AIDC Interoperability Tests

for Hong Kong New ATMS with Manila ATMS

1. Background

The Hong Kong new ATM System (ATMS) comes with fully integrated AIDC functionality. Hong Kong would like to arrange with Manila ACC to conduct AIDC technical and interoperability test prior to the new ATMS being put into live operation.

Subject to test result and mutual agreement, a plan for the commissioning of AIDC operations between Hong Kong and Manila can be formulated.

2. Scope

AIDC interoperability test for Hong Kong new ATMS with Manila ATMS is to be conducted. Selected AIDC messages (EST, ACP, LAM and LRM) are to be tested, using live or pseudo data, matching with both ACC's concept of operation.

3. Prerequisite

Technical test between Hong Kong new ATMS and Manila ATMS has been completed to ensure CRC algorithm is matched and connection is established. The full set of AIDC messages supported by the ATMS/Manila ATMS other than those selected for operation use will also be covered in the technical test.

4. Test Configuration

AFTN Address for AIDC Test

Hong Kong ATMS **VHHH[redacted]**

Manila ATMS **RPHI[redacted]**

CRC-CCITT Scheme

XMODEM (NULL_INIT)

Protocol and Message Type

AIDC Version: Version 3.0

Message Type: **EST, ACP, LAM, LRM**

Note: Block Level and Speed should not be used in EST

Figure 1 below summaries the AIDC interoperability test configuration:

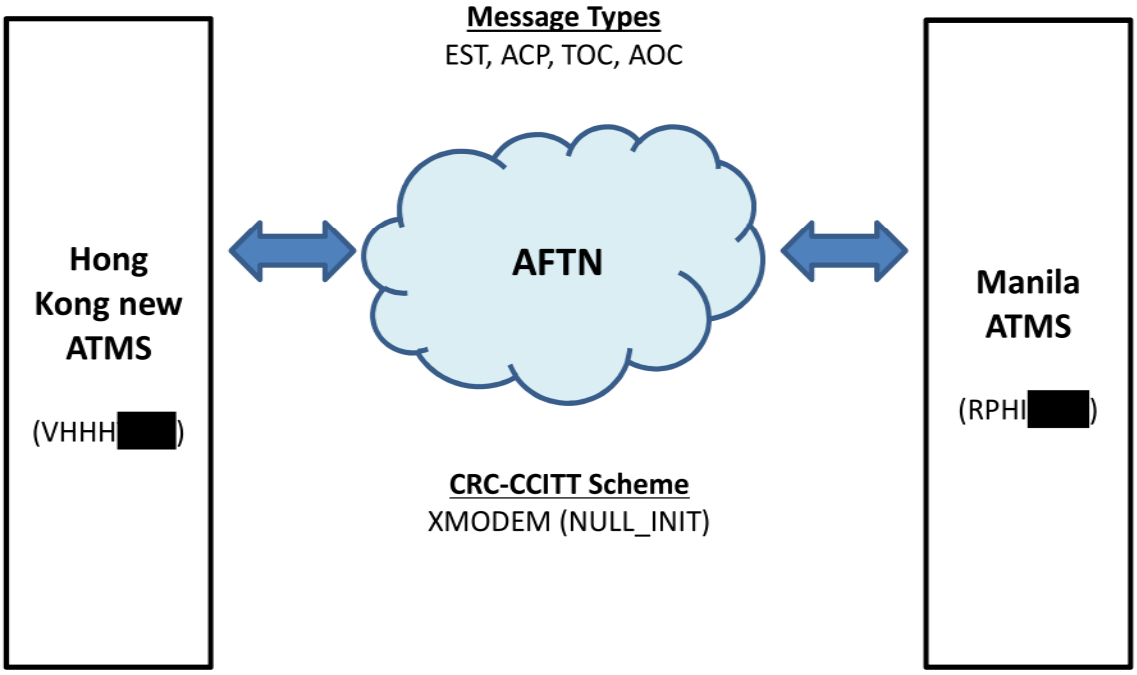

Figure 1 – AIDC Interoperability Test Configuration

5. Hong Kong New ATMS AIDC Operation and Parameters

- Accountability Timer (Application Response Time Out): 45 seconds
- No. of Retransmission upon Application Time Out: 2
- EST is sent automatically, at an adaptable time prior to Estimate Time Over (ETO) the FIR boundary fix for the flight. For test purposes, this adaptable time will be set to 16 minutes and the system check cycle is 1 minute , therefore it can be expected that the EST will be sent between 15 to 16 minutes prior to the flight's ETO the transfer fix.

- Upon receiving an EST, the system will respond with an ACP if the details match with a valid flight plan, otherwise a LRM will be sent.

- 'Revision' and coordination (such as weather deviation, non-FLAS/non-standard level requests etc.) are expected to be conducted verbally through the IASC circuit as per the current practice.

- Hong Kong would like to bring up the following scenarios and the corresponding proposed procedures for discussion. The aim is to reach consensus between Hong Kong and Manila for a mutually agreed operation procedure which could match both systems capability and mode of operation.

  (a) For a flight towards Manila ACC, if prior coordination is required (e.g. HK requests to use a non-standard level) before an EST is sent to Manila, HK will coordinate with Manila using IASC. If the request is approved by Manila, HK prefers to 'transfer' the flight to Manila verbally and no EST would be sent. Would this proposed workflow be acceptable to Manila?

  (b) In reverse, for a flight towards HK ACC, if prior coordination is required before an EST is sent to HK, if the request is approved by HK, HK prefers Manila to 'transfer' the flight to HK verbally and HK would manually enter the 'transfer' information into HK's new ATMS. Is it feasible for Manila not to send any EST to HK in this case?

6. Propose Test Schedule

Technical Test: 28 December 2015

Interoperability Test: 29 December 2015 (also as a backup for Technical Test)

7. Contact Points

Interoperability Test

	Hong Kong
Name	[redacted]
Telephone	[redacted]
Mobile (viber)	[redacted]
Email	[redacted]

	Manila	
Name	[redacted]	[redacted]
Telephone	[redacted]	[redacted]
Mobile (viber)	[redacted]	[redacted]
Email	[redacted]	[redacted]

Technical

	Manila
Name	[redacted]
Telephone	[redacted]
Mobile (viber)	[redacted]
Email	[redacted]

	Hong Kong	
Name	[redacted]	[redacted]
Telephone	[redacted]	[redacted]
Mobile (viber)	[redacted]	[redacted]
Email	[redacted]	[redacted]

8. Interoperability Test Procedure

- The test scenarios include inbound, outbound and overflights via NOMAN, SABNO and ASOBA under various situations.

- The proposed test scenarios use pseudo flight plans. Hong Kong new ATMS has live flight plan and surveillance data feeds and would prefer to use target of opportunity at the time of testing. If target of opportunity is not available, Hong Kong can still use pseudo flight plans as detailed in the test cases below.

- The Test Conductor / Point of Contact (POC) of Manila and Hong Kong shall log in the remarks box the time (HHMMSS in UTC) of each message being sent or received for AIDC messages latency checking.

- Effective and instantaneous communication is required during the AIDC test.

- Hong Kong suggests using generally available instant message applications such as Whatsapp (most prefer), Line, WeChat, Skype etc. between the POCs during the AIDC test for communication. As per Manila's suggestion, viber will be used.

8.1 Departure from VHHH to RPLL via NOMAN

Event Triggered by VHHH ACC	Event Triggered by Manila ACC	Confirmation	Remarks/Result
(FPL-TEST1-IS-A333/H-SDE3GHIJ4J5RWYZ/HB1-VHHH0200 -N0483F370 OCEAN V4 NOMAN A461 AVMUP W16 OLIVA OLI1A-RPLL0131 RPLC -PBN/A1B1C1D1O1S1 NAV/GBAS COM/CPDLC DOF/xxxxxx REG/RPC3343 EET/RPHI0029 SEL/LQEG PER/C)			
8.1.1 EST sent to MNL ACC		Coordinate with MNL's POC if **EST** message was received.	
	8.1.2 LAM sent to VHHH.	Coordinate with VHHH's POC if **LAM** message was received.	
	8.1.3 ACP sent to VHHH ACC	Coordinate with VHHH's POC if **ACP** message was received.	
8.1.4 LAM sent to MNL ACC		Coordinate with MNL's POC if **LAM** message was received.	

8.2 Departure from RPLL to VHHH via NOMAN

Event Triggered by VHHH ACC	Event Triggered by MNL ACC	Confirmation	Remarks/Result
(FPL-TEST2-IS-A320/M-SDFGHIRWY/H-RPLL0200 -N0451F340 CAB1A CAB A461 NOMAN V531 BETTY-VHHH0152 VMMC -PBN/A1B1C1D1O1S2 NAV/GBAS SBAS DOF/xxxxxx REG/RPC3271 EET/VHHK0103 SEL/LSJP PER/C RMK/TCAS EQUIPPED)			
	8.2.1 EST sent to VHHH ACC	Coordinate with VHHH's POC if **EST** message was received.	
8.2.2 LAM sent to MNL ACC		Coordinate with MNL's POC if **LAM** message was received.	
8.2.3 ACP sent to MNL ACC		Coordinate with MNL's POC if **ACP** message was received.	
	8.2.4 LAM sent to VHHH ACC	Coordinate with MNL's POC if **LAM** message was received.	

8.3 Overflight Transiting VHHK and RPHI via SABNO

Event Triggered by VHHH ACC	Event Triggered by MNL ACC	Confirmation	Remarks/Result
(FPL-TEST3-IS-A320/M-SDFGHIRWYZ/LB1-ZGSZ0200 -N0465F350 SIERA DCT ROCCA DCT SKATE V5 SABNO/N0461F370 A583 AKOTA M754 VINIK M522 NODIN DCT ALBIT DCT KAPRI DCT UBMIK DCT VJN DCT-WBKK0249 WBKL WBKS -PBN/A1B1C1D1O1T1 NAV/ABAS COM/AMDS DOF/xxxxxx REG/9MAQN EET/VHHK0004 ZGZU0005 VHHK0010 RPHI0049 WSJC0212 WBFC0215 SEL/ELQR CODE/7502AD PER/C RMK/TCAS EQUIPPED)			
8.3.1 EST sent to MNL ACC		Coordinate with MNL's POC if **EST** message was received.	
	8.3.2 LAM sent to VHHH.	Coordinate with VHHH's POC if **LAM** message was received.	
	8.3.3 ACP sent to VHHH ACC	Coordinate with VHHH's POC if **ACP** message was received.	
8.3.4 LAM sent to MNL ACC		Coordinate with MNL's POC if **LAM** message was received.	

8.4 Overflight Transiting RPHI and VHHK via ASOBA

Event Triggered by VHHH ACC	Event Triggered by MNL ACC	Confirmation	Remarks/Result
(FPL-TEST4-IS-A332/H-SDE2E3FGHIJ2J4M1RWXYZ/LB1-WIII0100 -N0477F360 AMBOY P648 OSUKA/N0471F300 M772 ASISU/M077F300 M772 ASOBA/N0464F300 M772 DULOP/N0451F260 M771 DUMOL J103 PICTA DCT CH B330 TAMOT/K0837S0790 W68 IDUMA IDUO1A-ZGGG0422 ZSAM -PBN/A1B1D1L1 NAV/AUSEP DOF/xxxxxx REG/PKGPJ EET/WBFC0114 WSJC0156 RPHI0228 VHHK0325 ZGZU0406 SEL/GMCL OPR/GARUDA PER/C RMK/TCAS EQUIPPED)			
	8.4.1 EST sent to VHHH ACC	Coordinate with VHHH's POC if **EST** message was received.	
8.4.2 LAM sent to MNL ACC		Coordinate with MNL's POC if **LAM** message was received.	
8.4.3 ACP sent to MNL ACC		Coordinate with MNL's POC if **ACP** message was received.	
	8.4.4 LAM sent to VHHH ACC	Coordinate with VHHH's POC if **LAM** message was received.	

8.5 Departure from RPLL to VHHH, EST sent by Manila, HK has no FPL and returns LRM.

Event Triggered by VHHH ACC	Event Triggered by MNL ACC	Confirmation	Remarks/Result
(FPL-TEST5-IS-A320/M-SDFGHIRWY/H-RPLL0200 -N0451F340 CAB1A CAB A461 NOMAN V531 BETTY-VHHH0152 VMMC -PBN/A1B1C1D1O1S2 NAV/GBAS SBAS DOF/xxxxxx REG/RPC3271 EET/VHHK0103 SEL/LSJP PER/C RMK/TCAS EQUIPPED)			
	8.5.1 EST sent to VHHH ACC	Coordinate with VHHH's POC if **EST** message was received.	
8.5.2 LRM sent to MNL ACC		Coordinate with MNL's POC if **LRM** message was received.	

8.6 Departure from VHHH to RPLL, RPLL has no FPL and returns LRM.

Event Triggered by VHHH ACC	Event Triggered by MNL ACC	Confirmation	Remarks/Result
(FPL-TEST6-IS-A333/H-SDE3GHIJ4J5RWYZ/HB1-VHHH0200 -N0483F370 OCEAN V4 NOMAN A461 AVMUP W16 OLIVA OLI1A-RPLL0131 RPLC -PBN/A1B1C1D1O1S1 NAV/GBAS COM/CPDLC DOF/xxxxxx REG/RPC3343 EET/RPHI0029 SEL/LQEG PER/C)			
8.6.1 EST sent to MNL ACC		Coordinate with MNL's POC if **EST** message was received.	
	8.6.2 LRM sent to VHHH.	Coordinate with VHHH's POC if **LRM** message was received.	

8.7 Departure from RPLL to VHHH via NOMAN, Manila sends EST with a SSR code duplicates with a SSR code in-use in HK. [HK will accept the EST and assign another SSR to the flight concerned internally.]

Event Triggered by VHHH ACC	Event Triggered by MNL ACC	Confirmation	Remarks/Result
(FPL-TEST7-IS-A320/M-SDFGHIRWY/H-RPLL0200 -N0451F340 CAB1A CAB A461 NOMAN V531 BETTY-VHHH0152 VMMC -PBN/A1B1C1D1O1S2 NAV/GBAS SBAS DOF/xxxxxx REG/RPC3271 EET/VHHK0103 SEL/LSJP PER/C RMK/TCAS EQUIPPED)			
	8.7.1 Request a SSR code in-use by HK	Coordinate with HK's POC to obtain a SSR code in-use by HK	
	8.7.2 EST (with a SSR code in-use by HK) sent to VHHH ACC	Coordinate with VHHH's POC if **EST** message was received.	
8.7.3 LAM sent to MNL ACC		Coordinate with MNL's POC if **LAM** message was received.	
8.7.4 ACP sent to MNL ACC		Coordinate with MNL's POC if **ACP** message was received.	(HK to check internally for duplicate SSR code alert and SSR code assigns to the flight)
	8.7.5 LAM sent to VHHH ACC	Coordinate with VHHH's POC if **LAM** message was received.	

8.8 Departure from VHHH to RPLL, HK sends EST with a SSR code duplicates with a SSR code in-use in Manila

[*For Manila to consider whether this test case is deemed necessary and match with Manila's concept of operation. In this case, would Manila return a LRM or LAM+ACP?]*

Event Triggered by VHHH ACC	Event Triggered by MNL ACC	Confirmation	Remarks/Result
(FPL-TEST8-IS-A333/H-SDE3GHIJ4J5RWYZ/HB1-VHHH0200 -N0483F370 OCEAN V4 NOMAN A461 AVMUP W16 OLIVA OLI1A-RPLL0131 RPLC -PBN/A1B1C1D1O1S1 NAV/GBAS COM/CPDLC DOF/xxxxxx REG/RPC3343 EET/RPHI0029 SEL/LQEG PER/C)			
8.8.1 Request a SSR code in-use by MNL		Coordinate with MNL's POC to obtain a SSR code in-use by MNL	
8.8.2 EST (with a SSR code in-use by MNL) sent to MNL ACC		Coordinate with MNL's POC if **EST** message was received.	
	8.8.3 LAM sent to VHHH.	Coordinate with VHHH's POC if **LAM** message was received.	Or would MNL return a LRM instead?
	8.8.4 ACP sent to VHHH ACC	Coordinate with VHHH's POC if **ACP** message was received.	Should skip this step if MNL returns a LRM in step 8.8.3
8.8.5 LAM sent to MNL ACC		Coordinate with MNL's POC if **LAM** message was received.	Should skip this step if MNL returns a LRM in step 8.8.3