

# ADS CPDLC TRIAL OPERATIONS IN MANILA FIR

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# PREPARATIONS FOR THE ADS/CPDLC TRIAL OPERATIONS IN MANILA FIR (Phase 1A)

- Coordination Meeting with Philippine Airlines.
  - Presentation of the ADS/CPDLC trial operations in Manila.
- Output:
  - PAL expressed interest to join the ADS/CPDLC trial operation in Manila FIR.



# PREPARATIONS FOR THE ADS/CPDLC TRIAL OPERATIONS IN MANILA FIR (Phase 1A)

- ADS/CPDLC Refresher Course Training for En route Controllers was conducted . (May-Nov.2009)
- Consultation with JICA expert – (Feb. 3-March 5, 2010)
  - Outputs:
    - Draft of the ADS/CPDLC trial operational plan was made.
    - Operational procedures for the trial were formulated.

# PREPARATIONS FOR THE ADS/CPDLC TRIAL OPERATIONS IN MANILA FIR (Phase 1A)

- Installation of ADS/CPDLC Trial Equipment.  
ADS/CPDLC function is part of the new Manila ACC ATC system.
- System validation test was conducted from May 7 -14, 2010.



# PREPARATIONS FOR THE ADS/CPDLC TRIAL OPERATIONS IN MANILA FIR (Phase 1A)

- Continuation of the system validation test was conducted simultaneously with the hands-on training of ATCs. (August-October 2010)



# PREPARATIONS FOR THE ADS/CPDLC TRIAL OPERATIONS IN MANILA FIR (Phase 1A)

- Sent invitations and operational procedures to Airline Companies.
- Coordination with OAK, Naha and ATMC.
- ATC operational procedures and schedules posted.
- Forwarded to Manila AMS (HF) Memorandum on coordination procedures.

# ADS CPDLC TRIAL OPERATIONS PHASE 1-A East Oceanic Airspace

## **DATA LINK AIRSPACE**

**ATS Routes** – A582/A590/  
G578/M501/G467

## **COMMUNICATIONS –**

Primary - HF

Secondary - CPDLC

## **DATE /TIME of Operations**

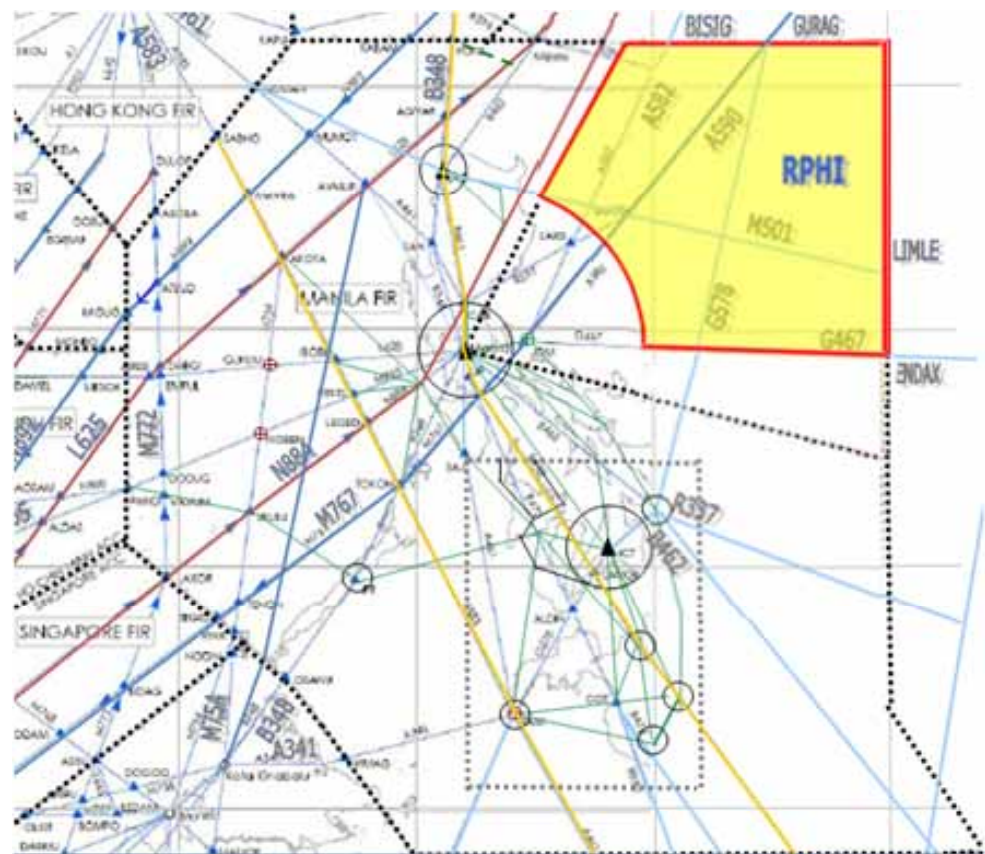
Nov. 8, 2010 – Feb. 11, 2011

0300UTC-0900UTC

## **PARTICIPATING**

## **AIRLINES**

ANA, MAS, PAL, SIA



# ADS CPDLC TRIAL OPERATIONS PHASE 1-B East Oceanic Airspace

## **DATA LINK AIRSPACE**

**ATS Routes** – A582/A590/  
G578/M501/G467

## **COMMUNICATIONS –**

Primary - CPDLC

Secondary - HF

## **DATE /TIME of Operations**

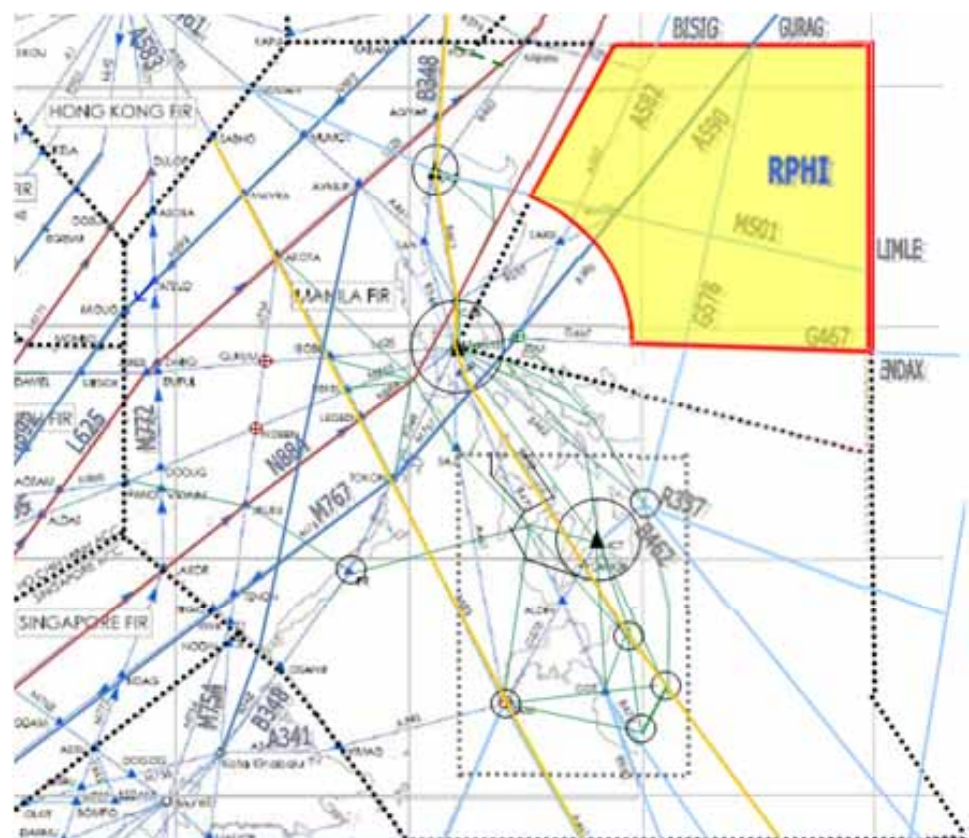
Feb. 14, 2011 – up to present

0100UTC-1300UTC

## **PARTICIPATING**

## **AIRLINES**

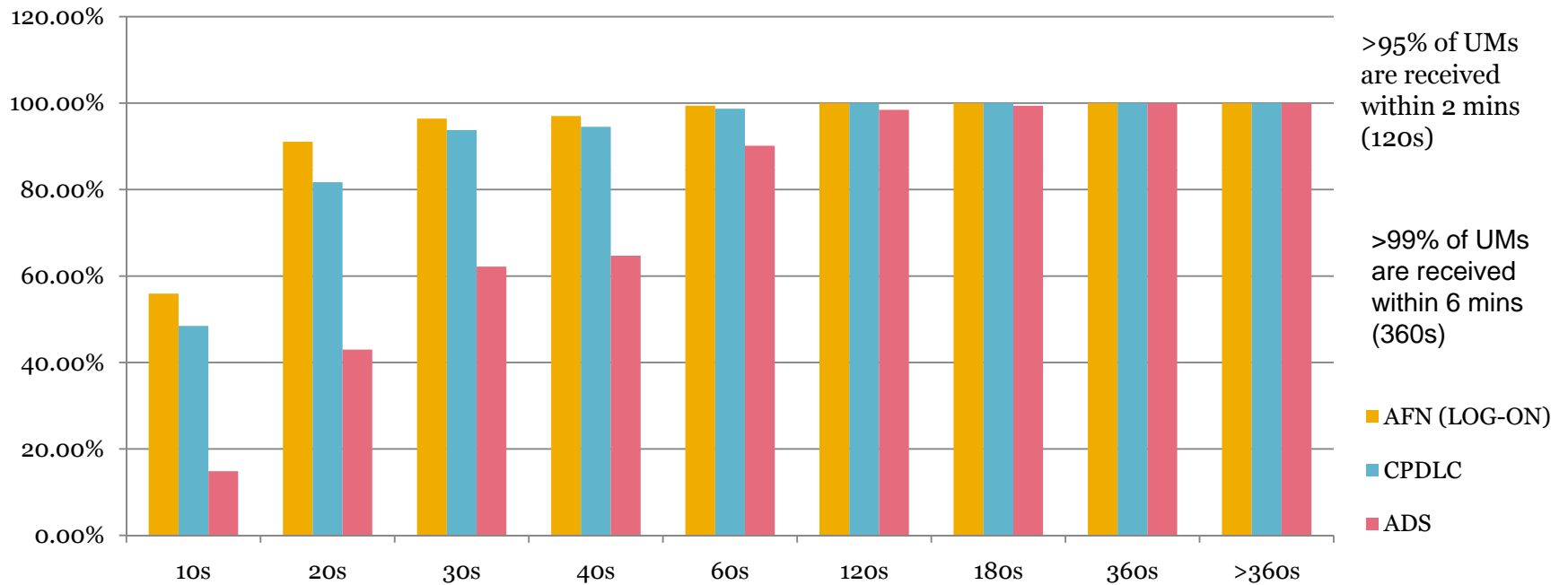
ANA, MAS, PAL, SIA, DAL,  
FDX, UPS





# SYSTEM PERFORMANCE

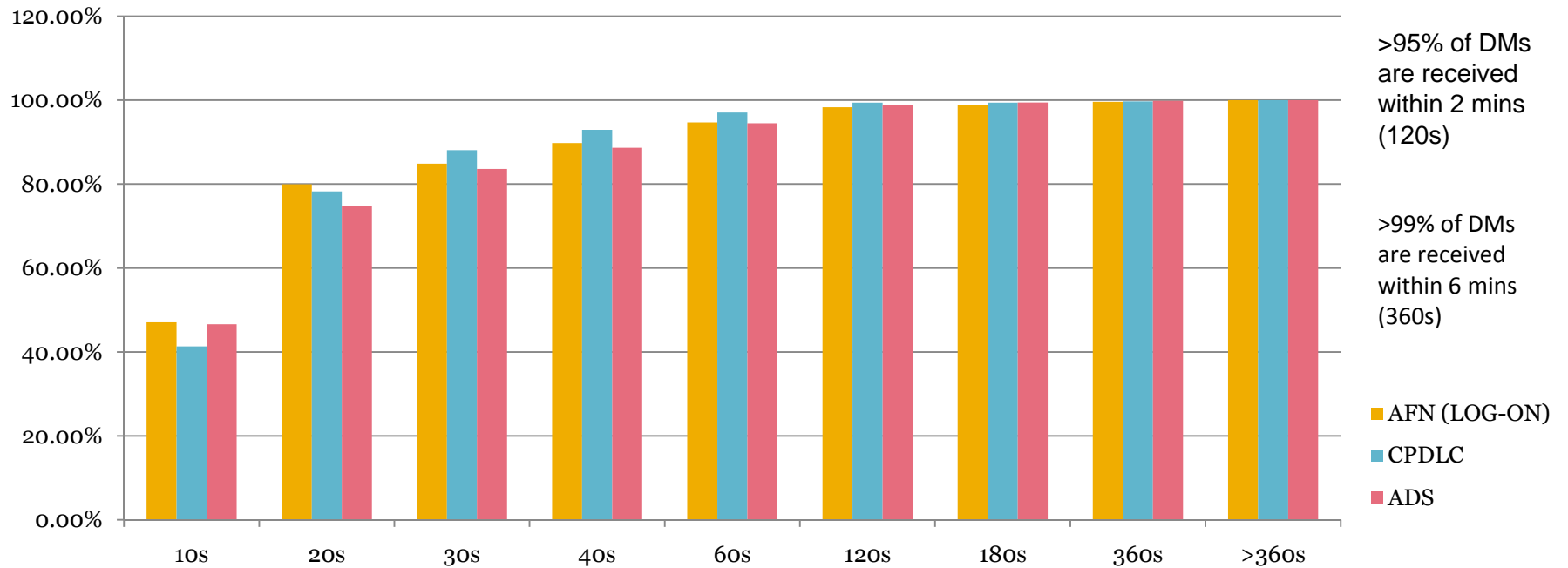
## Uplink Message Delivery Time (November 2010)



UPLINK MESSAGE DELIVERY TIME	10s	20s	30s	40s	60s	120s	180s	360s	>360s
AFN (LOG-ON)	55.95%	91.07%	96.43%	97.02%	99.40%	100%	100%	100%	100%
CPDLC	48.45%	81.72%	93.78%	94.52%	98.72%	100%	100%	100%	100%
ADS	14.84%	42.97%	62.19%	64.69%	90.16%	98.44%	99.38%	100%	100%

# SYSTEM PERFORMANCE

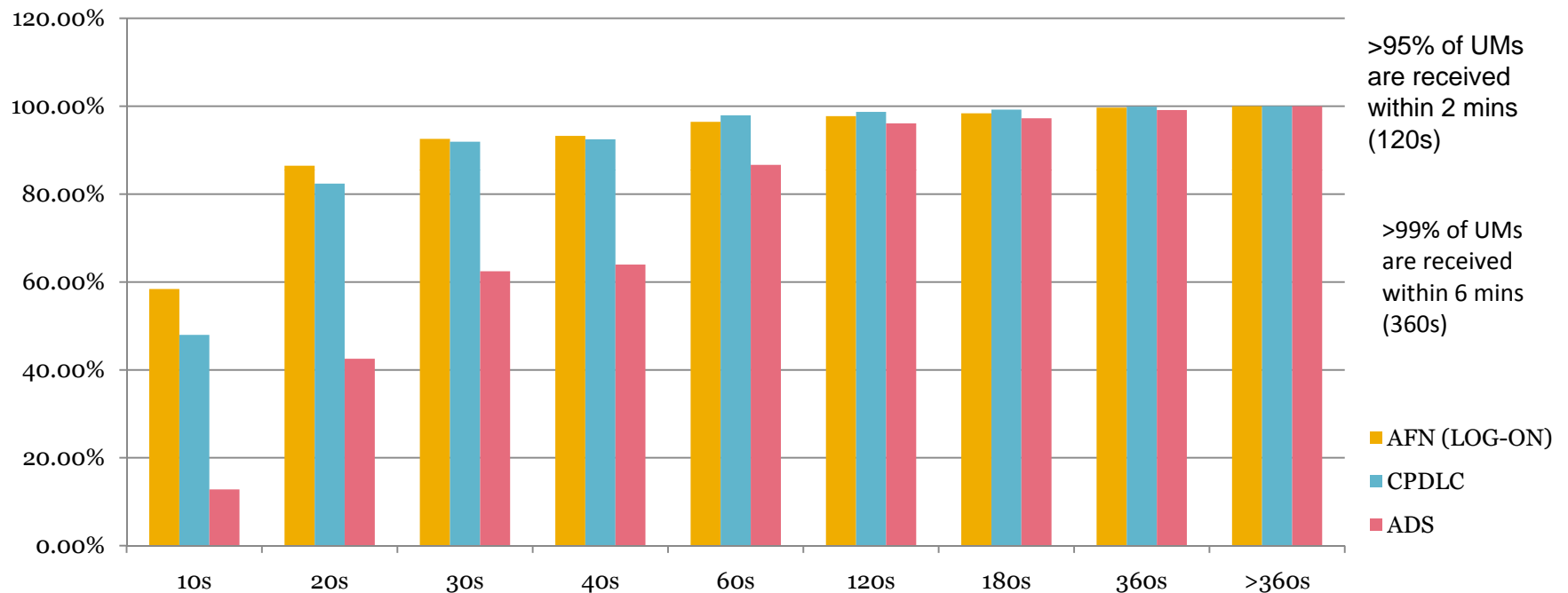
## Downlink Message Delivery Time (November 2010)



DOWNLINK MESSAGE DELIVERY TIME	10s	20s	30s	40s	60s	120s	180s	360s	>360s
AFN (LOG-ON)	47.07%	79.96%	84.88%	89.79%	94.71%	98.30%	98.87%	99.62%	100%
CPDLC	41.32%	78.24%	88.09%	92.94%	97.06%	99.41%	99.41%	99.71%	100%
ADS	46.60%	74.69%	83.60%	88.66%	94.48%	98.88%	99.46%	99.85%	100%

# SYSTEM PERFORMANCE

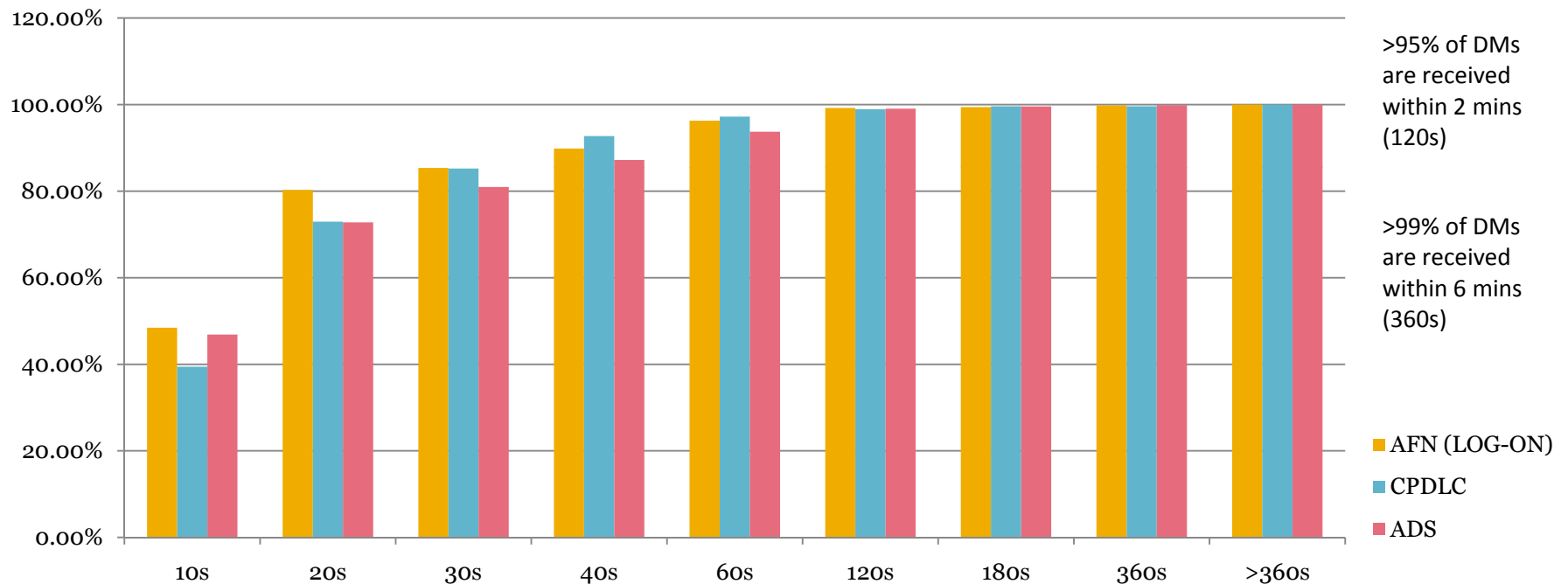
## Uplink Message Delivery Time (December 2010)



UPLINK MESSAGE DELIVERY TIME	10s	20s	30s	40s	60s	120s	180s	360s	>360s
AFN (LOG-ON)	58.39%	86.45%	92.58%	93.23%	96.45%	97.74%	98.39%	99.68%	100%
CPDLC	47.98%	82.40%	91.91%	92.46%	97.92%	98.69%	99.23%	99.89%	100%
ADS	12.81%	42.53%	62.46%	63.97%	86.65%	96.09%	97.24%	99.11%	100%

# SYSTEM PERFORMANCE

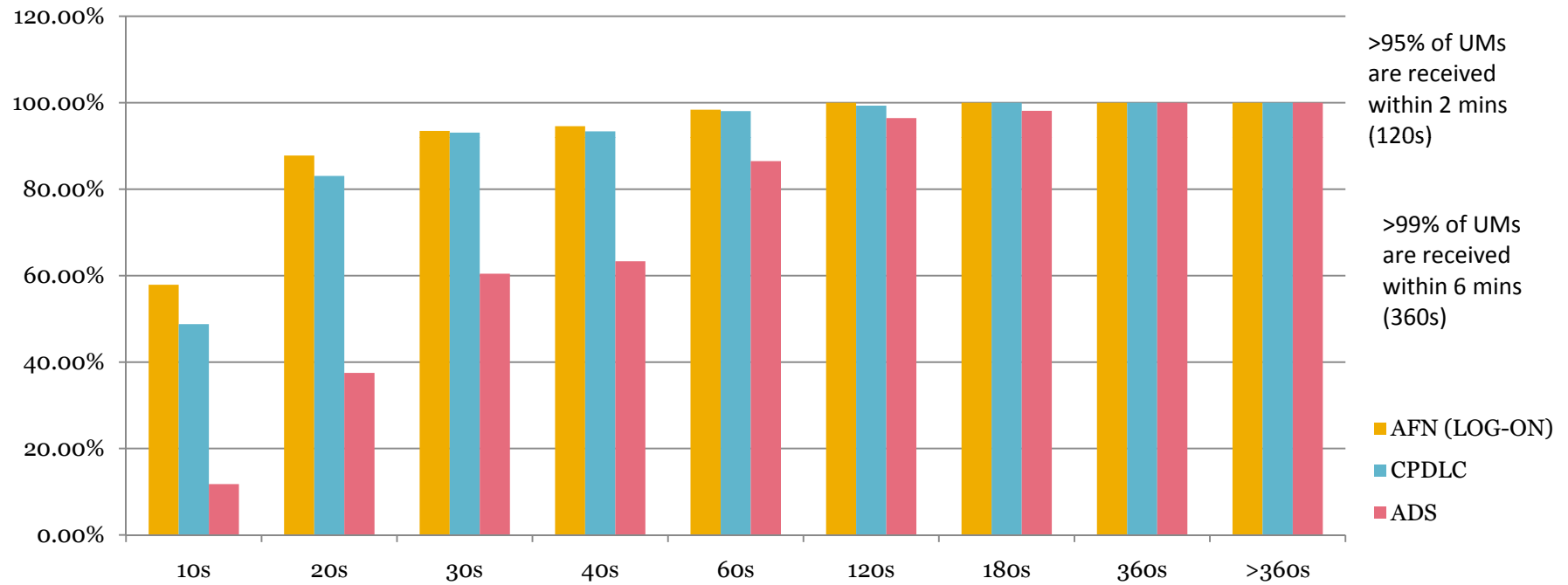
## Downlink Message Delivery Time (December 2010)



DOWNLINK MESSAGE DELIVERY TIME	10s	20s	30s	40s	60s	120s	180s	360s	>360s
AFN (LOG-ON)	48.44%	80.27%	85.35%	89.84%	96.29%	99.22%	99.41%	99.80%	100%
CPDLC	39.44%	72.94%	85.22%	92.71%	97.22%	98.94%	99.62%	99.62%	100%
ADS	46.87%	72.80%	80.96%	87.19%	93.74%	99.06%	99.59%	99.88%	100%

# SYSTEM PERFORMANCE

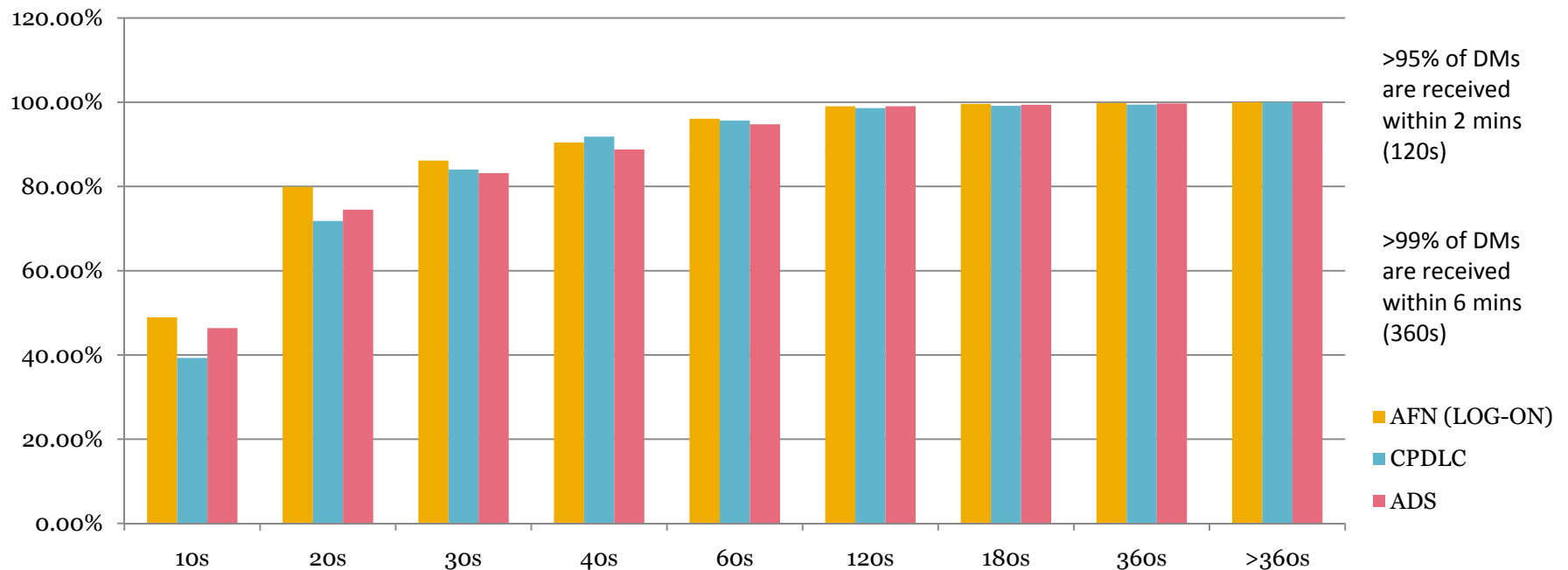
## Uplink Message Delivery Time (January 2011)



UPLINK MESSAGE DELIVERY TIME	10s	20s	30s	40s	60s	120s	180s	360s	>360s
AFN (LOG-ON)	57.88%	87.77%	93.48%	94.57%	98.37%	100%	100%	100%	100%
CPDLC	48.78%	83.06%	93.09%	93.38%	98.05%	99.32%	100%	100%	100%
ADS	11.77%	37.51%	60.45%	63.32%	86.49%	96.45%	98.11%	100%	100%

# SYSTEM PERFORMANCE

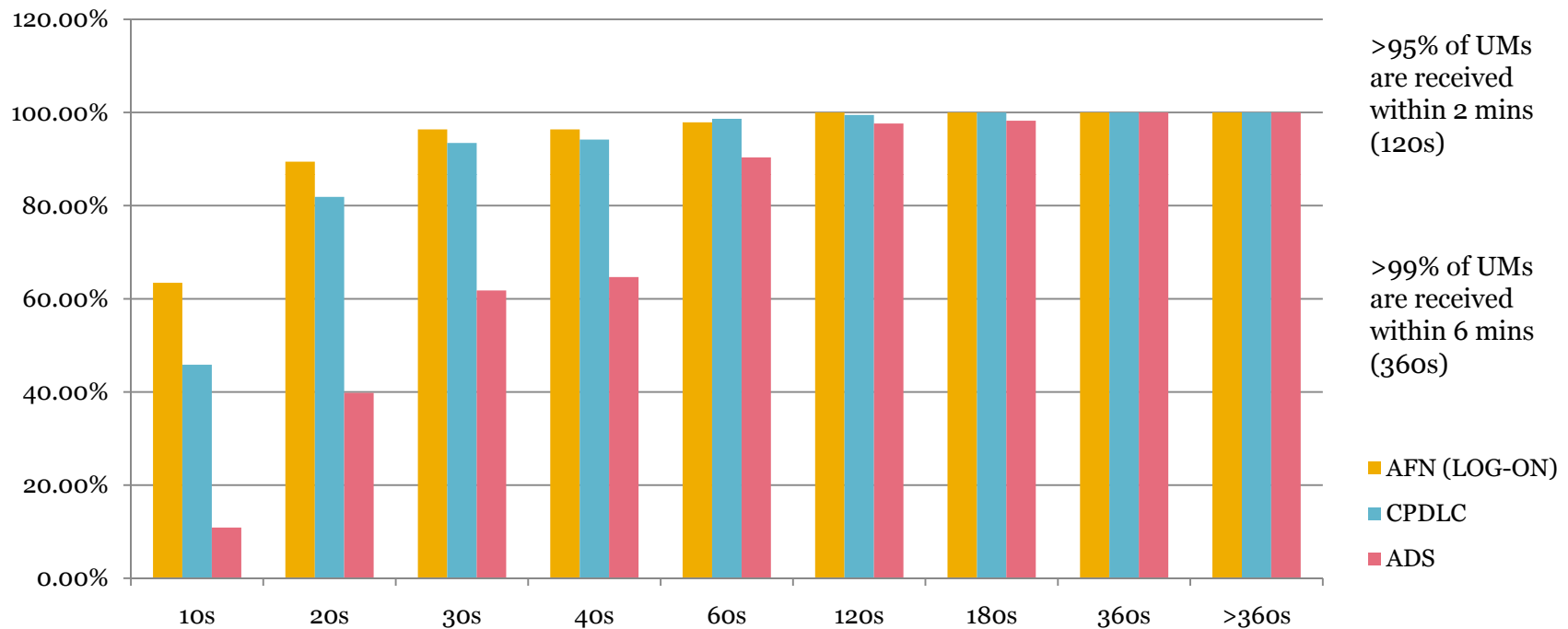
## Downlink Message Delivery Time (January 2011)



DOWNLINK MESSAGE DELIVERY TIME	10s	20s	30s	40s	60s	120s	180s	360s	>360s
AFN (LOG-ON)	48.93%	79.92%	86.16%	90.45%	96.10%	99.03%	99.61%	99.81%	100%
CPDLC	39.29%	71.82%	84.01%	91.85%	95.65%	98.60%	99.15%	99.46%	100%
ADS	46.38%	74.49%	83.16%	88.79%	94.76%	99.04%	99.42%	99.71%	100%

# SYSTEM PERFORMANCE

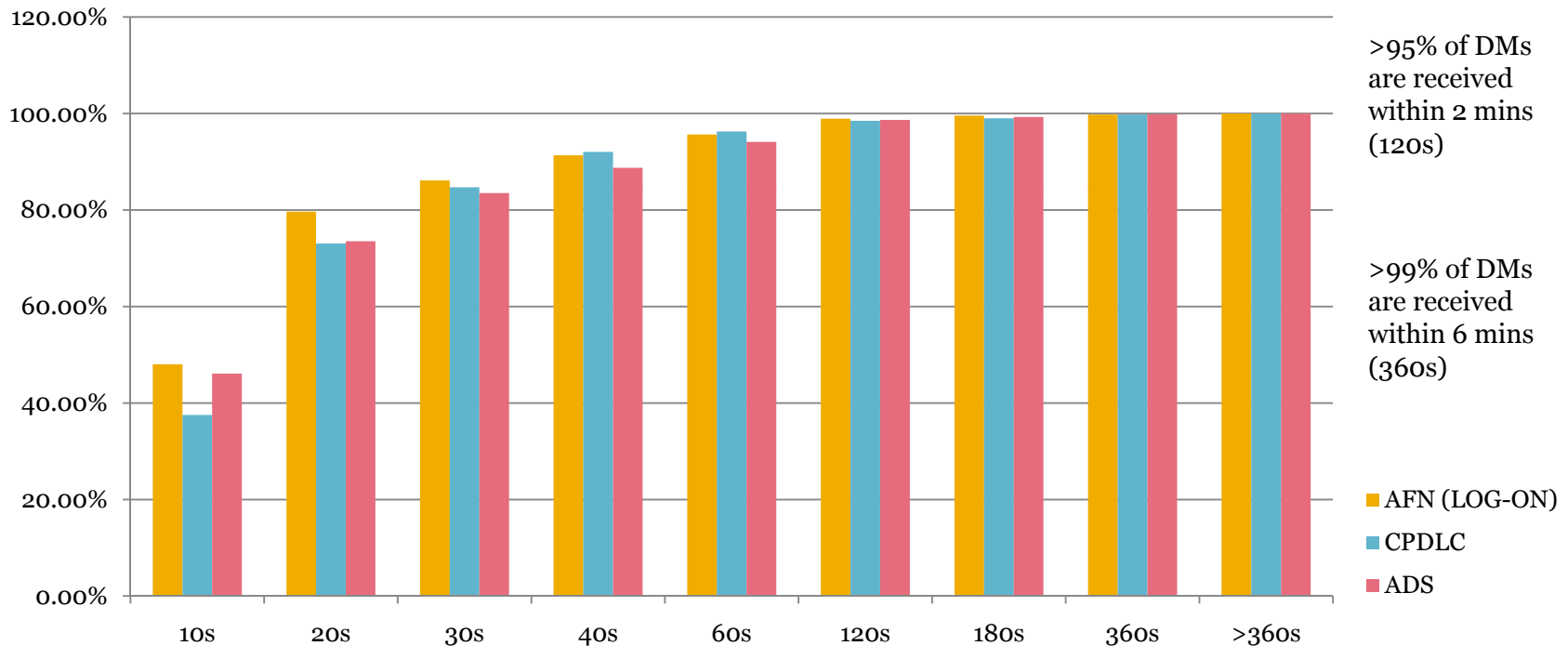
## Uplink Message Delivery Time (February 2011)



UPLINK MESSAGE DELIVERY TIME	10s	20s	30s	40s	60s	120s	180s	360s	>360s
AFN (LOG-ON)	63.44%	89.43%	96.37%	96.37%	97.89%	100%	100%	100%	100%
CPDLC	45.84%	81.88%	93.47%	94.20%	98.63%	99.47%	100%	100%	100%
ADS	10.90%	39.81%	61.79%	64.67%	90.36%	97.63%	98.22%	100%	100%

# SYSTEM PERFORMANCE

## Downlink Message Delivery Time (February 2011)

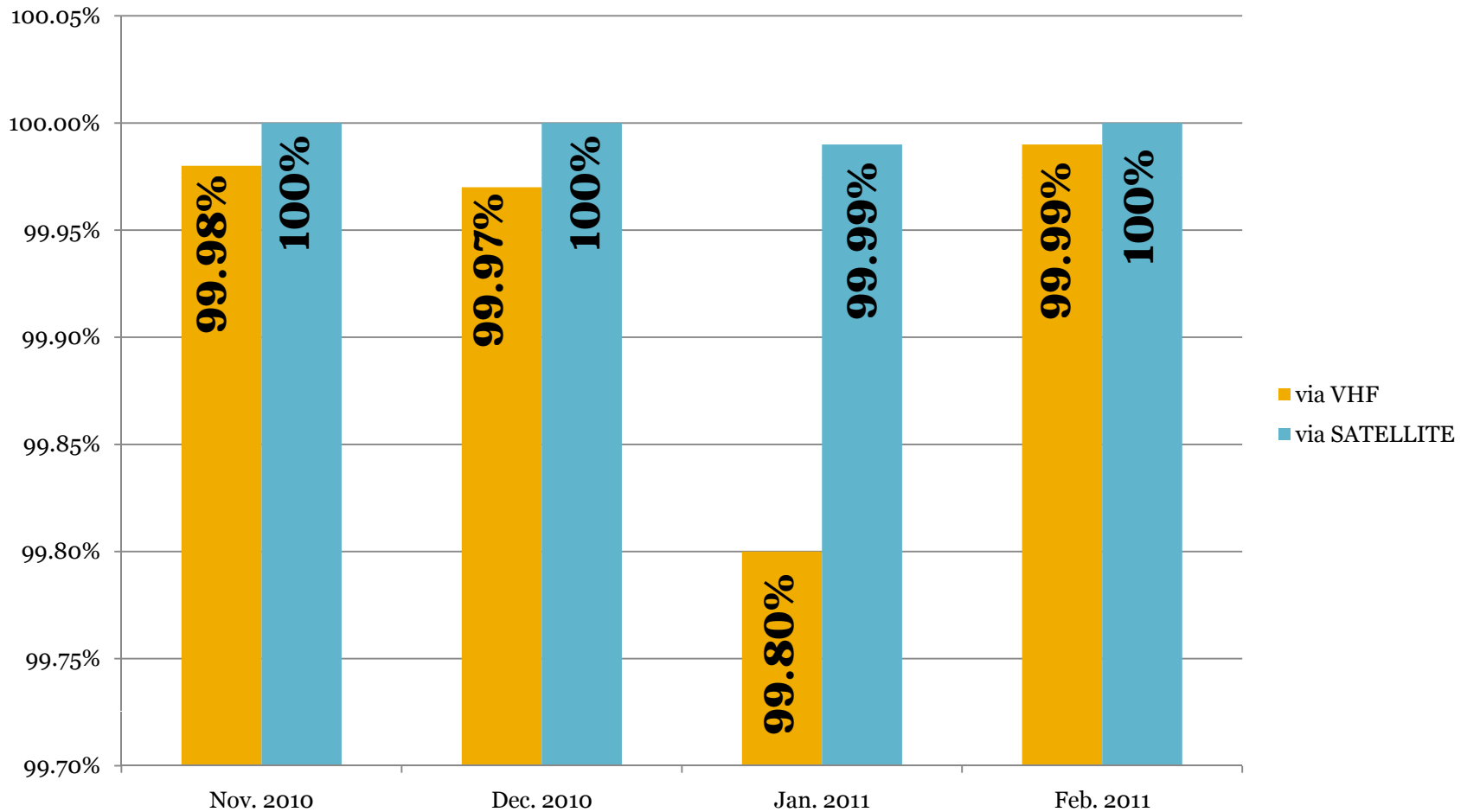


DOWNLINK MESSAGE DELIVERY TIME	10s	20s	30s	40s	60s	120s	180s	360s	>360s
AFN (LOG-ON)	48.05%	79.65%	86.15%	91.34%	95.67%	98.92%	99.57%	99.78%	100%
CPDLC	37.51%	73.08%	84.73%	92.06%	96.29%	98.50%	99.03%	99.82%	100%
ADS	46.09%	73.52%	83.50%	88.77%	94.11%	98.69%	99.30%	99.85%	100%



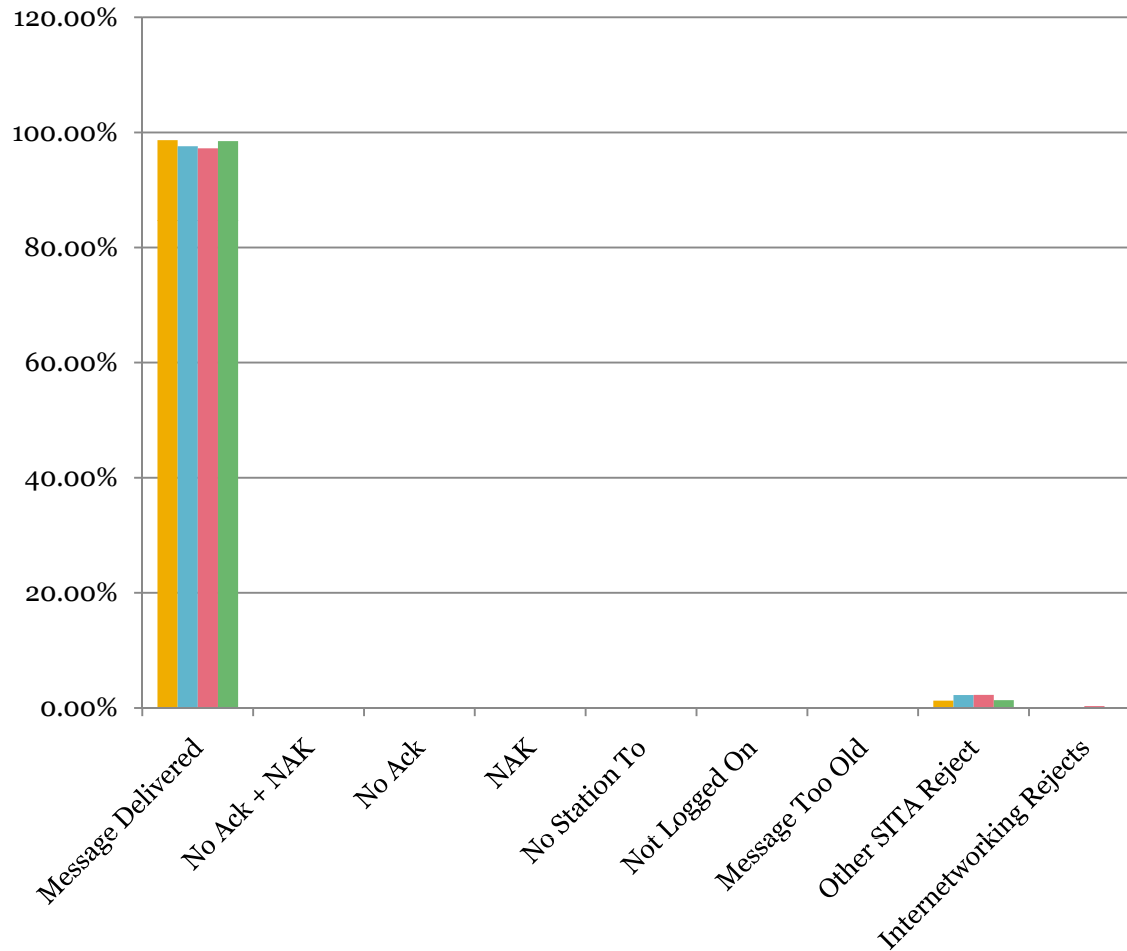
# SYSTEM PERFORMANCE

Data Link Service Availability (November 2010-February 2011)



# SYSTEM PERFORMANCE

## Data Link Service Reliability (November 2010-February 2011)



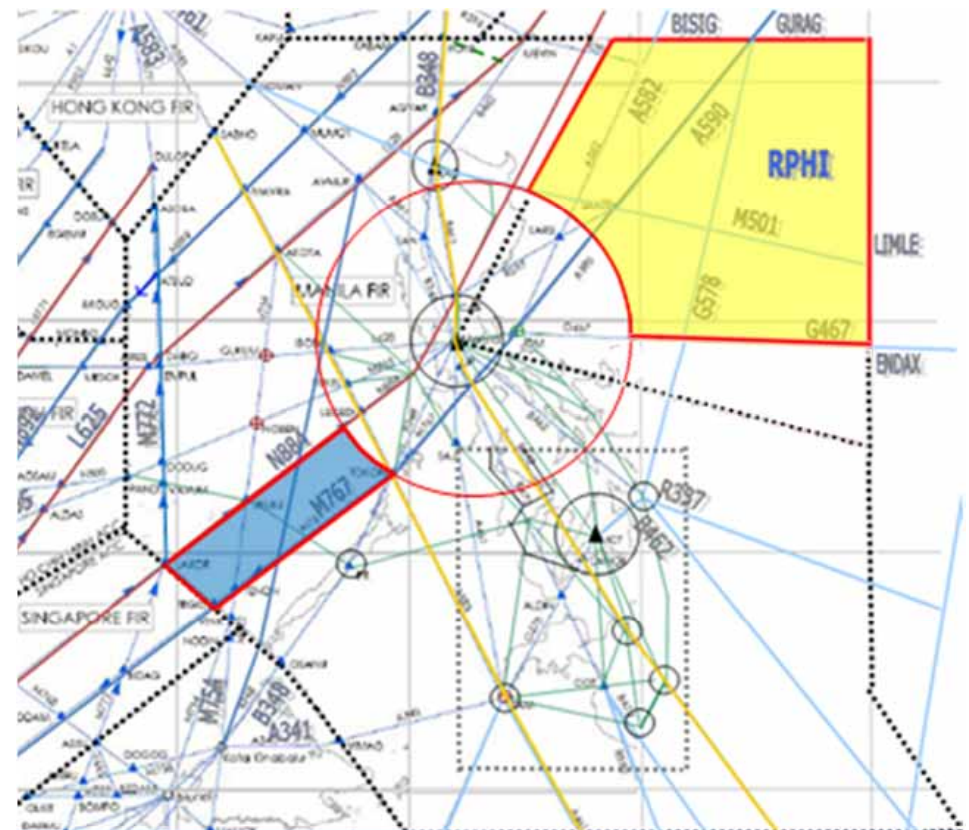
SUCCESS/REJECT RATE	Nov. 2010	Dec. 2010	Jan. 2011	Feb. 2011
Message Delivered	98.67%	97.60%	97.25%	98.50%
No Ack + NAK	0.00%	0.00%	0.00%	0.03%
No Ack	0.00%	0.00%	0.00%	0.03%
NAK	0.00%	0.00%	0.00%	0.00%
No Station To	0.00%	0.15%	0.15%	0.00%
Not Logged On	0.00%	0.00%	0.00%	0.00%
Message Too Old	0.00%	0.00%	0.00%	0.00%
Other SITA Reject	1.28%	2.23%	2.27%	1.34%
Internetworking Rejects	0.05%	0.03%	0.33%	0.14%

■ Nov. 2010  
■ Dec. 2010  
■ Jan. 2011  
■ Feb. 2011

# ADS CPDLC TRIAL OPERATIONS

## PHASE 2-A East Oceanic + South China Sea

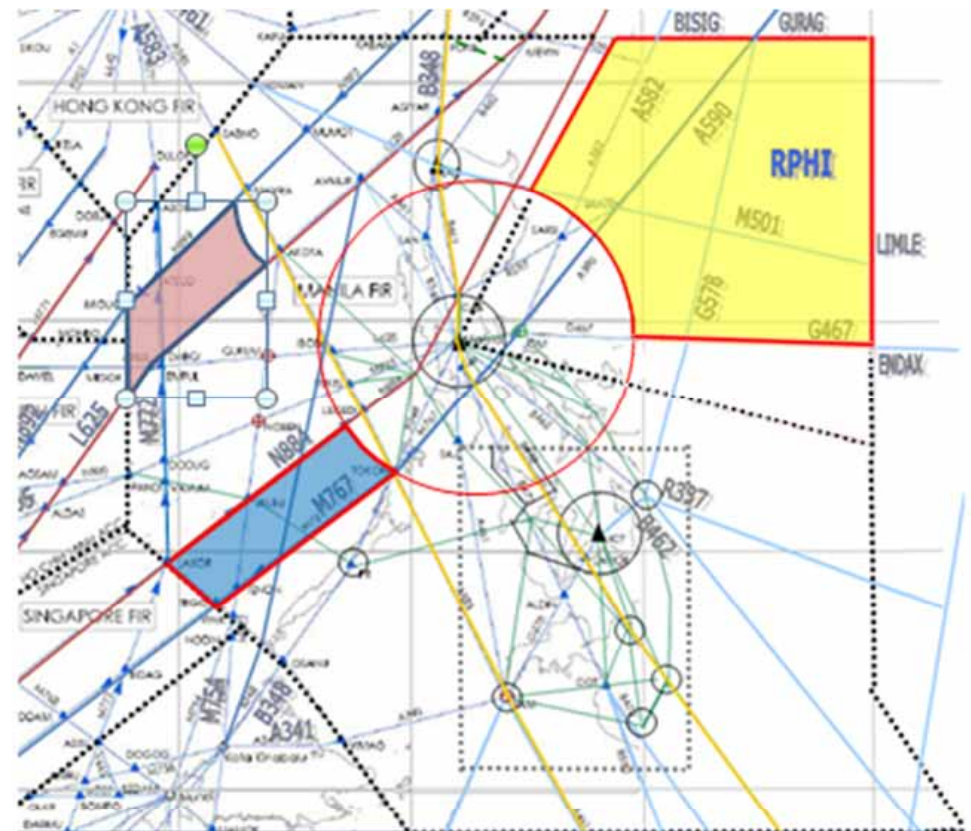
- **DATA LINK AIRSPACE**  
**ATS Routes** – A582/A590/  
G578/M501/G467  
- (West Sector)  
N884/M767/M772
- **COMMUNICATIONS**
  - Primary - CPDLC
  - Secondary - HF
- **DATE /TIME of Operations**
  - TBD
  - 0100UTC-1300UTC
- **PARTICIPATING AIRLINES**
  - All FANS-1/A equipped aircraft



# ADS CPDLC TRIAL OPERATIONS

PHASE 2-B East Oceanic + South China Sea + North Parallel Routes

- **DATA LINK**
  - AIRSPACE (East Sector)  
ATS Routes – A582/A590/  
G578/M501/G467
  - (West Sector)  
ATS Routes N884/M767/  
M772
  - (North Sector)  
ATS Routes L625/N892
- **COMMUNICATIONS**
  - Primary - CPDLC
  - Secondary - HF
- **DATE /TIME of Operations**
  - TBD
- **PARTICIPATING AIRLINES**
  - All FANS-1/A equipped aircraft.



# DOCUMENTS PREPARED

- **Supplementary LOA**

Draft Supplementary LOA has already been prepared. It will be finalized as soon as discussions with adjacent ACCs are done.  
(Attachment B)

- **AIC Supplement**

- As a requirement for the trial involving the participation of all FANS 1/A equipped aircraft, Manila drafted an AIC Supplement.  
(Attachment C)