



International Civil Aviation Organization

The Eleventh Meeting of the FANS Implementation Team for South-East Asia (FIT-SEA/11) and the Eighteenth Meeting of the South-East Asia ATM coordination Group (SEACG/18)

Bangkok, Thailand, 3 - 6 May 2011

Agenda Item 3: Central Reporting Agency – South-East Asia

REPORT OF FIT-SEA CRA

(Presented by Japan)

SUMMARY

This Working Paper presents Periodic Status Reports on the ADS/CPDLC operations conducted both in the Singapore and Ho Chi Minh FIRs. This paper also provides the Problem Report processed by the Central Reporting Agency-Japan since FIT-SEA/10 meetings. These reports were prepared solely based on the data and information provided by the Civil Aviation Authority of Singapore and the Civil Aviation Administration of Viet Nam.

1. BACKGROUND

1.1 The Central Reporting Agency (CRA)-Japan was designated as FIT-SEA CRA by FIT-SEA, and has been supported by Air Traffic Control Association-Japan.

1.2 The FIT-SEA CRA has been providing the CRA services according to the Term of Reference (TOR) that was agreed upon by the third meeting (FIT-SEA/3) held in November 2005.

1.3 FIT-SEA/5 held in January 2007 agreed to the arrangement for the Phase 1 operational trial of data link, and the trial was commenced at 0001 UTC on 15 March 2007.

1.4 FIT-SEA/6 held in May 2007 agreed to the arrangement for the Phase 2 operational trial of data link, and the trial was commenced at 0001 UTC on 2 August 2007.

1.5 FIT-SEA/7 held in January through February 2008 agreed that the Phase 2 operational trial of data link was to be migrated to the full ADS/CPDLC operations. The ADS/CPDLC regular operations were commenced on the eight oceanic RNAV routes of L625, L628, L642, M765, M768, M771, N500 and N892 in the Ho Chi Minh FIR from 10 April.

1.6 The FIT-SEA CRA has been receiving data and information concerning ADS/CPDLC system performance and Problem Reports (PRs) from the Civil Aviation Authority of Singapore (CAAS) and the Civil Aviation Administration of Viet Nam (CAAV).

1.7 This paper presents the status of ATS data link operational performance and the summary of PRs provided solely by CAAS and CAAV in accordance with the established procedures.

1.8 FIT-SEA/10 held in May 2010, at this meeting, Japan informed that FIT-SEA CRA for CAAS and CAAV would not be able to continue beyond March 2011, not solely because of its financial resource but also other reasons.

1.9 CRA-Japan, however, would consider providing the provision of the FIT SEA CRA services for a couple of years if the Philippines was able to initiate the ADS/CPDLC operational trial in the Manila FIR in 2010. Philippines had informed that the operational trial in the Manila FIR would start in October 2010. Also, CRA-Japan, however, noted that support for data link implementation in the Manila FIR would be vital and that a formal CRA for FIT-SEA should be established as soon as possible.

2. DISCUSSION

2.1 Since FIT-SEA/10, the CRA-Japan has received 8 PRs at all from Stakeholders. All of them 8 events are classified as "In progress".

2.2 The PowerPoint charts contained in Attachment to this paper shows each item and datalink system performance analyses to be covered. The presentation includes summaries of Problem Reports (PRs) considered particularly to be discussed and those are ready for closure at this meeting.

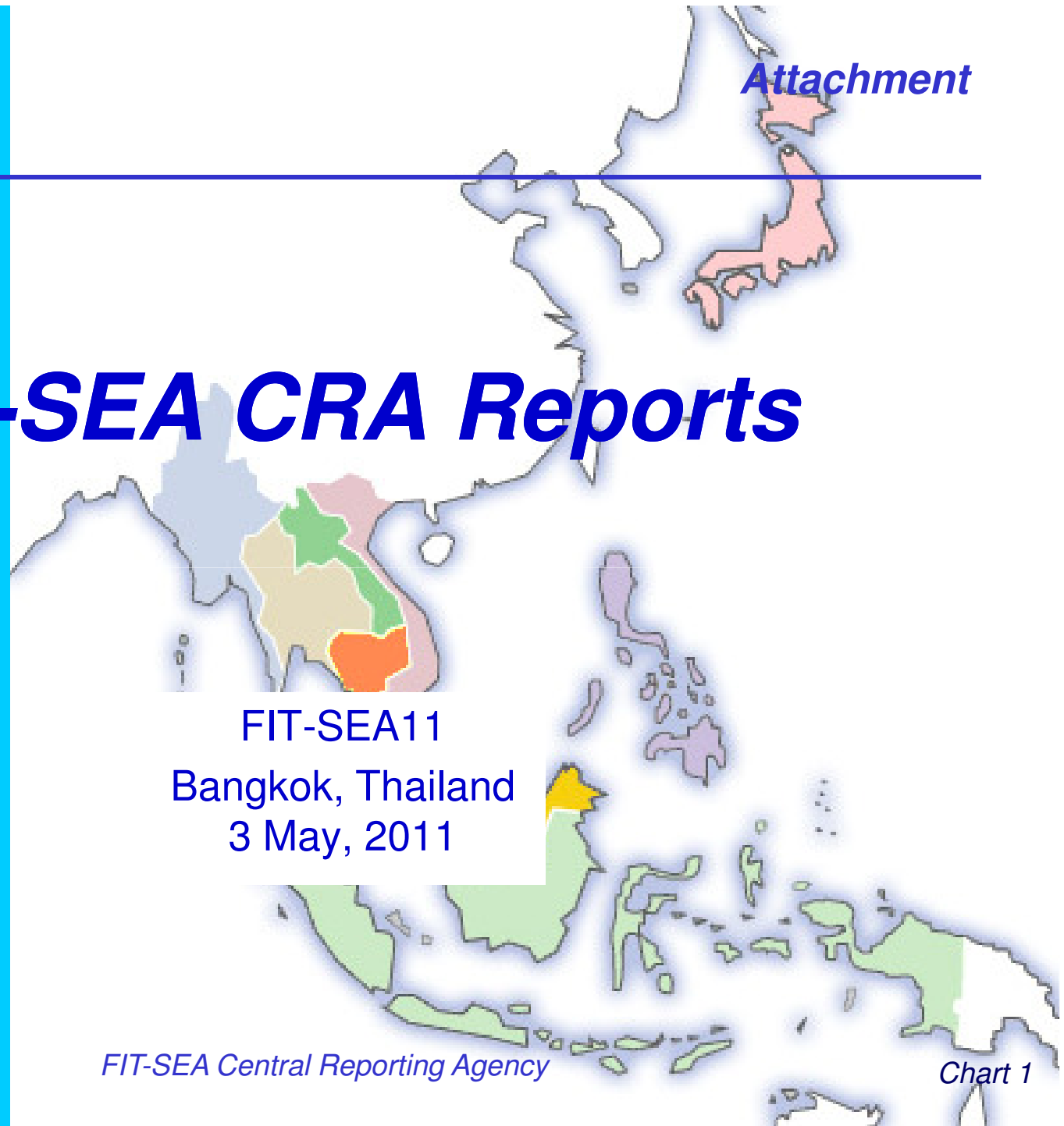
3. RECOMMENDATIONS

3.1 The meeting is invited to:

- a) review the information contained in the system performance analysis of 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 -

FIT-SEA CRA Reports



FIT-SEA CRA Reports

A map of Southeast Asia is visible in the top right corner of the slide, showing the outlines of the region's countries.

This presentation contains;

1. **Statistic Analyses on System Performance**

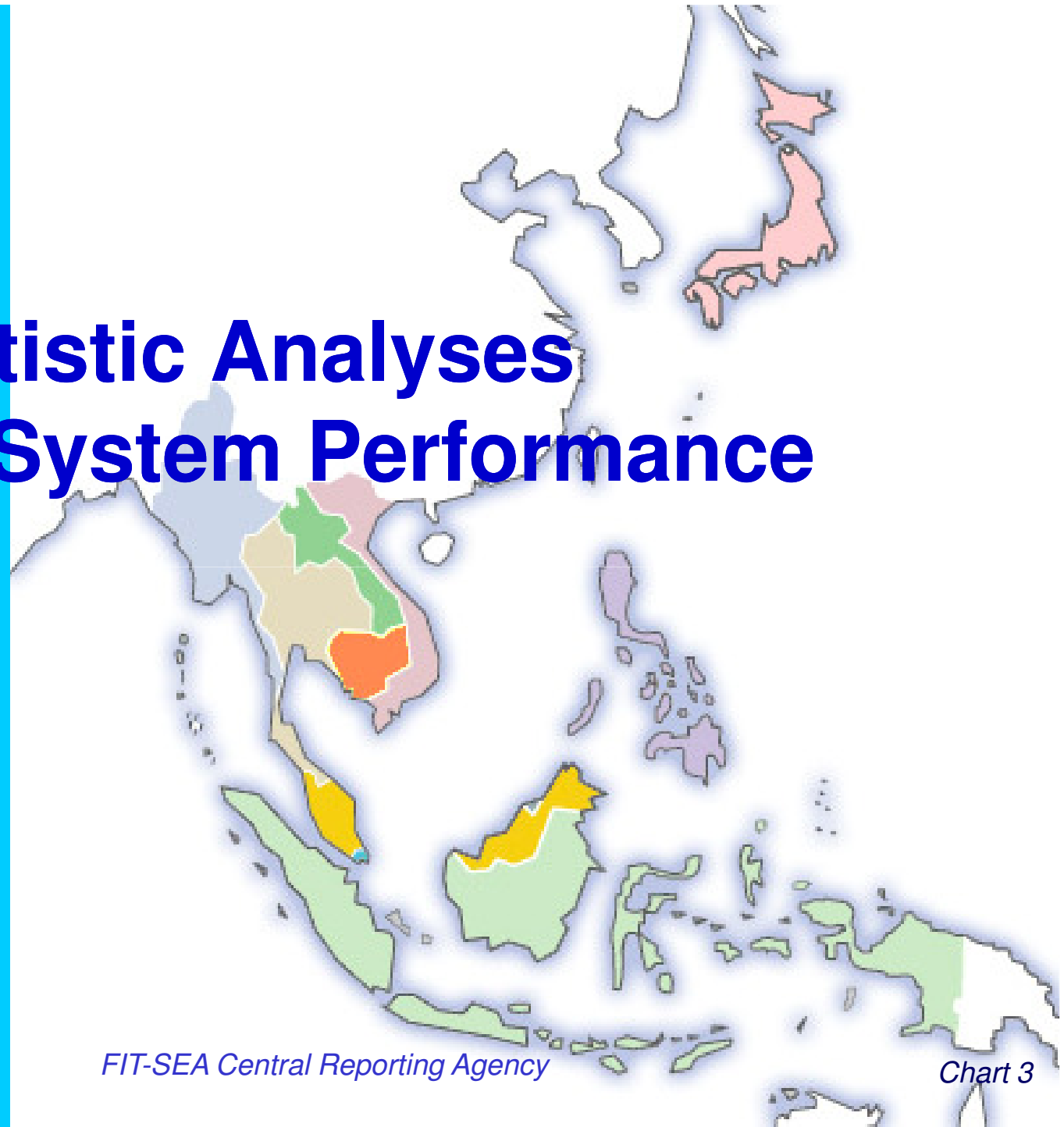
System Performance Analysis Data

2. **Problem Reports**

Since FIT-SEA/10

Specific reports

1. Statistic Analyses on System Performance



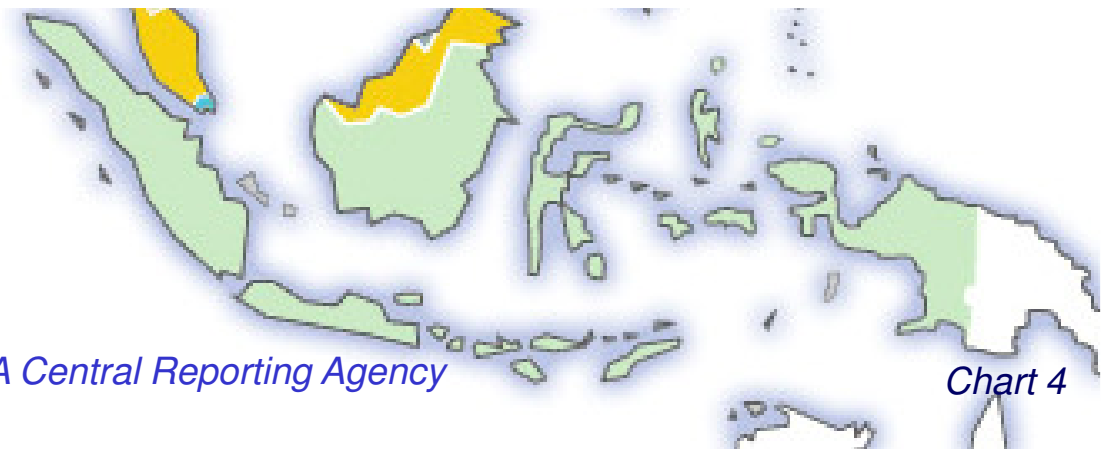
FIT-SEA Central Reporting Agency

Chart 3

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
 - + Auto Transfer Success Rate

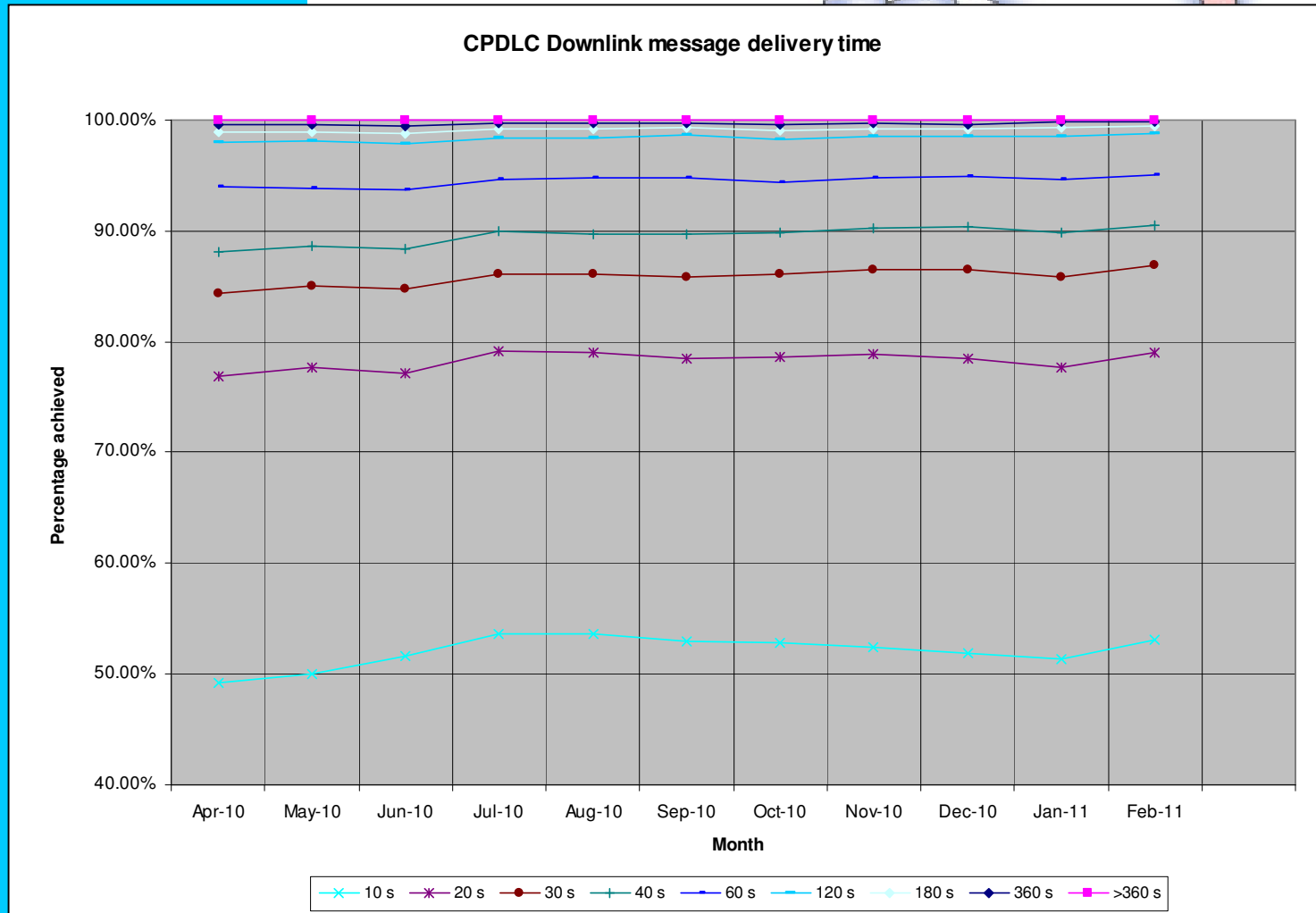


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Chart 4

CPDLC Down-link Performance

<SINGAPORE>



One-way Trip Time: Difference of time-stamps between the avionics and ground systems

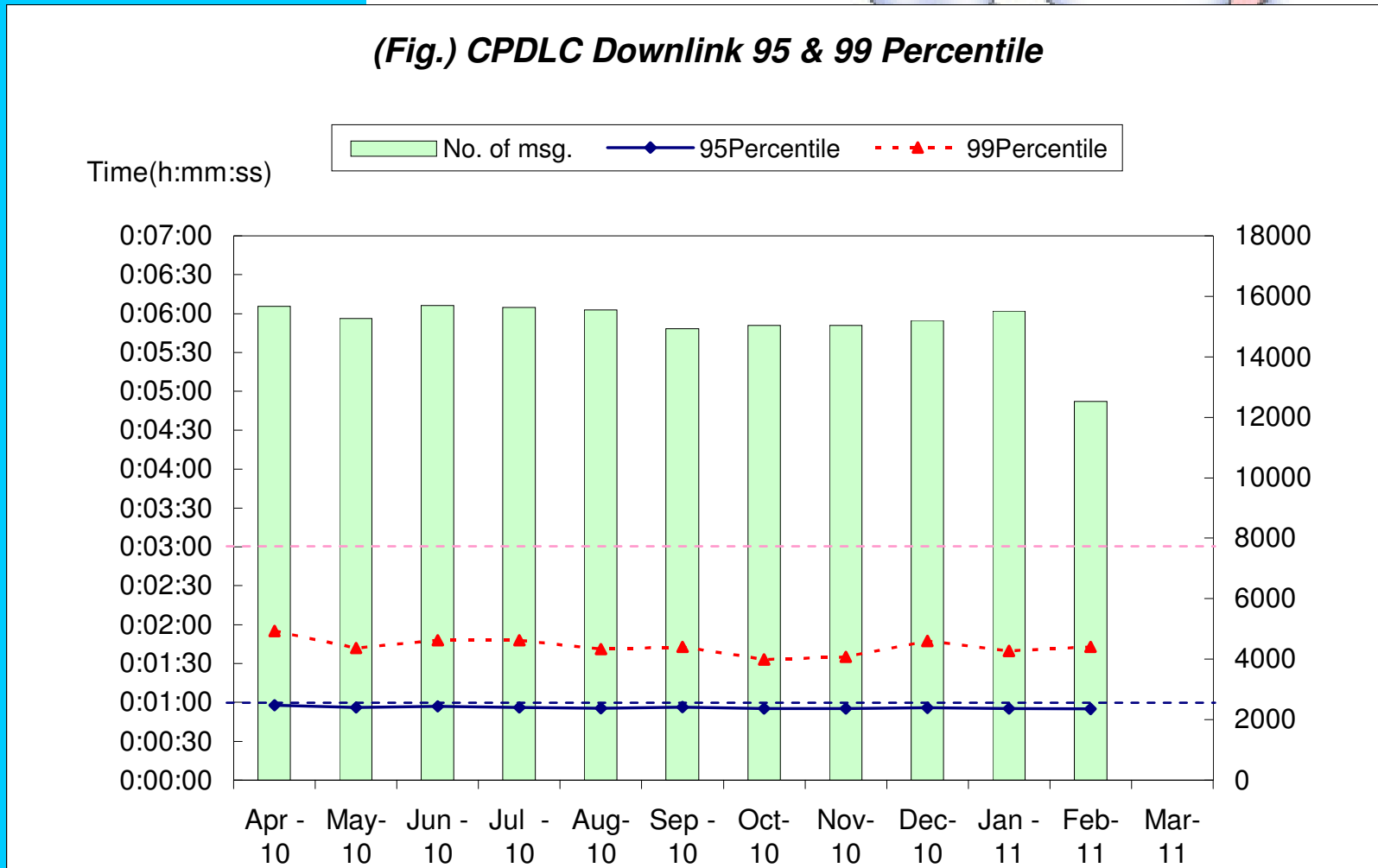
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Chart 5

CPDLC Down-link Performance

<VIET NAM>

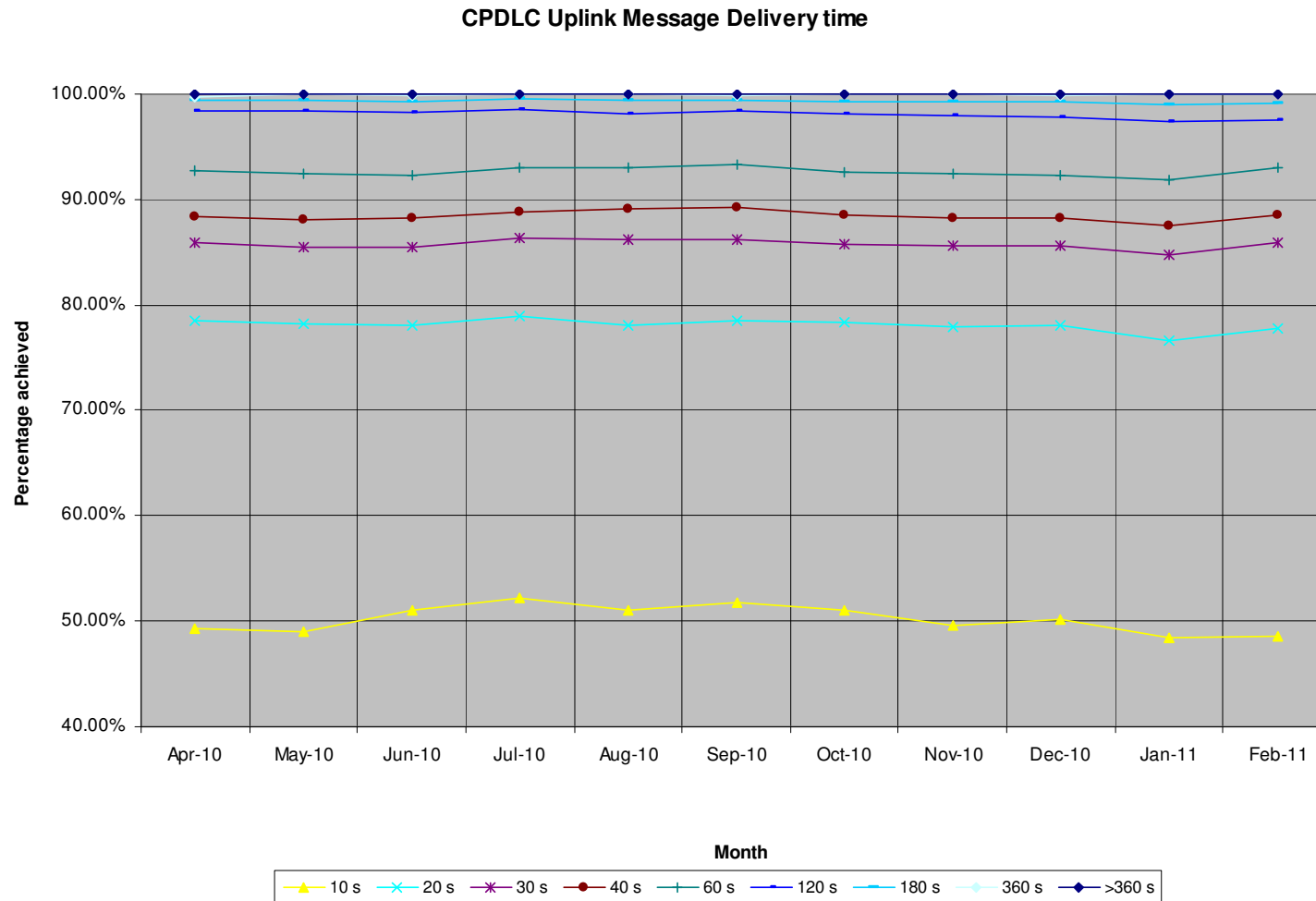
(Fig.) CPDLC Downlink 95 & 99 Percentile



One-way Trip Time: Difference of time-stamps between the avionics and ground systems

CPDLC Up-link Performance

<SINGAPORE>



Round Trip Time: Transit-delay-time from time-stamp of up-link to receipt time of MAS

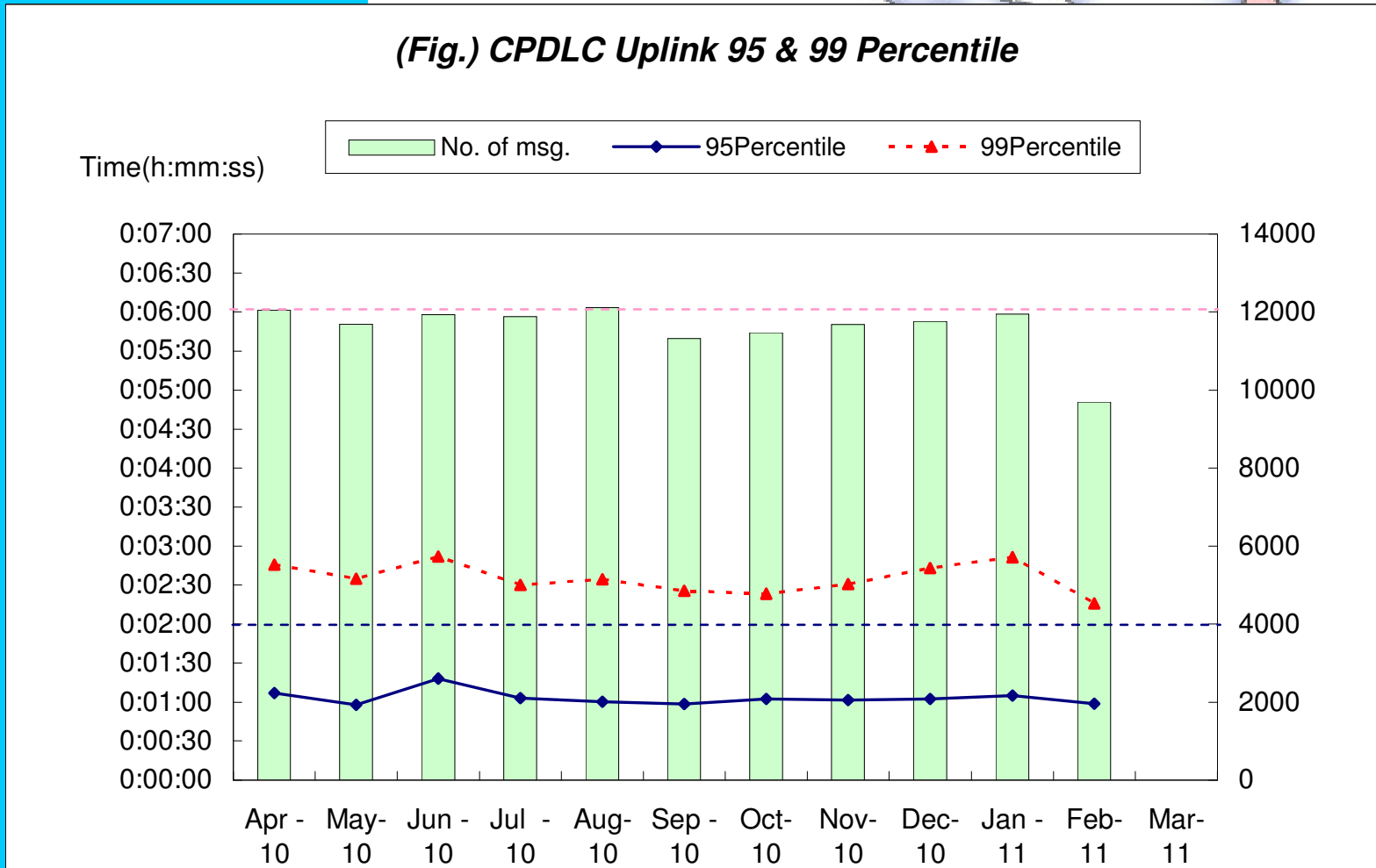
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Chart 7

CPDLC Up-link Performance

<VIET NAM>

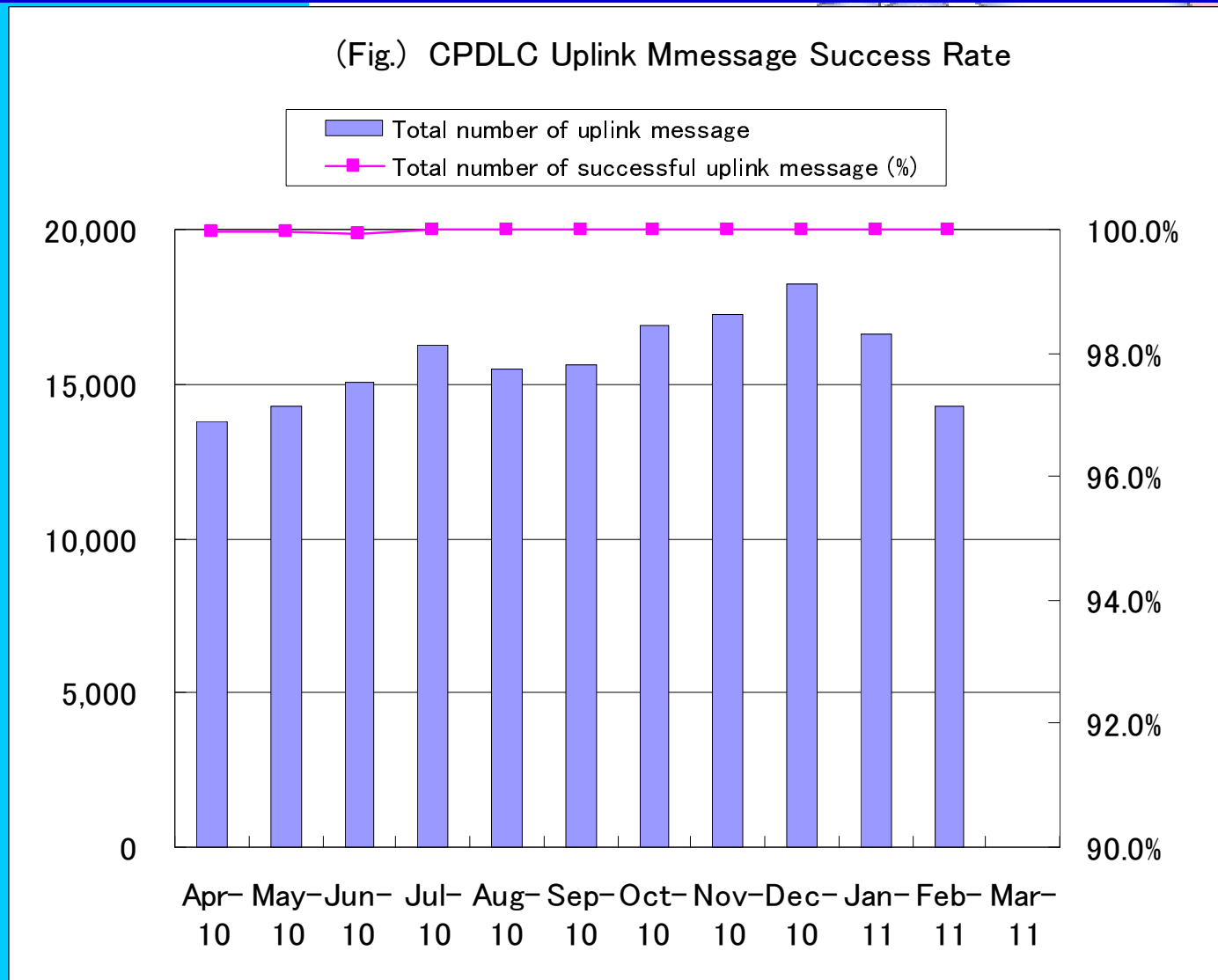
(Fig.) CPDLC Uplink 95 & 99 Percentile



Round Trip Time: Transit-delay-time from time-stamp of up-link to receipt time of MAS

CPDLC Up-link Message Success Rate

<SINGAPORE>

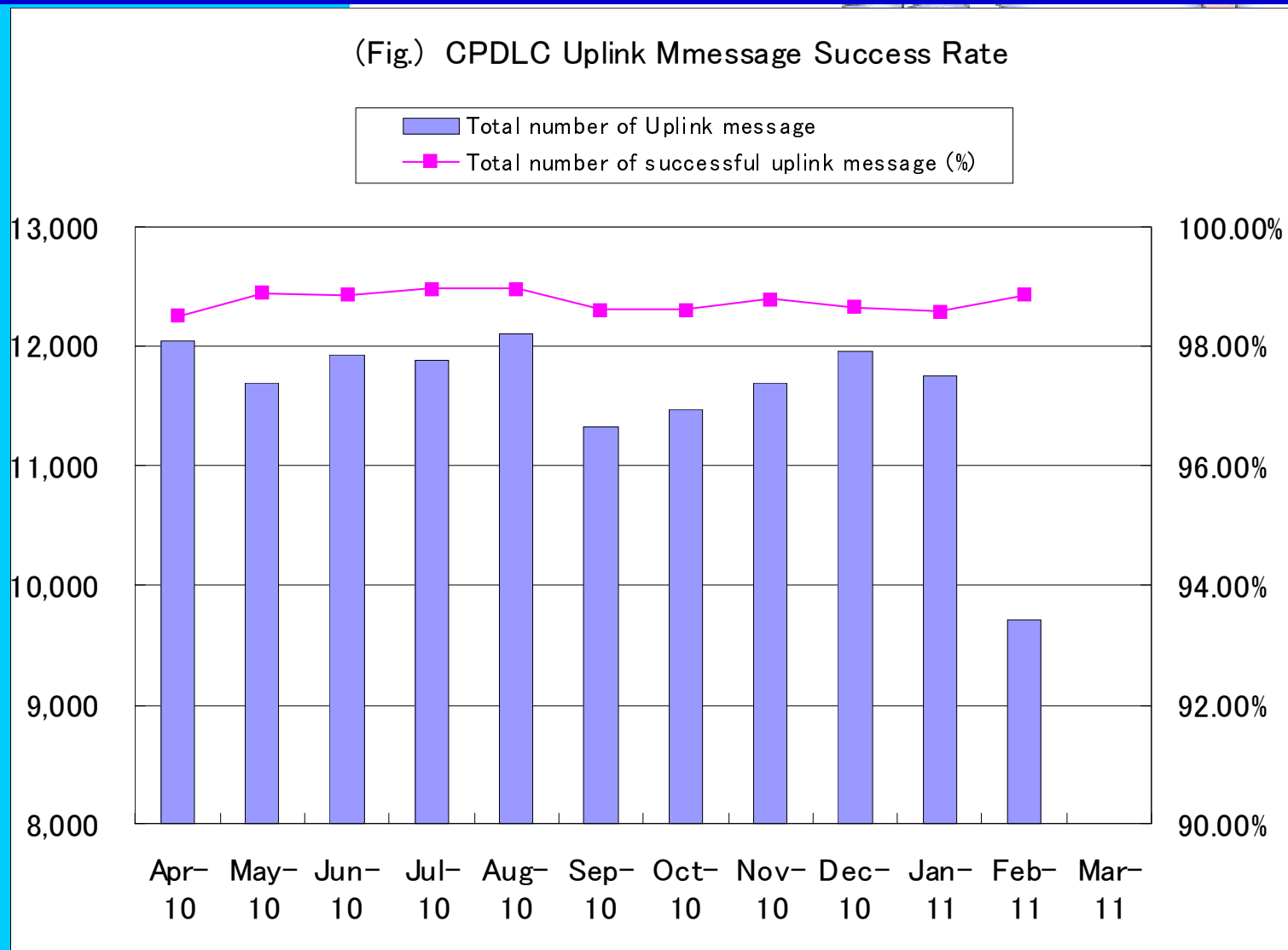


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Chart 9

CPDLC Up-link Message Success Rate

<VIET NAM>



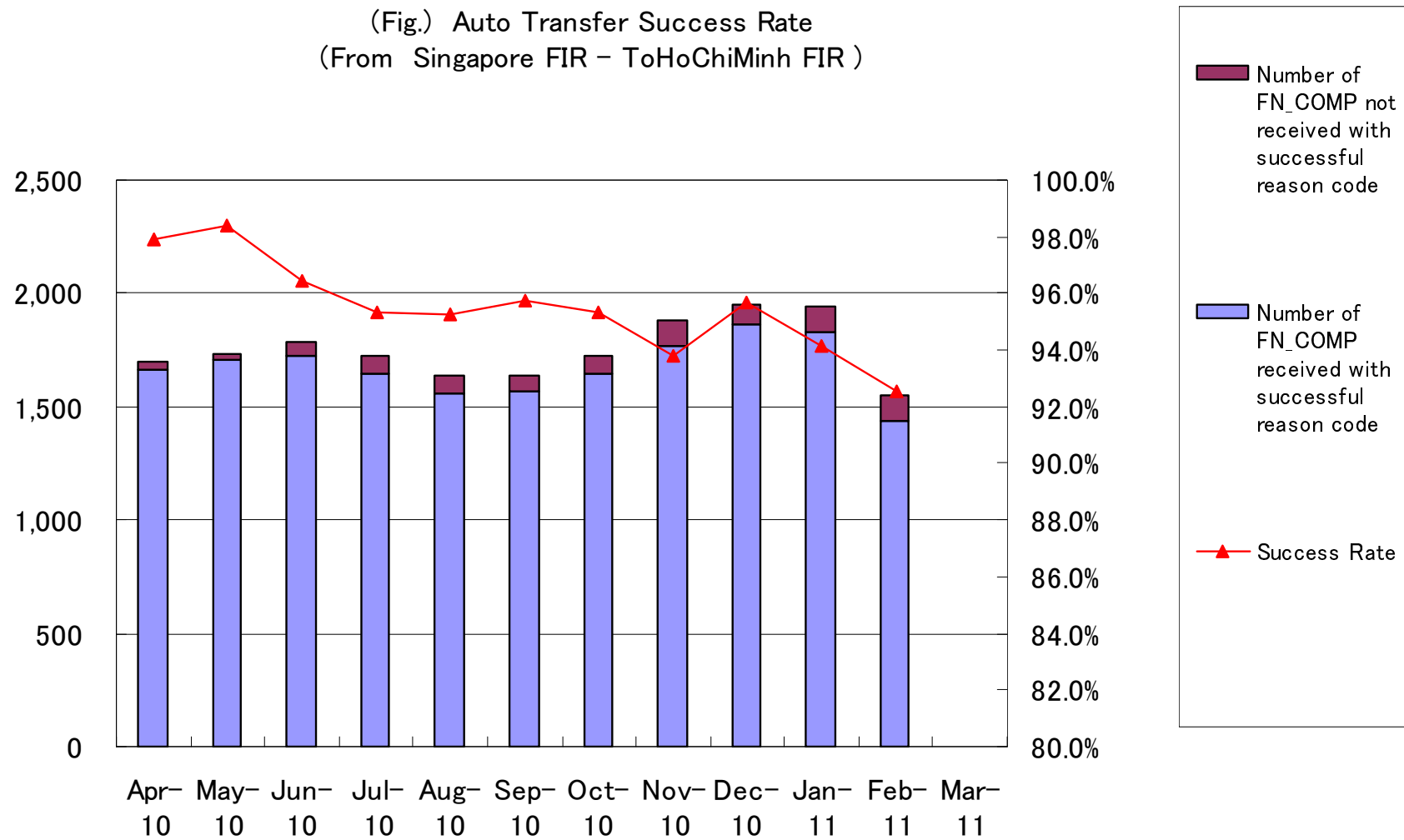
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Chart 10

Auto Transfer Success Rate

<SINGAPORE>

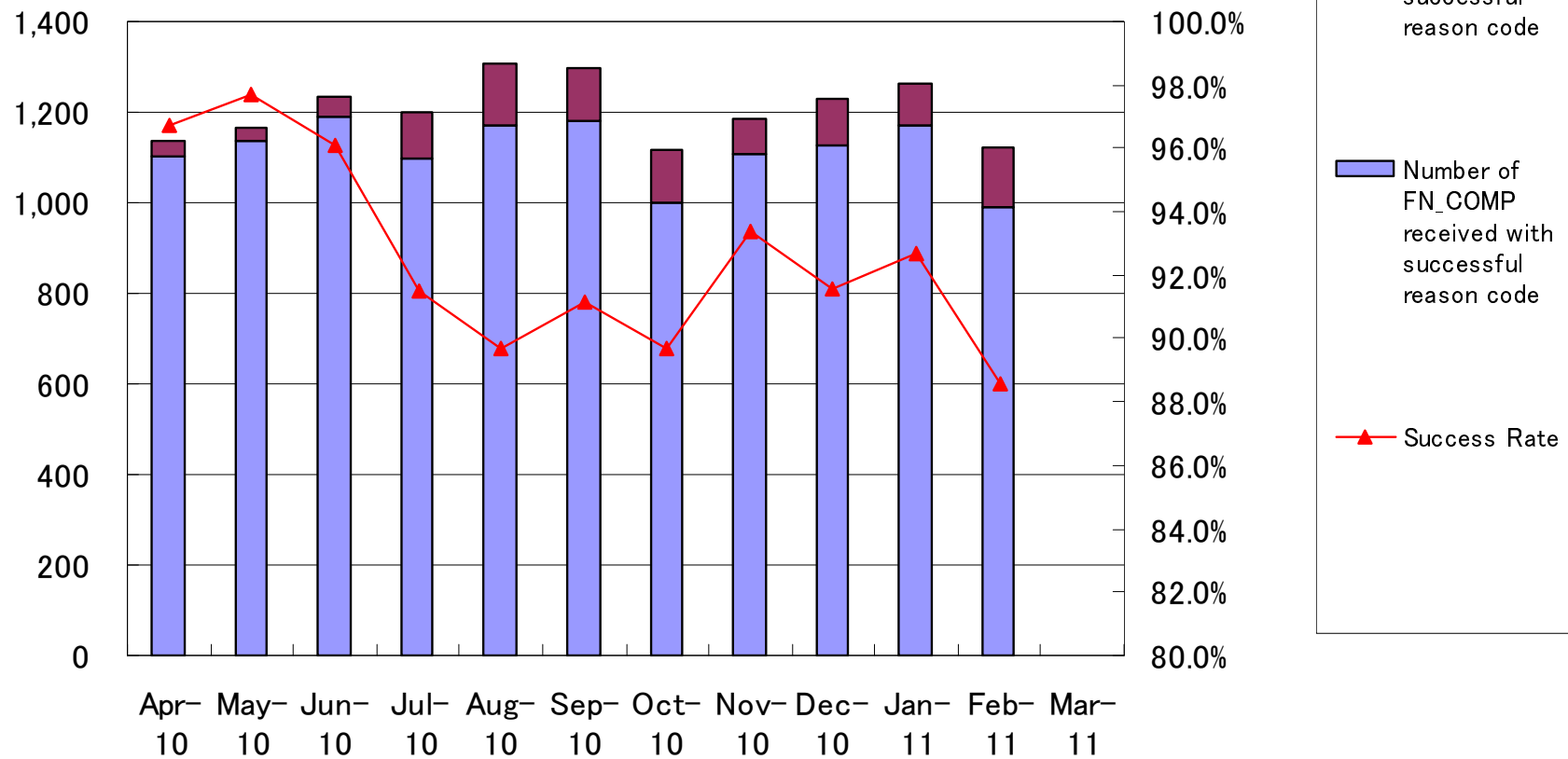
(Fig.) Auto Transfer Success Rate
(From Singapore FIR - ToHoChiMinh FIR)



Auto Transfer Success Rate

<VIET NAM>

(Fig.) Auto Transfer Success Rate
(From HoChiMinh FIR - To Singapore FIR)



2. Problem Reports



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Chart 13

FIT-SEA CRA Activities Since FIT-SEA/10

- **New Problem Reports**
- **Specific reports to be discussed**



New Reports since FIT-SEA/10

PR #	Problem Report Title	Originator	Air/ Ground	Comments/Notes/Description	Status
50036	Unable to up link CPDLC/ADS messages	CAAS	Air/ Ground	Still under investigation	In progress
50037	Unable to up link CPDLC/ADS messages	CAAS	Air/ Ground	Still under investigation	In progress
50038	Unable to up link CPDLC/ADS messages	CAAS	Air/ Ground	Still under investigation	In progress
50039	Incorrect ADS track speed	CAAS		Still under investigation	In progress
50040	Data link disrupted	CAAS	Air/ Ground	Still under investigation	In progress
50041	Data link disrupted	CAAS	Air/ Ground	Still under investigation	In progress
50042	Unable to up link CPDLC/ADS messages	CAAS	Air/ Ground	Still under investigation	In progress
50043	Unable to up link CPDLC/ADS messages	CAAS	Air/ Ground	Still under investigation	In progress

Specific PRs (New)

A map of Southeast Asia with several countries highlighted in red, including Thailand, Laos, Cambodia, and Vietnam.

- 1) Unable to up link CPDLC/ADS messages
(PR50036, PR50037, PR50038 ,PR50042, PR50043)
- 2) Data link disrupted(PR50040,PR50041)
- 3) Incorrect ADS track speed(PR50039)

1) Unable to up link CPDLC/ADS messages



PR Number: 50036, 50037,50038, 50042 ,50043

PR Status: In Progress (Technical)

Problem Report from ATSU: CAAS

<EVENTS>

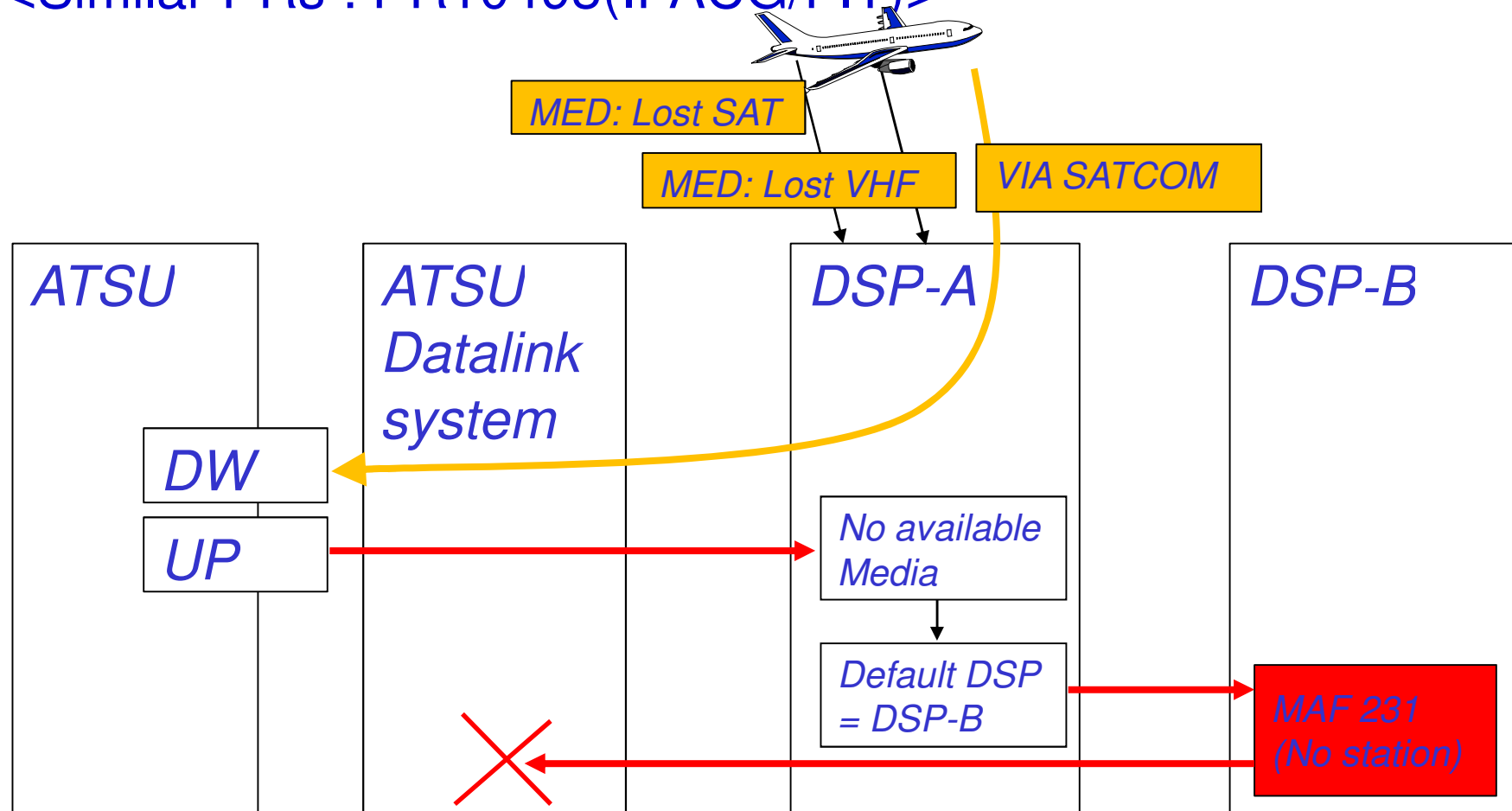
- No response received to ADS/CPDLC up links.
- Message down link conducted normally
- On the case of PR50037,PR50038, the ATSU received a MAF 234(UP INTERCEPT AIRCRAFT NOT LOGGED ON).

<ANALYSIS>

- The problem events occurred near the AKMON.
- AKMON is the vicinity of a VHF data link coverage boundary.
- Data transmission delay/data link disruption tends to occur in the vicinity of VHF coverage boundary area is frequently reported in FIT meeting.
- For detailed investigation, such information as communication media is necessary. Inquiry about detailed logs has been sent to the ATSU.

1) Unable to up link CPDLC/ADS messages

<Similar PRs : PR10493(IPACG/FIT)>



2) Data link disrupted



PR Number: 50040, 50041

PR Status: In Progress (Technical)

Problem Report from ATSU: CAAS

<EVENTS>

- No response received to ADS/CPDLC up links
- No down links observed

<ANALYSIS>

- The problem events occurred near the AKMON.
- AKMON is the vicinity of a VHF data link coverage boundary.
- Data transmission delay/data link disruption tends to occur in the vicinity of VHF coverage boundary area is frequently reported in FIT meeting.
- For detailed investigation, such information as communication media is necessary. Inquiry about detailed logs has been sent to the ATSU.

3) Incorrect ADS track speed



PR Number: 50039

PR Status: In Progress (Technical)

Problem Report from ATSU: CAAS

<EVENTS>

- ADS track indicates “000” speed readout

<ANALYSIS>

- Previously there was a PR about incorrect ADS data reported by the ATSU about the case of ADS ground speed readout was 999knots.
- Past PRs about incorrect ADS position and/or speed were caused by incorrect Intermediate Indent Group data.
- It has been reported that incorrect data are still included in the Intermediate Indent Group.
- ADS reports recorded in the log sent by the ATSU included only the Basic Group part data. For investigation, more detailed log as the one including such data as Intermediate Indent Group is indispensable, which has been asked to the ATSU.

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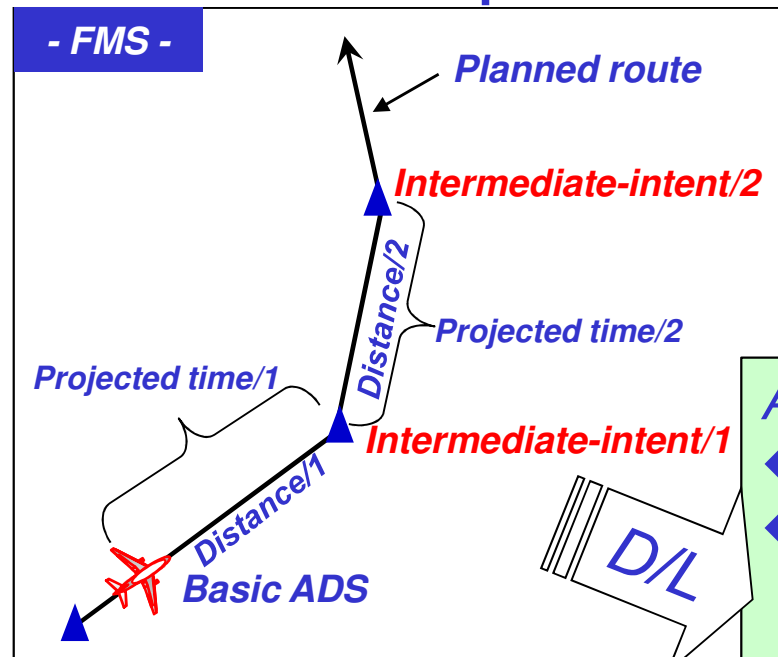


Chart 21

3) Incorrect ADS track speed

<Similar PRs : PR50014(SEACG/FIT-SEA)>

Normal ADS report



ADS report

◆ Basic ADS

◆ Intermediate Intent

▪ Intermediate/1

→ Distance/1, True Track/1, Projected time/1)

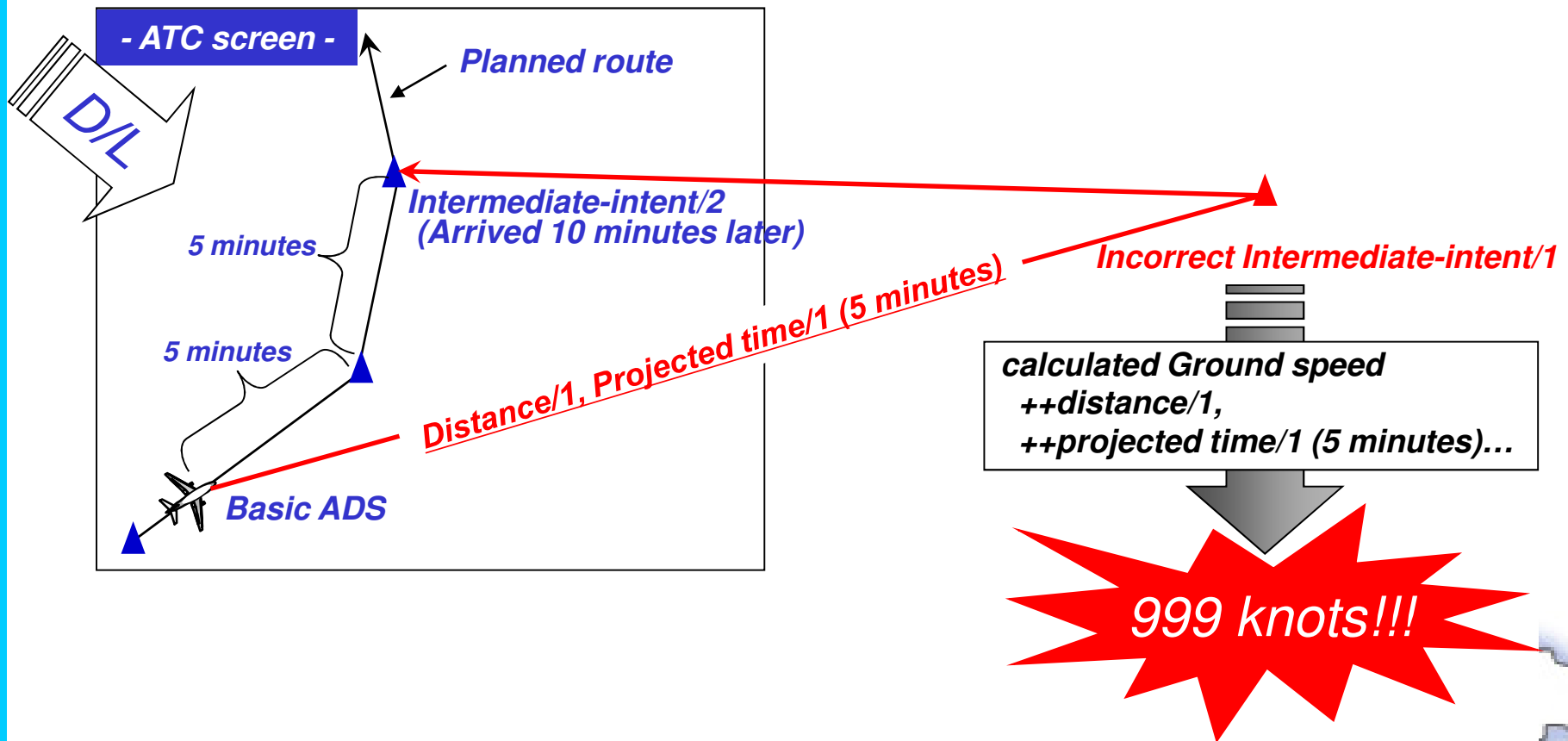
▪ Intermediate/2

→ Distance/2, True Track/2, Projected time/2(6 min))

3) Incorrect ADS track speed

<Similar PRs : PR50014(SEACG/FIT-SEA)>

If the Intermediate Intent is incorrect, the aircraft is displayed as,



Thank you for your attention!



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Chart 24