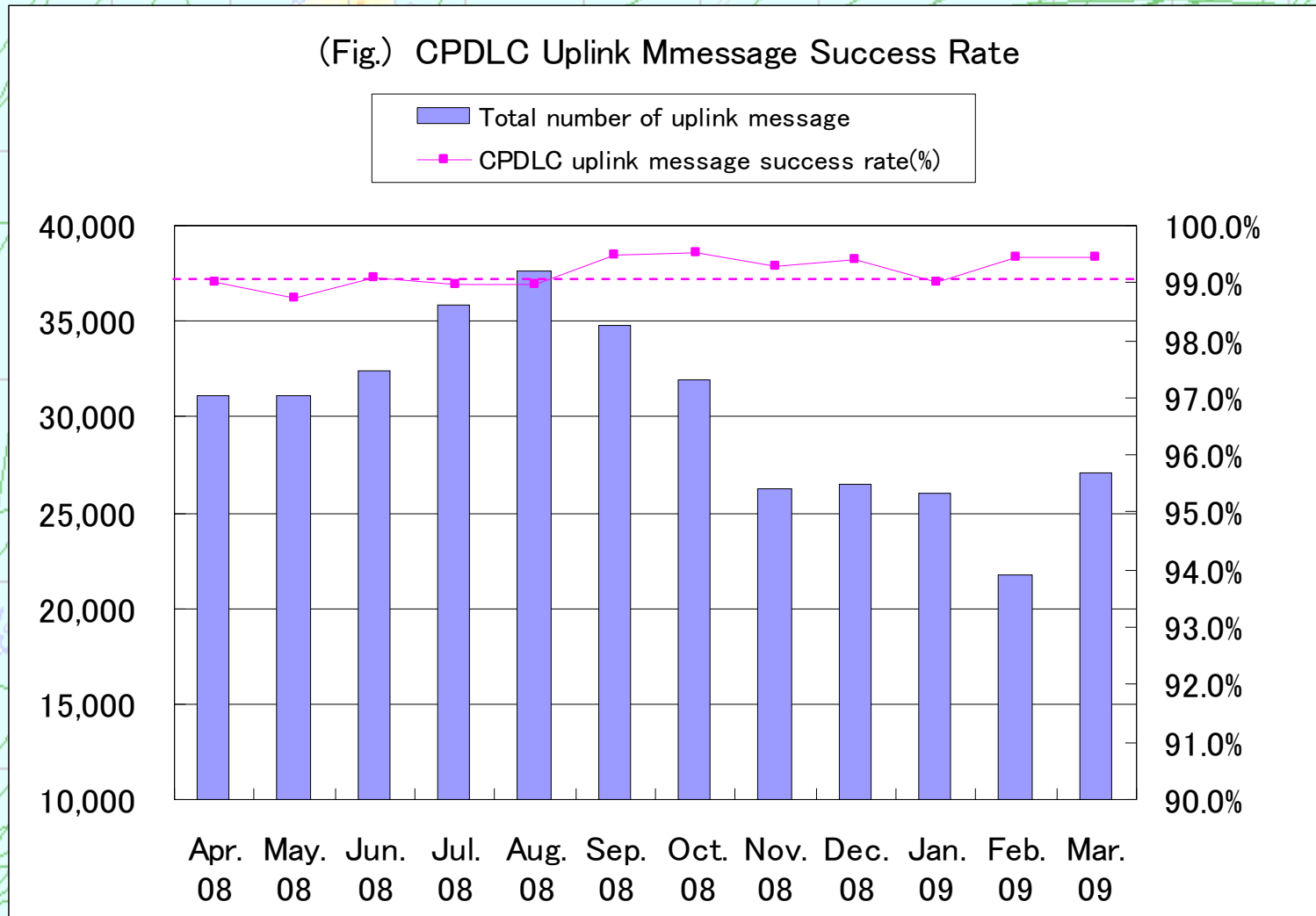
(Round Trip Time:

Transit-delay-time from time-stamp of up-link to receipt time of MAS)

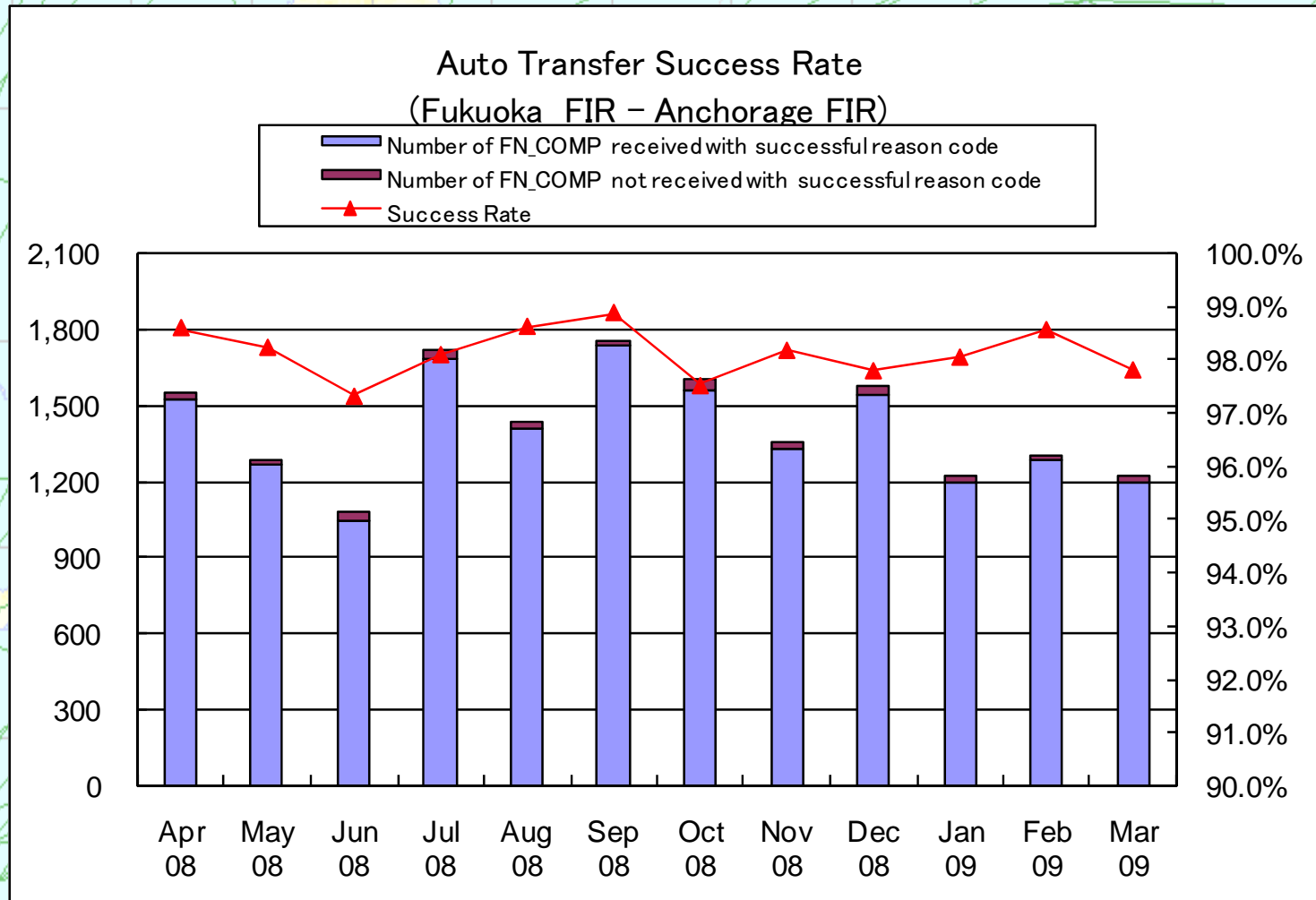
(Fig.) CPDLC Uplink 95 & 99 Percentile



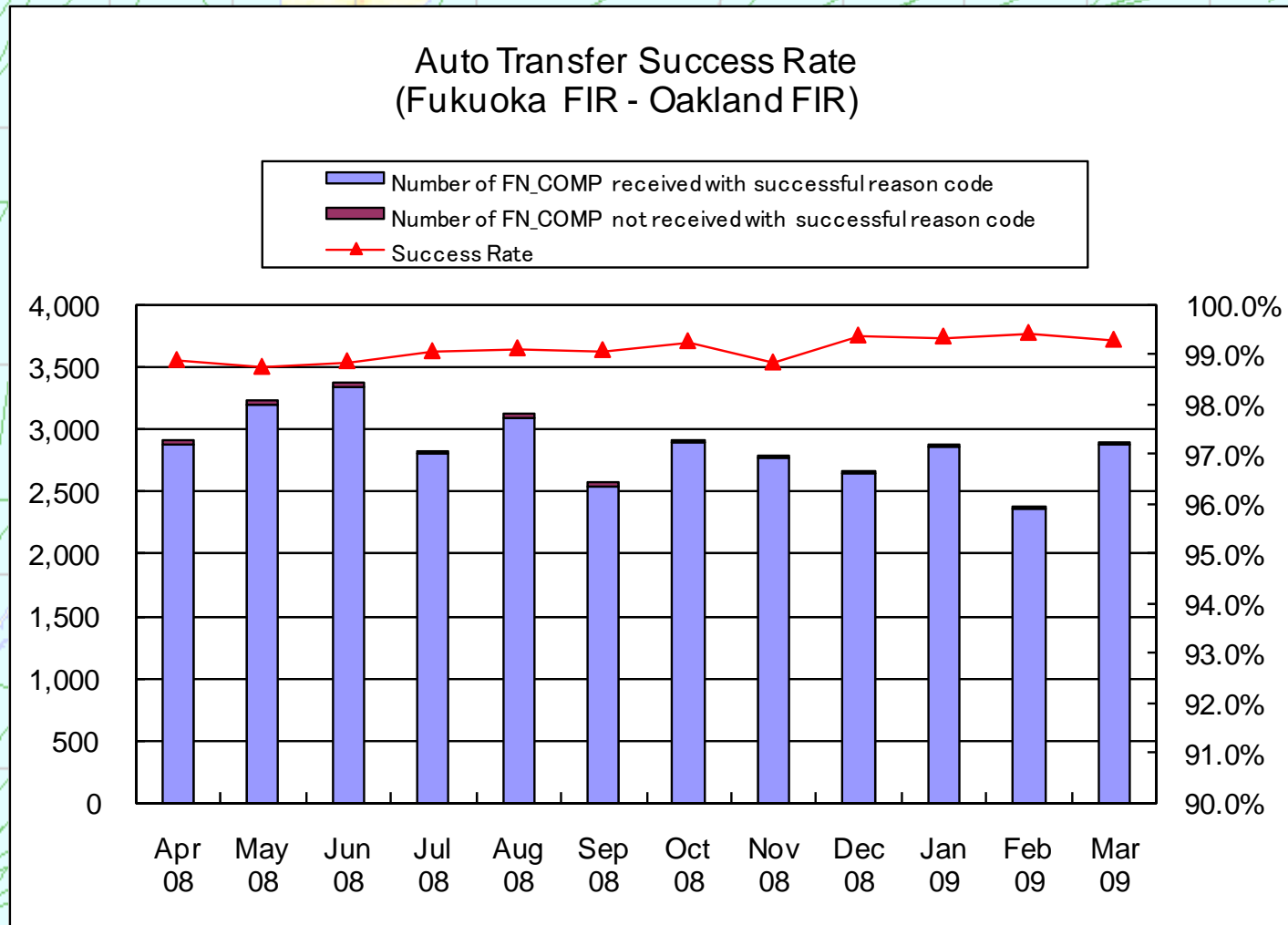
CPDLC Up-link Message Success Rate




Success Rate of Automatic-Transfer of Connections (From Fukuoka FIR to Anchorage FIR)



Success Rate of Automatic-Transfer of Connections (From Fukuoka FIR to Oakland FIR)





2. Problem Reports

JCAB CRA Activities Since IPACG FIT/16

- **New Problem Reports**
 - **Specific reports**

New Reports since IPACG FIT/16(1)

| PR # | Problem Report Title | Air/ Ground | Comments/Notes/Description | Status | Discuss at FIT/17? |
|-------|--|----------------|---|------------------|-----------------------|
| 10477 | Temporal datalink failure | Air/ Ground | The aircraft was likely to be in NO-comm state | Open | N |
| 10478 | Disruption of downlink | Air | Avionics (CMU) problem | Open | Y |
| 10479 | Disruption of downlink | Air/ Ground | The aircraft was likely to be in NO-comm state | Open | N |
| 10480 | Delayed Data Transmission | Air/ Ground | The aircraft was likely to be in NO-comm state | Open | N |
| 10481 | Incorrect MED | Air | Incorrect MED down linked by particular aircraft | Waiting for info | Y |
| 10482 | Disruption of Downlink | Air | Did not use SATCOM though flying out of VHF coverage | Waiting for info | Y |
| 10483 | Delayed Data Transmission | Air/ Ground | The aircraft was likely to be in NO-comm state | Open | N |
| 10484 | Failure in automatic datalink transfer | Ground | ATSU did not uplink EOS | Waiting for info | N |
| 10485 | Duplicated CPDLC MSG reception | Air | One MSG downlinked via VHF, another downlinked via SATCOM | Waiting for info | Y |

New Reports since IPACG FIT/16 (2)

| PR # | Problem Report Title | Air/ Ground | Comments/Notes/Description | Status | Discuss at FIT/17? |
|-------|---|----------------|--|------------------|-----------------------|
| 10486 | Disruption of Downlink | Air/ Ground | The aircraft was likely to be in NO-comm state | Open | N |
| 10487 | Disruption of Downlink | Air | Avionics (CMU) problem | Open | Y |
| 10488 | Disruption of Downlink | Air | Didn't use SATCOM though flying out of VHF coverage | Waiting for info | Y |
| 10489 | ADS waypoint change event report not downlinked | Air | Installed FANS soft didn't support the Predicted Altitude of Next waypoint | Open | N |
| 10490 | CPDLC Clearance wasn't delivered | Air/ Ground | Under investigation | In progress | N |
| 10491 | Delayed Data Transmission | Air/ Ground | The aircraft was likely to be in NO-comm state | Open | N |
| 10492 | ADS contract couldn't established | Air/ Ground | Under investigation | In progress | N |
| 10493 | ADS request undelivered | Ground | Observed an inexplicable MSG routing | Waiting for info | Y |
| 10494 | Delayed Data Transmission | Air/ Ground | The aircraft was likely to be in NO-comm state | Open | N |
| 10495 | Disruption of Downlink | Air | Didn't use SATCOM though flying out of VHF coverage | Waiting for info | Y |

New Reports since IPACG FIT/16 (3)

| PR # | Problem Report Title | Air/ Ground | Comments/Notes/Description | Status | Discuss at FIT/17? |
|-------|---|----------------|---|----------------|-----------------------|
| 10496 | Disruption of Downlink | Air/ Ground | Under investigation | In progress | N |
| 10497 | Delayed Data Transmission | Air/ Ground | Under investigation | In progress | N |
| 10498 | Disruption of Downlink and delayed downlinks | Air/ Ground | Under investigation | In progress | N |
| 10499 | ADS position report not delivered | Air | Use of HFDDL where HFDDL not supported | Open | N |
| 10500 | AFN LOGON failure | Air/ Ground | Under investigation | In progress | N |
| 10501 | CPDLC connection failure | Air/ Ground | Under investigation | In progress | N |
| 10502 | Duplicated ADS MSG reception | Air/ Ground | One MSG downlinked via VHF, another via SATCOM | Open | Y |
| 10503 | CPDLC connection failure | Air/ Ground | Under investigation | In progress | N |
| 10504 | CPDLC connection failure | Air/ Ground | Under investigation | In progress | N |
| 10505 | Re-logon after datalink- transfer | Air/ Ground | Under investigation | In progress | N |
| 10506 | Datalink disruption | Air/ Ground | Under investigation | In progress | N |
| 10507 | Disruption of downlink | Air | Avionics (CMU) problem | Open | Y |

Specific PRs (New)

- CMU related problem.(PR10478,487,507)
- Incorrect MED.(PR10481)
- Duplicated message was received.
(PR10485,PR10502)
- ADS request undelivered.(PR10493)
- SATCOM not used. (10495)

Avionics(CMU) problem

PR Number: PR10478, 487,507

- Downlink stopped at around VHF coverage fringe.
- AOC and MED MSG normally downlinked.
- VDL-mode2 mostly used.
- A particular CMU related problem?
- CMU maker is investigating.
- Refer to FAA-CRA report (FIT-13:PR569).

Incorrect MED

PR Number: PR10481

- Incorrect MED downlinked.
- 90% of the aircraft belong to Japanese operator.
- Problem with particular avionics (CMU).

<Correct MED>

MED

*FI Flight ID/AN Registration
Number*

DT QXT IOR2 011728 M16A

- 0ES172833S

<Incorrect MED>

MED

*FI Flight ID/AN Registration
Number*

DT QXT IOR2 012249 S41A

-

No data

Duplicated message reception

PR Number: .(PR10485,PR10502)

<PR10485>

- ATSU received same content climb request twice.
- One is via VHF, another via SATCOM.
- Sent [ROGER] to first MSG, [Clearance] to second MSG.
- [UNRECOGNIZED MSG REFERENCE NUMBER] downlinked in response to the clearance.

<Analysis>

- Receiving [ROGER], aircraft closed the climb request, therefore the clearance was recognized as “UNRECOGNIZED MSG REFERENCE NUMBER” .

Duplicated message reception

<PR10485>

Aircraft

1.VIA VHF
[REQUEST CLIMB TO ...]

2.VIA SATCOM
[REQUEST CLIMB TO ...]

3.[ROGER]

4.[CLIMB TO AND...]

5.[UNRECOGNIZED MSG REFERENCE NUMBER]

ATSU



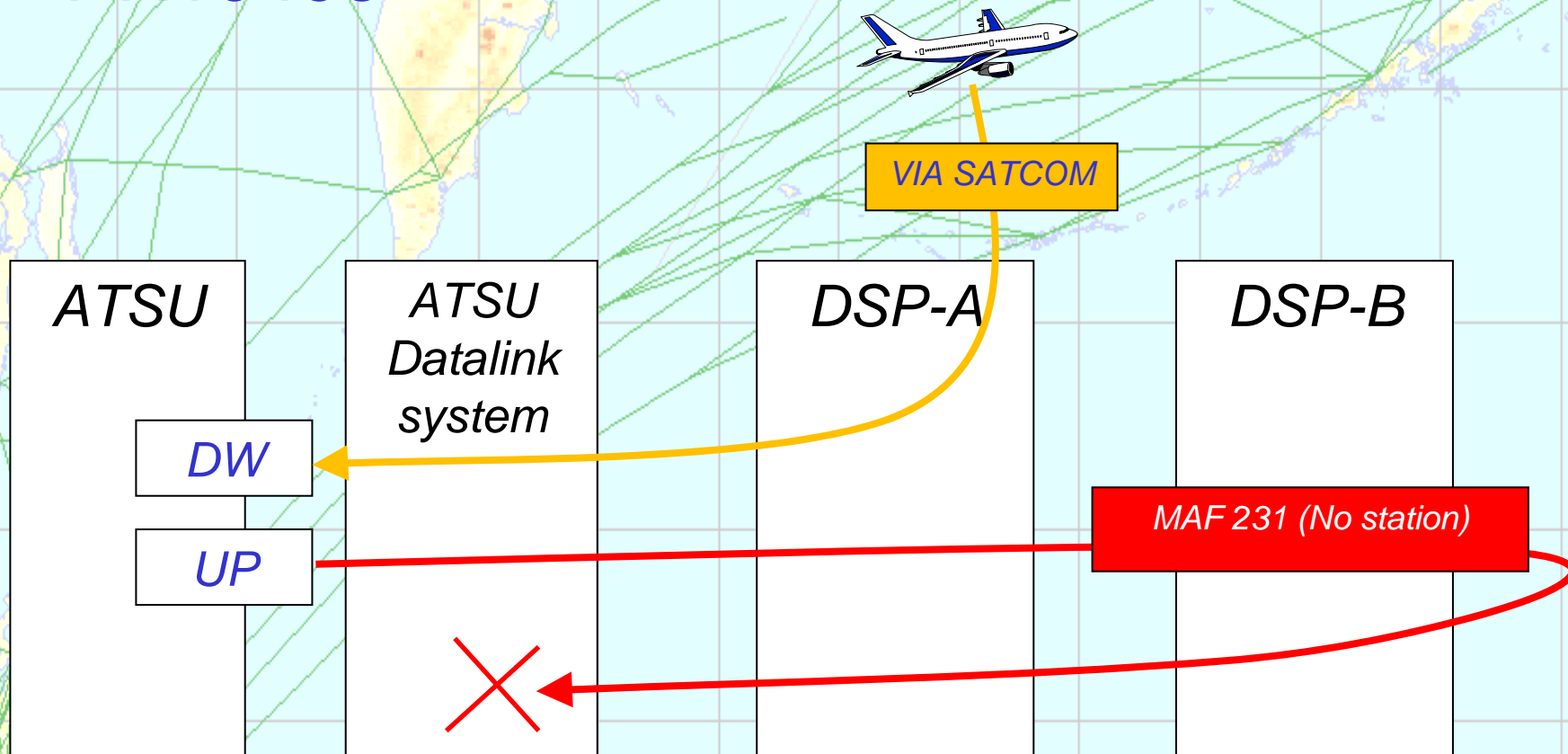
ADS request undelivered

PR Number: PR10493

- In response to ADS request, no ADS ACK downlinked.
- Probably related to a particular DSP's MSG delivery routing?
- Inquiry to the DSP has been made.

ADS request undelivered

<PR10493>





No trace of SATCOM use

PR Number: 10482,488,495

- Downlink disrupted near VHF coverage fringe.
- No trace of SATCOM use.
- Inquiry has been sent to the concerned aircraft operator.

Questions?
