



International Civil Aviation Organization
The Fifth Meeting of South China Sea Traffic Flow Review Group
(SCSTFRG/5)
Singapore, 18-21 April 2017

- Agenda Item 2: Review of the current and planned CNS/ATM capabilities and identifying associated reduced horizontal separation.
- Agenda Item 5: Review and update of the task list of SCSTFRG.

THE PHILIPPINE CNS ATM CENTER

(Presented by the Philippines)

SUMMARY

This paper presents a brief overview of the new Philippine CNS-ATM Center which will be officially turned over to the Civil Aviation Authority of the Philippines (CAAP) in July of 2017 and updates to the ATS near-term plan in line with this new ATM system. The CNS-ATM Center is a nation-wide upgrade to a highly automated and highly integrated advance ATM system from Thales that also presents a major improvement in communication and surveillance capabilities with enhanced level of redundancy. This will allow the CAAP to manage its increasing air traffic volume with even better efficiency and improved safety.

1. INTRODUCTION

1.1 The Philippines thru CAAP has finally acquired a state-of-the-art highly-integrated ATM system along with the exceptional surveillance and communication capabilities. These modern tools that is long overdue are absolutely necessary for the country to further improve safety and increase capacity. The CAAP will gradually leverage on this excellence that will later bring benefits to the civil aviation in the country and in the South China Sea region as well.

2. DISCUSSION

2.1 The new ATM Center introduces a nation-wide network of surveillance system with the inclusion of thirteen radar stations, initially one ADS-B located in Manila, and ADS-C. The details of radar locations are as follows: (see Attachment 1 for map of radar coverage)

10 Brand new long range radars:

- Aparri 18:18:04N 121:39:42E
- Laoag 18:10:59N 120:32:10E
- NAIA2 14:30:16N 121:01:10E (with primary radar)
- Kalibo 11:48:08N 122:13:05E (with primary radar)
- Mactan 10:18:33N 123:59:05E (with primary radar)
- Bacolod 10:46:23N 123:00:43E
- Mt. Majic 10:19:31N 123:45:33E
- Palawan 9:14:03N 118:00:24E

- Zamboanga 6:55:22N 122:01:56E
- Davao 7:08:13N 125:38:59E

3 Newly refurbished radars:

- Clark 15:10:51N 120:33:52E
- Tagaytay 14:05:24N 120:54:29E
- NAIA1 14:30:16N 121:01:10E (range capped to 90NM)

2.2 Communication capabilities are also improved in terms of coverage and redundancy with the new ATM Center. Below is a table of Manila ACC sectors and the corresponding VHF radio frequency assignment with numbers of independent transceivers and its location. (see Attachment 2 for map of VHF radio coverage of Manila ACC)

ACC SECTOR NAME	Radio Frequency	Transceivers	Location	Power
Central North	120.5 MHZ	1. Primary	Tagaytay	100W
		2. Secondary	Tagaytay	100W
		3. Backup	ATMC Manila	50W
Central West	132.7 MHZ	1. Primary	Tagaytay	100W
		2. Secondary	Tagaytay	100W
		3. Backup	ATMC Manila	50W
Central South	125.7 MHZ	1. Primary	Tagaytay	100W
		2. Secondary	Tagaytay	100W
		3. Primary	Kalibo	100W
		4. Secondary	Kalibo	100W
		5. Primary	Mt. Majic	100W
		6. Secondary	Mt. Majic	100W
		7. Backup	ATMC Manila	50W
North West	119.3 MHZ	1. Primary	Laoag	100W
		2. Secondary	Laoag	100W
North East	128.3 MHZ	1. Primary	Aparri	100W
		2. Secondary	Aparri	100W
		3. Primary	Cauayan	100W
		4. Secondary	Cauayan	100W
South West	118.9 MHZ	1. Primary	Palawan RDR	100W
		2. Secondary	Palawan RDR	100W
		3. Primary	Puerto Princesa	100W
		4. Secondary	Puerto Princesa	100W
		5. Primary	Tagaytay	100W
		6. Secondary	Tagaytay	100W
Mactan West	127.5 MHZ	1. Primary	Mt. Majic	100W
		2. Secondary	Mt. Majic	100W
		3. Primary	Zamboanga	100W
		4. Secondary	Zamboanga	100W
Mactan East	132.2 MHZ	1. Primary	Mt. Majic	100W

		2. Secondary	Mt. Majic	100W
		3. Primary	Davao	100W
		4. Secondary	Davao	100W

2.3 The numbers of Emergency frequency 121.5 MHZ radio transceivers were also increased from two (2) to seven (7) with one spare radio frequency available for all central sectors to use when needed.

VHF RADIO	Frequency	Transceivers	Location	Power
Emergency	121.5 MHZ	1	Laoag	50W
		2	Aparri	50W
		3	Tagaytay	50W
		4	Palawan RDR	50W
		5	Mt. Majic	50W
		6	Zamboanga	50W
		7	Davao	50W
Spare	128.7 MHZ	1	Tagaytay	100W

2.4 For ADS-B, the CAAP will continue with the first phase of its project to add more ADS-B stations next year and will start with 3 new sites. One in Iba Zambales, the other one in Bolinao Pangasinan, and the one in Bataraza Palawan which is an initiative and project of Singapore with the intent to share its ADS-B data with CAAP although the data link to ATM Center has yet to be completed.

2.5 For ADS-C/CPDLC, the limited trial operation in Manila ACC will continue for this year 2017. A few technical issues are still being encountered and the problem of heavy sector work load is adversely affecting the otherwise seamless operation of ADS-C/CPDLC in other parts of Manila FIR. ADS-C/CPDLC will only become fully operational once the Manila ACC has completely moved all its operations in the new CNS ATM Center. The new ATM center will have more workstations to address the sector workload issues.

2.6 The AIDC tests in CNS ATM Center with Singapore ACC and Ujung Pandang ACC are successful. The CAAP, thru Manila ACC, is planning to do more test this year to include Hong Kong ACC and Ho Chi Minh ACC.

2.7 Furthermore, during the previous year the CAAP has formed a team that will look into the MAESTRO AMAN/DMAN capabilities of the new CNS ATM Center. The DPR team and a group of ATCs from Manila are preparing the needed data for MAESTRO dry-run test this coming month of May 2017.

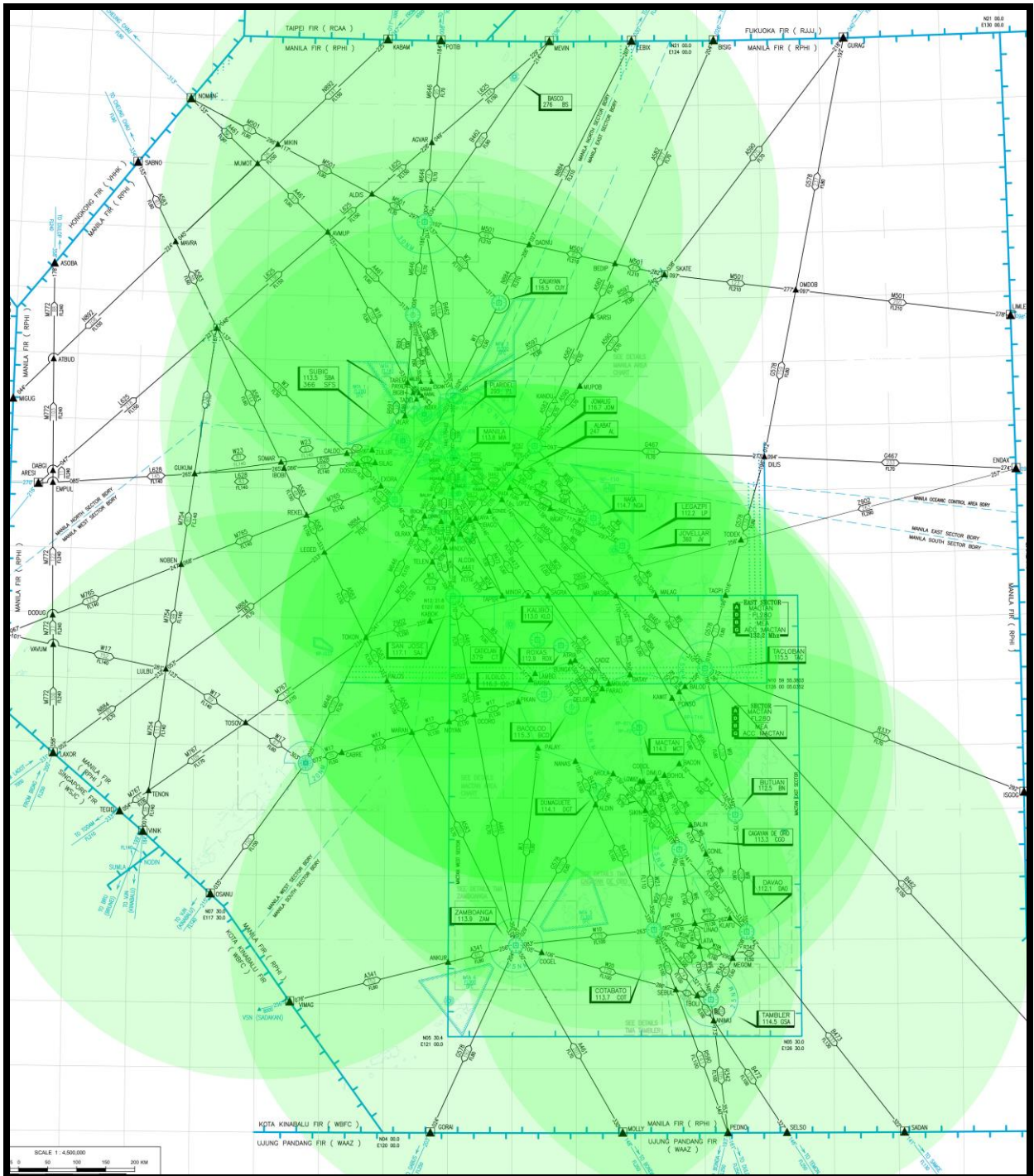
2.8 Once the new CNS ATM Center becomes fully operational next year, the CAAP thru ATS will start to reduce the horizontal separation standard for all enroute traffic from a minimum of 80NM to 50NM. This is in line with the planned conversion of all ATS routes in Manila FIR to RNP10 at or above FL290 this year 2017, and then later will be upgraded to RNP4 for enroute traffic and RNP2 for domestic traffic which will be implemented in Q4 of 2019 pending guidance material on communication and separation.

2.9 With better surveillance capabilities, three more TMAs, namely Kalibo, Bacolod and Davao TMAs, will be provided with radar approach service in the CNS ATM Center. This will make a total of 6 TMAs with radar approach service. (existing radar-equipped TMAs are Manila, Clark, and Mactan). CAAP is planning to add more TMAs with radar service in the coming years.

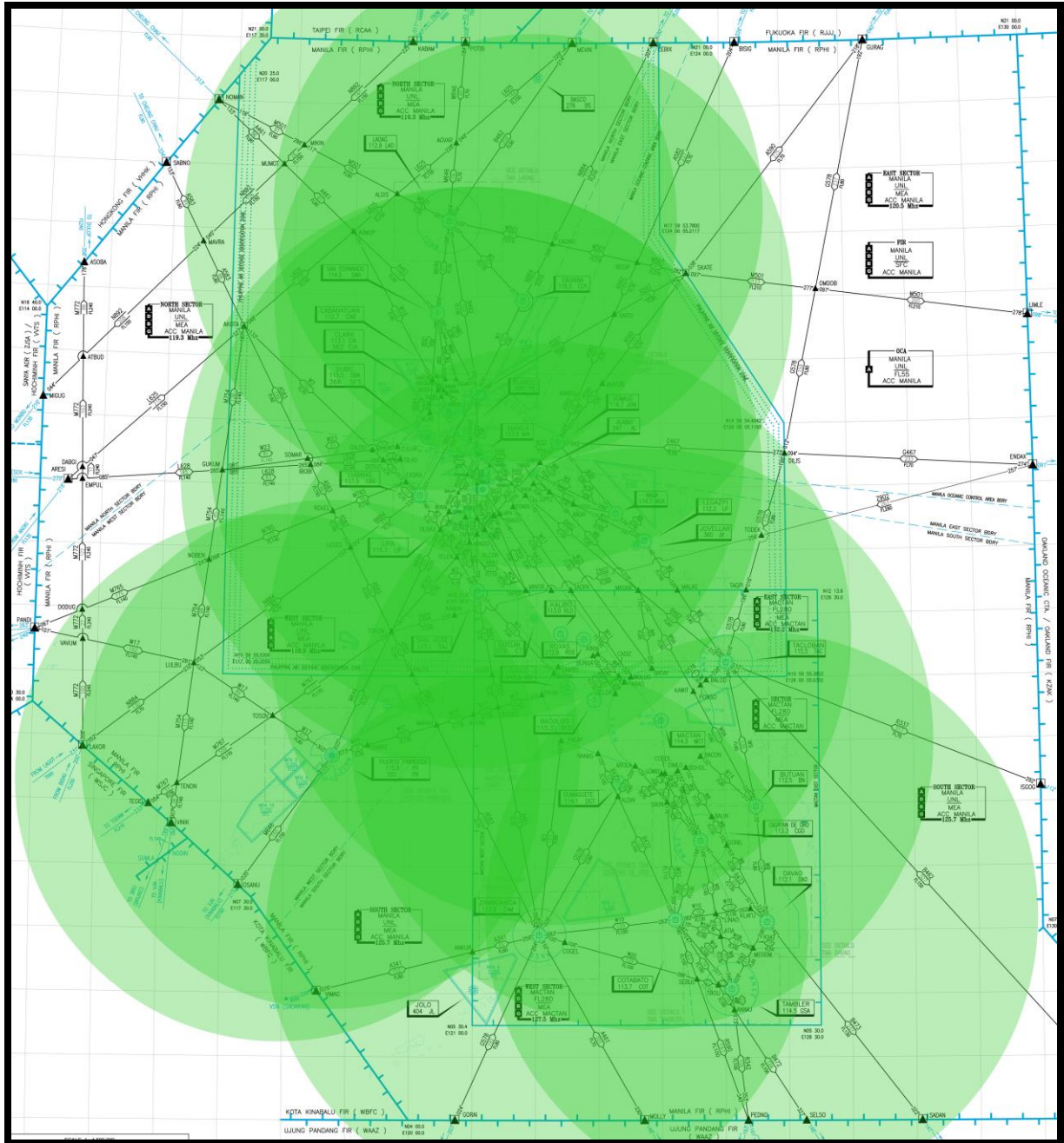
3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matters as appropriate.



Attachment 1 Map of radar coverage



Attachment 2 Map of Manila ACC VHF radio coverage