AIR TRAFFIC MANAGEMENT
Thales Australia Centre, Atrium Lobby Level
WTC Northbank Wharf, Siddeley Street
Melbourne, Victoria, 3005
Australia
Tel. +61 (0)3 8630 4000
Fax.+61 (0)3 9614 0187
www.thalesgroup.com

The New CNS/ATM Systems Development Project (Package-1)

Project (Package-1 & 2)

PH-ATM-PK1 & PK2

IP Addressing Plan

Contract Number: PH-P228

CDRL Number: N/A

Prepared for:

Department of Transportation and Communications (DOTC)

The Columbia Tower,
Ortigas Avenue, Brgy, Wack-Wack
Mandaluyong City,
Metro Manila, Philippines 1555

Prepared by:

Thales Australia Ltd
(ABN 66 008 642 751)

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Written by:	Reza Hajizadeh	HDI	12 Aug 2015	
Verified by:	Erik Khoo	QA Manager	12 Aug 2015	
Approved by:	Mark Melville	HDI Team Leader	12 Aug 2015	
Approved by:	Jean-Julian Rey	System Engineering Manager	12 Aug 2015	

Authorised for use	**Thales Australia Ltd**	**Approved by**	**Engineer**	**Approved by**	**Employer**
Name	R. LIONS	**Name**		**Name**	
Date	12 Aug 2015	**Date**		**Date**	

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1.1. Identification

Project Identification	
Project Name	The New CNS/ATM Systems Development Project (Package-1)
Contract Number	PH-P228
Prime Contractor	Sumitomo Corporation and Thales Australia Ltd
Solution Lead	Thales Australia Ltd

Table 1 - Project Identification

Document Identification	
Document Full Title	IP Addressing Plan
Document Abbreviated Title	IP Addressing Plan
Business Identifier and DTC	61 616 953 - 562
Thales Reference Number (TRN)	N/A

Table 2 - Document Identification

1.2. Philippines ATM Project Overview

The Department of Transportation and Communications (DOTC) is responsible for providing air navigational services in the Philippine Flight Information Region (FIR), and this FIR occupies one of the largest areas in the region.

The Philippine FIR is bounded to the north by the Hong Kong, Taipei and Fukuoka FIRs, to the east by Oakland Oceanic FIR, to the south by Ujung Pandang FIR, to the southwest by the Kota Kinabalu and Singapore FIRs, and to the west by the Ho Chi Minh and Sanya FIRs.

The New CNS/ATM System Development Project is a program of works designed to rejuvenate and enhance the Air Traffic Management capabilities within the Republic of Philippines, and includes civil works (new ATM building in Manila), plus a full suite of new core products related to the new ATM functionality.

The New CNS/ATM Systems Development Project is divided into two (2) separate contract packages as follows:

- Package 1 – ATM Automation, Communication, Navigation and Meteorological Systems; and
- Package 2 – Communication and Surveillance Systems.

Package 1 of the project consists of 6 segments composed of the following systems:

- ATM ATC Segment
  - ATM System (ATMS)
  - Central Technical Monitoring System (CTMS)
  - Computer Based Training (CBT)
  - Journaling and Playback Data Processing (JPDP)
  - Search and Planning System (SAR)
  - Airspace Design and Evaluation Workstation (ADEW)
  - Time Distribution System (TDS)
- ATM AISS Segment
  - Aeronautical Information System (AISS)
- COM G/G Segment
  - AMHS/AFTN System (existing and upgrade)
  - ATN G/G router (existing and upgrade)
- COM Voice Segment
  - Voice Switching and Control System (VSCS)
  - Emergency Radio Bypass System (ERBS)
  - Voice Recording System (VRS)
- NAV Segment
  - GNSS Signal Monitoring System
  - Web Server system
- MET Segment
  - MDPS (WAFS, MTSAT, MCS)
  - Automated Weather Observation System (AWOS)
  - ATIS System

1.3. Document Overview

The purpose of this IP Addressing Plan is to define the IP network addresses, the IP multicast addresses, VLAN numbers and hostnames allocated to the CNS/ATM Sub-systems for the PH-ATM program.

1.4. Applicability of this Document

This document applies to all sub-systems of the PH-ATM Program which use IP communication either with other sub-systems or external systems.

This IP Addressing Plan applies to the CNS/ATM Sub-systems to be provided to DOTC in the framework of the PH-ATM program (New Philippines CNS/ATM system), according to the referenced Contract PH-P228, between DOTC and THALES.

1.5. Terminology, Acronyms and Abbreviations

For a list of Acronyms please see APPENDIX 1

2. Referenced Documents

2.1. Contractual Documents

All contract documents referenced must have the Contract number and Date

Table 3 - Contractual Documents

Ref.	Contract No.	Title	Revision	Date
C_01	PH-P228	Document III (ES) Specifications for Equipment and System works of the Contract	Final	Jan 2010
C_02	PH-P228-P2	Contract Package-2 Document III (ES) Specifications for Equipment and System works.	Final	Mar 2010

2.2. Referenced Standards

Table 4 - Referenced Standards

Ref.	Standard Title	Reference Number
S_01	a) Australian Standard – Installation requirements for customer cabling (Wiring Rules)	AS/CA S009:2013
S_02	International Commercial Terms 2010	INCOTERMS 2010

2.3. Project Documents

All Thales referenced documents must have the Document Name, Business Identifier Number, Revision Number and Revision Date.

Table 5 - Thales Product Documents

Ref.	Document Title	Business Identifier and DTC	Revision	Date
P_01	PH-ATM Global System /Sub-System design Document	61 616 626 - 424	F	In Progress
P_02	PH-ATM Master IP Assignment	61 616 626 - 194	-	In Progress

2.4. Other Documents

Table 6 - Thales Product Documents

No	Document No.	Document Title	Date
Entity Identifier	Business Identifier	DTC	Revision
9950 – Z1W93	61 616 953	562	A
Filename: PH-ATM_IP Addressing Plan_RevBdraft2		Document Class: COMMERCIALLY SENSITIVE	

O_01	RFC 791 (IP)	Internet Architecture Board , Official Protocol Standard - Internet Protocol,	1981
O_02	RFC1918	Address Allocation for Private Internets, Status: best current practice	1996

3. IP Plan

3.1. Overview

The following PH-ATM network architecture overview shows the Engineering Services (ES) infrastructure supported by this IP Address Plan.

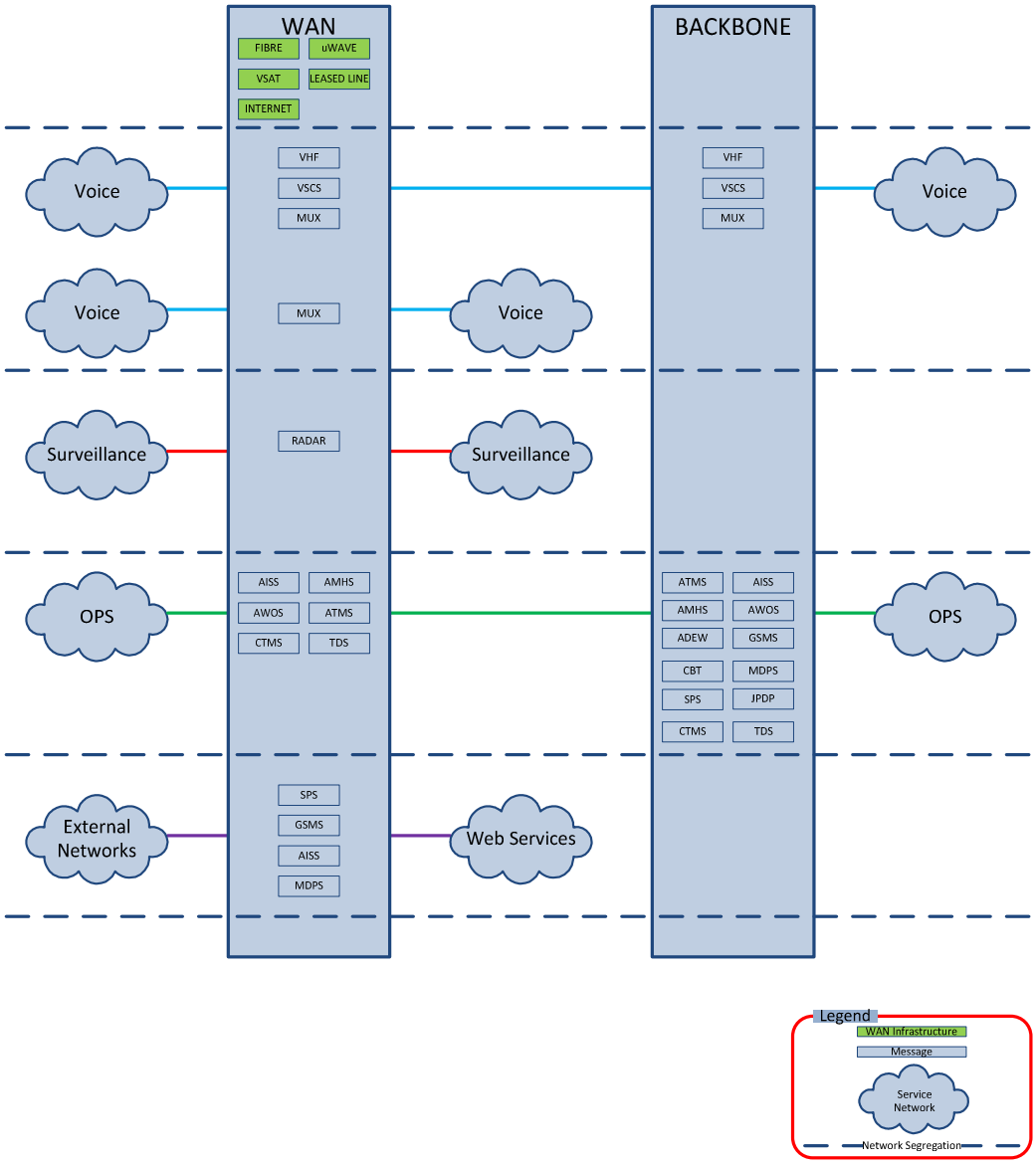

Figure 1 PH-ATM Network Architecture Overview

The purpose of this IP addressing Plan is to define the IP network addresses, IP multicast addresses and the Virtual LAN (VLAN) numbers used by the CNS/ATM Sub-systems. Each CNS/ATM Sub-system has been allocated a range of seven IP networks and corresponding VLAN numbers.

All IP addresses are defined with the following format:

W.X.Y.Z/AA where ***W, X, Y*** and ***Z*** represent 8 bits of the address in decimal value and ***AA*** the sub-net mask value which gives in decimal the number of bits set to "1" inside the mask.

The Philippines CNS/ATM program will use both IPv4 class A and class C address ranges. The class A address range is used internally within each of the sub-systems and has been selected due to its large number of network and host id combinations. This allows a specific IP address syntax to be followed across sites and within each CNS/ATM Sub-system.

The Class A IP address syntax is defined below:

1st Octet	2nd Octet	3rd Octet	4th Octet
Fixed	Site Identifier	Sub-system	Host id
10	0 – 255	0 – 255	0 – 255

The Class C address range will be implemented on the WAN network of the Philippines CNS/ATM program. It has been selected for its different syntax to the class A networks and smaller number of network and host id combinations. The site identifier follows the scheme as in the class A syntax.

The IP address syntax is defined below:

1st Octet	2nd Octet	3rd Octet	4th Octet
Fixed	Fixed	Site Identifier	Host id
192	168	0 – 255	0 – 255

3.1.1. Site Identifier

Identifies the site location of the sub-systems and is defined in Table 7.

3.1.2. Sub-system

Defines the CNS/ATM Sub-system and is defined in Table 8.

3.1.3. Host identification

Identifies the host id (number) of the defined subnet. Hostname syntax and host id ranges are defined in section 0

3.2. VLAN Definition

3.2.1. Internal CNS/ATM Sub-systems

The VLAN numbers for the Philippines CNS/ATM Sub-systems follow the network address third octet for Sub-system as defined in **Table 8** - Internal IP Network address plan for Operational CNS/ATM Sub-systems. To ensure consistency the same last three digits are implemented across all sites. To ensure further network segregation the most significant digit or left most forth digit is set to one, e.g. (1036) for Manila AT ATM OPS and two (2036) for remote sites.

3.2.2. WAN

VLAN numbers associated to the wide area network (WAN) connections have been assigned below one thousand and follow the site identifier number as defined above. Each site has two WAN VLAN numbers assigned and is defined in **Table 10 -** WAN IP Network address **plan**.

3.3. Site Network Identification

Table 7- Site Network Identifier

Site	Site Code	Site No	IP Network Address	Comment
Aparri	AP	2	10.02.XX.0/24	
Bacolod	BC	4	10.04.XX.0/24	
Baguio	BG	6	10.06.XX.0/24	
Basco	BS	8	10.08.XX.0/24	
Basilan	BL	10	10.10.XX.0/24	
Busuanga	US	12	10.12.XX.0/24	
Butuan	BU	14	10.14.XX.0/24	
Cagayan de oro	CG	16	10.16.XX.0/24	
Caticlan	MP	18	10.18.XX.0/24	
Cauayan	CY	20	10.20.XX.0/24	
Clark Tower	CR	22	10.22.XX.0/24	
Cotobato	CB	24	10.24.XX.0/24	
Davao	DV	26	10.26.XX.0/24	
Dipolog	DP	28	10.28.XX.0/24	
Dumaguete	DG	30	10.30.XX.0/24	
General Santos (Tambler)	GS	32	10.32.XX.0/24	
Iliolo Tower	IL	34	10.34.XX.0/24	
Jolo	JO	36	10.36.XX.0/24	
Kalibo	KL	38	10.38.XX.0/24	
Laguindingan	LD	40	10.40.XX.0/24	
Laoag	LA	42	10.42.XX.0/24	
Legaspi	LG	44	10.44.XX.0/24	
Mactan	CE	46	10.46.XX.0/24	
Manila Annex	AN	48	10.48.XX.0/24	
Manila CAAP	CP	50	10.50.XX.0/24	
Manila Main Centre	MN	52	10.52.XX.0/24	
Manila Training Centre (TES)	TE	54	10.54.XX.0/24	
Manila DMZ		56	10.56.XX.0/24	
Mt Majic	MJ	58	10.58.XX.0/24	
Naga	WN	60	10.60.XX.0/24	

Site	Site Code	Site No	IP Network Address	Comment
NAIA Tower (incl Radars)	NI	62	10.62.XX.0/24	
Palawan	PA	64	10.64.XX.0/24	
Plaridel	PL	66	10.66.XX.0/24	
Puerto Princesa	PP	68	10.68.XX.0/24	
Roxas	RX	70	10.70.XX.0/24	
San Fernando	SF	72	10.72.XX.0/24	
San Jose	SJ	74	10.74.XX.0/24	
Subic Bay	SB	76	10.76.XX.0/24	
Tacloban	TC	78	10.78.XX.0/24	
Tagaytay	TY	80	10.80.XX.0/24	
Tagbilaran	TG	82	10.82.XX.0/24	
Tuguegarao	TU	84	10.84.XX.0/24	
Zamboanga RCAG	ZA	86	10.86.XX.0/24	
Fort Bonifacio	FB	88	10.88.XX.0/24	
Manila HF	HF	90	10.90.XX.0/24	
Antique	AQ	92	10.92.XX.0/24	
Pasuquin	PS	94	10.94.XX.0/24	
Zamboanga Airport	ZB	96	10.96.XX.0/24	
SITA	ST	98	10.98.XX.0/24	
Reserved - Thales Melbourne	ZZ	250	10.250.XX.0/24	Thales ML Support

3.4. IP network allocation for CNS/ATM systems

Each CNS/ATM Sub-system has been allocated seven subnets per site. This allows for consistent IP subnets across the entire system. The following table describes the IP network address ranges for CNS/ATM System.

Note : The "**XX**" reference indicates this sub-system is present at multiple sites and follows Table 7- Site Network Identifier numbering.

Table 8 - Internal IP Network address plan for Operational CNS/ATM Sub-systems

CNS/ATM System	Network	Location	IP Network Address	VLAN ID	Comment
ADS-B	Dataflow A		10.**XX**.8.0/24	1008	
	Dataflow B		10.**XX**.9.0/24	1009	
	Reserved		10.**XX**.10.0/24	1010	
	Reserved		10.**XX**.11.0/24	1011	
	Monitoring		10.**XX**.12.0/24	1012	
	Reserved		10.**XX**.13.0/24	1013	
	Reserved		10.**XX**.14.0/24	1014	
AISS	Public	ATMC	10.**XX**.15.0/24	1015	
	AISS Workstation with AMHS UA (via GEO1)Workstation		10.**XX**.16.0/24	1016	
	Cluster	ATMC	10.**XX**.17.0/24	1017	
	Management	ATMC	10.**XX**.18.0/24	1018	
	Back up	ATMC	10.**XX**.19.0/24	1019	
	FW FAILOVER		10.**XX**.20.0/24	1020	
	Reserved		10.**XX**.21.0/24	1021	
AMHS	System LAN		10.**XX**.22.0/24	1022	

CNS/ATM System	Network	Location	IP Network Address	VLAN ID	Comment
	SNL LAN		10.**XX**.23. 0/24	1023	
	Operation Subnet LAN		10.**XX**.24. 0/24	1024	
	CADAS Cross Link		10.**XX**.25. 0/24	1025	
	ATN Router Cross Link		10.**XX**.26. 0/24	1026	
	Spare LAN		10.**XX**.27.0/24	1027	
	Transit Network		10.**XX**.28.0/24	1028	
	RAR VPN Pool		10.**XX**.29.0/24	1029	
	AISS Workstation with AMHS UA (via GEO2)		10.**XX**.30.0/24	1030	
ATIS	Reserved		10.**XX**.31.0/24	1031	
	Reserved		10.**XX**.32.0/24	1032	
	Reserved		10.**XX**.33.0/24	1033	
	Reserved		10.**XX**.34.0/24	1034	
	Reserved		10.**XX**.35.0/24	1035	
	Reserved		10.**XX**.36.0/24	1036	
	Reserved		10.**XX**.37.0/24	1037	
	Reserved		10.**XX**.38.0/24	1038	
ATM	OPS LAN (A & B)	ATMC	10.**XX**.36. 0/24	1036	
	SRVC LAN	ATMC	10.**XX**.37. 0/24	1037	
	SURV_LAN	ATMC	10.**XX**.38. 0/24	1038	
	SURV_BYPASS	ATMC	10.**XX**.39. 0/24	1039	
	MAIN_IO LAN	ATMC	10.**XX**.40. 0/24	1040	
	CDP_LAN	ATMC	10.**XX**.41.0/24	1041	
	Reserved	ATMC	10.**XX**.42. 0/24	1042	
ATM(Reserved)	Voice	TES	10.**XX**.43. 0/24	1043	
	RADAR MON LAN	RADAR MON LAN	10.**XX**.44. 0/24	1044	
	CTMS_TKSUP-DMZ		10.**XX**.45. 0/24	1045	
	SUPPORT LAN		10.**XX**.46. 0/24	1046	
	ATM BACKBONE		10.**XX**.47.0/24	1047	L3 Link from ATM to Backbone
	ATM MGMT		10.**XX**.48.0/24	1048	MGMT Subnet for ATM
	Reserved		10.**XX**.49.0/24	1049	
AWOS	Backbone LAN		10.**XX**.50.0/24	1050	
	Reserved		10.**XX**.51.0/24	1051	
	SUPPORT LAN		10.**XX**.52.0/24	1052	
	Reserved		10.**XX**.53.0/24	1053	
	Reserved		10.**XX**.54.0/24	1054	
	Reserved		10.**XX**.55.0/24	1055	
	Reserved		10.**XX**.56.0/24	1056	
CTMS	CTMS-BACKBONE	ATMC	10.**XX**.64.0/24	1064	
	CTMS-DMZ	ATMC	10.**XX**.65.0/24	1065	
	CTMS_SUPPORT	ATMC	10.**XX**.66.0/24	1066	IPSEC Support
	CTMS-SURVEILLANCE	ATMC	10.**XX**.67.0/24	1067	
	Reserved		10.**XX**.68.0/24	1068	
	Reserved		10.**XX**.69.0/24	1069	
	Reserved		10.**XX**.70.0/24	1070	
ERBS	Reserved		10.**XX**.78.0/24	1078	

CNS/ATM System	Network	Location	IP Network Address	VLAN ID	Comment
	Reserved		10.**XX**.79.0/24	1079	
	Reserved		10.**XX**.80.0/24	1080	
	Reserved		10.**XX**.81.0/24	1081	
	Reserved		10.**XX**.82.0/24	1082	
	Reserved		10.**XX**.83.0/24	1083	
	Reserved		10.**XX**.84.0/24	1084	
GSMS	GSMS_WEB-DMZ	ATMC	10.52.85.0/24	1085	
	GSMS_INTERNAL	ATMC	10.52.86.0/24	1086	
	GSMS_FW_SYNC	ATMC	10.52.87.0/24	1087	
	GSMS-Backbone	ATMC	10.52.88.0.24	1088	
	GSMS_WEB-FW	ATMC	10.52.89.0/24	1089	
	GSMS_SUPPORT	ATMC	10.52.90.0/24	1090	Not required by NEC
	Reserved		10.52.91.0/24	1091	
JPDP	Reserved	ATMC	10.52.92.0/24	1092	
	JPDP_BACKBONE	ATMC	10.52.93.0/24	1093	
	Reserved		10.**XX**.94.0/24	1094	
	Reserved		10.**XX**.95.0/24	1095	
	Reserved		10.**XX**.96.0/24	1096	
	Reserved		10.**XX**.97.0/24	1097	
	JPDP_SUPPORT		10.52.98.0/24	1098	
MDPS	MDPS_MAIN	ATMC	10.52.99.0/24	1099	
	MDPS_ Backbone	ATMC	10.52.100.0/24	1100	
	MDPS_WAFS-DMZ	ATMC	10.52.101.0/24	1101	
	MDPS_MTSAT-DMZ	ATMC	10.52.102.0/24	1102	
	MDPS_SUPPORT	ATMC	10.52.103.0/24	1103	
	MDPS_MONITORING		10.52.104.0/24	1104	
	Reserved		10.52.105.0/24	1105	
Microwave	BACKBONE-A		10.**XX**.106.0/24	1106	
	BACKBONE-B		10.**XX**.107.0/24	1107	
	Radar-A		10.**XX**.108.0/24	1108	
	Radar-B		10.**XX**.109.0/24	1109	
	Microwave MUX		10.**XX**.110.0/24	1110	
	Reserved		10.**XX**.111.0/24	1111	
	SUPPORT		10.**XX**.112.0/24	1112	
MUX	GEO-1		10.**XX**.113.0/24	1113	
	GEO-2		10.**XX**.114.0/24	1114	
	AIRPORT		10.**XX**.115.0/24	1115	
	Reserved		10.**XX**.116.0/24	1116	
	Reserved		10.**XX**.117.0/24	1117	
	MGMT		10.**XX**.118.0/24	1118	
RADAR	Dataflow A LAN		10.**XX**.120.0/24	0	
	Dataflow B LAN		10.**XX**.121.0/24	1121	
	Radar Bypass		10.**XX**.122.0/24	1122	
	Reserved		10.**XX**.123.0/24	1123	
	Monitoring LAN		10.**XX**.124.0/24	1124	
	Reserved		10.**XX**.125.0/24	1125	
	Reserved		10.**XX**.126.0/24	1126	
SPS (SAR)	SPS- Internal	ATMC	10.52.127.0/24	1127	
	SPS-Backbone	ATMC	10.52.128.0/24	112	

IP ADDRESSING PLAN

CNS/ATM System	Network	Location	IP Network Address	VLAN ID	Comment
	SPS-DMZ	ATMC	10.52.129.0/24	1129	
	SPS-SUPPORT	ATMC	10.52.130.0/24	1130	
	Reserved		10.52.131.0/24	1131	
	Reserved		10.52.132.0/24	1132	
	Reserved		10.52.133.0/24	1133	
VHF	MGMT_GEO1		10.**XX**.133.0/24	1133	
	MGMT_GEO2		10.**XX**.134.0/24	1134	
	Reserved		10.**XX**.135.0/24	1135	
	Reserved		10.**XX**.136.0/24	1136	
	Reserved		10.**XX**.137.0/24	1137	
	Reserved		10.**XX**.138.0/24	1138	
	Reserved		10.**XX**.139.0/24	1139	
	Reserved		10.**XX**.140.0/24	1140	
VRS	Reserved		10.**XX**.141.0/24	1141	
	BACKBONE	ATMC	10.**XX**.142.0/24	1142	
	Reserved		10.**XX**.143.0/24	1143	
	Reserved		10.**XX**.144.0/24	1144	
	Reserved		10.**XX**.145.0/24	1145	
	Reserved		10.**XX**.146.0/24	1146	
	VRS_SUPPORT		10.**XX**.147.0/24	1147	
VSAT(Internal)	BACKBONE _A		10.**XX**.148.0/24	1148	
	BACKBONE _B		10.**XX**.149.0/24	1149	
	VSAT_CTMS		10.XX.150.0/24	1150	
	VSAT_CTMS		10.**XX**.151.0/24	1151	
	Reserved		10.XX.152.0/24	1152	
	Reserved		10.XX.153.0/24	1153	
	MGMT		10.**XX**.154.0/24	1154	
	SUPPORT		10.**XX**.155.0/24	1155	
VSCS	Reserved		10.**XX**.156.0/24	1156	
	BACKBONE	ATMC	10.**XX**.157.0/24	1157	
	Reserved		10.**XX**.158.0/24	1158	
	Reserved		10.**XX**.159.0/24	1159	
	Reserved		10.**XX**.160.0/24	1160	
	Reserved		10.**XX**.161.0/24	1161	
	VSCS_SUPPORT		10.**XX**.162.0/24	1162	
VPN	ATM	TES	10.54.162.0/24	1162	
	RAR VPN Pool (AMHS)		10.**XX**.163.0/24	1163	
	Reserved		10.**XX**.164.0/24	1164	
	Reserved		10.**XX**.165.0/24	1165	
	Reserved		10.**XX**.166.0/24	1166	
	Reserved		10.**XX**.167.0/24	1167	
	Reserved		10.**XX**.168.0/24	1168	
	Reserved		10.**XX**.169.0/24	1169	
	Reserved		10.**XX**.170.0/24	1170	
CBT	CBT_MAIN	TES	10.54.163.0/24	1163	
	CBT_SUPPORT		10.54.164.0/24	1164	
TDS	TDS-Backbone1	ATMC	10.52.165.0/24	1165	
	TDS-Backbone2	ATMC	10.52.166.0/24	1166	
	TDS-DMZ	ATMC	10.52.167.0/24	1167	
	TDS-Support	ATMC	10.52.168.0/24	1168	
	Reserved		10.52.169.0/24	1169	

CNS/ATM System	Network	Location	IP Network Address	VLAN ID	Comment
	Reserved		10.52.170.0/24	1170	
Billing	Reserved	ATMC	10.52.171.0/24	1171	
	Reserved		10.52.172.0/24	1172	
	Reserved		10.52.173.0/24	1173	
	Reserved		10.52.174.0/24	1174	
	Reserved		10.52.175.0/24	1175	
	Reserved		10.52.176.0/24	1176	
	Reserved		10.52.177.0/24	1177	
AISS 2	DMZ-AISS_IBS	ATMC	10.**XX**.178.0/24	1178	AISS VLAN 6 DMZ-IBS
	DMZ-AISS_EAD	ATMC	10.**XX**.179.0/24	1179	AISS VLAN 7 DMZ-EAD
	DMZ_AISS_AISS	ATMC	10.**XX**.180.0/24	1180	AISS VLAN 8 DMZ-AISS
	AISS-BB Router A	ATMC	10.**XX**.181.0/24	1181	AISS – BB Router A
	Reserved	ATMC	10.XX.182.0/24	1182	AISS – BB Router B
	AISS Support	ATMC	10.**XX**.183.0/24	1183	
	AISS (MAP/CHARTING, EAIP, FAT CLIENTS)	ATMC	10.XX.184.0/24	1184	
ADEW	ADEW LAN	ATMC	10.52.185.0/24	1185	
	ADEW NAS LAN	ATMC	10.52.186.0/24	1186	
	ADEW DMZ LAN	ATMC	10.52.187.0/24	1187	
	ADEW SUPPORT	ATMC	10.52.188.0/24	1188	
	ADEW BACKBONE	ATMC	10.52.189.0/24	1189	
	Reserved			1190	
	Reserved			1191	
Test Platform	OPS Test Platform	ATMC	10.52.190.0/24	1190	

where **XX** defines the site network identifier

Note : CNS/ATM Systems installed outside Manila (ATMC) will deploy the same last three VLAN ID digits but the most significant digit will be two (2) instead of one (1), i.e. ATM OPS LAN (A&B) is VLAN ID 1036 in Manila and 2036 in Kalibo.

3.4.1. Subsystem Link Network Identification

Each subsystem is assigned a pool of 169.254.0.0/16 addresses for internal point to point link networks. It is the responsibility of each subsystem to assign ranges from their assignment and not to advertise these addresses.

Table 9 - Subsystem Link Network Assignments

CNS/ATM System	Network	Location	IP Network Address	Comment
ADEW	Reserved		169.254.1.**XX**/24	
	Reserved		169.254.2.**XX**/24	
	Reserved		169.254.3.**XX**/24	

CNS/ATM System	Network	Location	IP Network Address	Comment
	Reserved		169.254.4.**XX**/24	
	Reserved		169.254.5.**XX**/24	
	Reserved		169.254.6.**XX**/24	
	Reserved		169.254.7.**XX**/24	
ADSB	Reserved		169.254.8.**XX**/24	
	Reserved		169.254.9.**XX**/24	
	Reserved		169.254.10.**XX**/24	
	Reserved		169.254.11.**XX**/24	
	Reserved		169.254.12.**XX**/24	
	Reserved		169.254.13.**XX**/24	
	Reserved		169.254.14.**XX**/24	
AISS	Reserved		169.254.15.**XX**/24	
	Reserved		169.254.16.**XX**/24	
	Reserved		169.254.17.**XX**/24	
	Reserved		169.254.18.**XX**/24	
	Reserved		169.254.19.**XX**/24	
	Reserved		169.254.20.**XX**/24	
	Reserved		169.254.21.**XX**/24	
AMHS	Reserved		169.254.22.**XX**/24	
	Reserved		169.254.23.**XX**/24	
	Reserved		169.254.24.**XX**/24	
	Reserved		169.254.25.**XX**/24	
	Reserved		169.254.26.**XX**/24	
	Reserved		169.254.27.**XX**/24	
	Reserved		169.254.28.**XX**/24	
ATIS	Reserved		169.254.29.**XX**/24	
	Reserved		169.254.30.**XX**/24	
	Reserved		169.254.31.**XX**/24	
	Reserved		169.254.32.**XX**/24	
	Reserved		169.254.33.**XX**/24	
	Reserved		169.254.34.**XX**/24	
	Reserved		169.254.35.**XX**/24	
ATM	Reserved		169.254.36.**XX**/24	
	Reserved		169.254.37.**XX**/24	
	Reserved		169.254.38.**XX**/24	
	Reserved		169.254.39.**XX**/24	
	Reserved		169.254.40.**XX**/24	
	Reserved		169.254.41.**XX**/24	
	Reserved		169.254.42.**XX**/24	
ATM(Reserved)	Reserved		169.254.43.**XX**/24	
	Reserved		169.254.44.**XX**/24	
	Reserved		169.254.45.**XX**/24	
	Reserved		169.254.46.**XX**/24	
	Reserved		169.254.47.**XX**/24	
	Reserved		169.254.48.**XX**/24	
	Reserved		169.254.49.**XX**/24	
AWOS	Reserved		169.254.50.**XX**/24	
	Reserved		169.254.51.**XX**/24	
	Reserved		169.254.52.**XX**/24	
	Reserved		169.254.53.**XX**/24	
	Reserved		169.254.54.**XX**/24	

CNS/ATM System	Network	Location	IP Network Address	Comment
	Reserved		169.254.55.**XX**/24	
	Reserved		169.254.56.**XX**/24	
CTMS	Reserved		169.254.57.**XX**/24	
	Reserved		169.254.58.**XX**/24	
	Reserved		169.254.59.**XX**/24	
	Reserved		169.254.60.**XX**/24	
	Reserved		169.254.61.**XX**/24	
	Reserved		169.254.62.**XX**/24	
	Reserved		169.254.63.**XX**/24	
WEB SERVERS (DMZ)	Reserved	DMZ	169.254.64.**XX**/24	Firewall state and failover links.
	Reserved		169.254.65.**XX**/24	
	Reserved		169.254.66.**XX**/24	
	Reserved		169.254.67.**XX**/24	
	Reserved		169.254.68.**XX**/24	
	Reserved		169.254.69.**XX**/24	
	Reserved		169.254.70.**XX**/24	
	Reserved		169.254.71.**XX**/24	
	Reserved		169.254.72.**XX**/24	
	Reserved		169.254.73.**XX**/24	
ERBS	Reserved		169.254.74.**XX**/24	
	Reserved		169.254.75.**XX**/24	
	Reserved		169.254.76.**XX**/24	
	Reserved		169.254.77.**XX**/24	
	Reserved		169.254.78.**XX**/24	
	Reserved		169.254.79.**XX**/24	
	Reserved		169.254.80.**XX**/24	
GSMS	Reserved		169.254.81.**XX**/24	
	Reserved		169.254.82.**XX**/24	
	Reserved		169.254.83.**XX**/24	
	Reserved		169.254.84.**XX**/24	
	Reserved		169.254.85.**XX**/24	
	Reserved		169.254.86.**XX**/24	
	Reserved		169.254.87.**XX**/24	
JPDP	Reserved		169.254.88.**XX**/24	
	Reserved		169.254.89.**XX**/24	
	Reserved		169.254.90.**XX**/24	
	Reserved		169.254.91**XX**/24	
	Reserved		169.254.92.**XX**/24	
	Reserved		169.254.93.**XX**/24	
	Reserved		169.254.94.**XX**/24	
MDPS	Reserved		169.254.95.**XX**/24	
	Reserved		169.254.96.**XX**/24	
	Reserved		169.254.97.**XX**/24	
	Reserved		169.254.98.**XX**/24	
	Reserved		169.254.99.**XX**/24	
	Reserved		169.254.100.**XX**/24	
	Reserved		169.254.101.**XX**/24	
Microwave	Reserved		169.254.102.**XX**/24	
	Reserved		169.254.103.**XX**/24	
	Reserved		169.254.104.**XX**/24	

CNS/ATM System	Network	Location	IP Network Address	Comment
	Reserved		169.254.105.**XX**/24	
	Reserved		169.254.106.**XX**/24	
	Reserved		169.254.107.**XX**/24	
	Reserved		169.254.108.**XX**/24	
MUX	Reserved		169.254.109.**XX**/24	
	Reserved		169.254.110.**XX**/24	
	Reserved		169.254.111.**XX**/24	
	Reserved		169.254.112.**XX**/24	
	Reserved		169.254.113.**XX**/24	
	Reserved		169.254.114.**XX**/24	
RADAR	Reserved		169.254.115.**XX**/24	
	Reserved		169.254.116.**XX**/24	
	Reserved		169.254.117.**XX**/24	
	Reserved		169.254.118.**XX**/24	
	Reserved		169.254.119.**XX**/24	
	Reserved		169.254.120.**XX**/24	
	Reserved		169.254.121.**XX**/24	
SPS (SAR)	Reserved		169.254.122.**XX**/24	
	Reserved		169.254.123.**XX**/24	
	Reserved		169.254.124.**XX**/24	
	Reserved		169.254.125.**XX**/24	
	Reserved		169.254.126.**XX**/24	
	Reserved		169.254.127.**XX**/24	
	Reserved		169.254.128.**XX**/24	
VHF	Reserved		169.254.129.**XX**/24	
	Reserved		169.254.130.**XX**/24	
	Reserved		169.254.131.**XX**/24	
	Reserved		169.254.132.**XX**/24	
	Reserved		169.254.133.**XX**/24	
	Reserved		169.254.134.**XX**/24	
	Reserved		169.254.135.**XX**/24	
VRS	Reserved		169.254.135.**XX**/24	
	Reserved		169.254.136.**XX**/24	
	Reserved		169.254.137.**XX**/24	
	Reserved		169.254.138.**XX**/24	
	Reserved		169.254.139.**XX**/24	
	Reserved		169.254.140.**XX**/24	
	Reserved		169.254.141.**XX**/24	
VSAT(Internal)	Reserved		169.254.142.**XX**/24	
	Reserved		169.254.143.**XX**/24	
	Reserved		169.254.144.**XX**/24	
	Reserved		169.254.145.**XX**/24	
	Reserved		169.254.146.**XX**/24	
	Reserved		169.254.147.**XX**/24	
	Reserved		169.254.148.**XX**/24	
	Reserved		169.254.149**XX**/24	
VSCS	Reserved		169.254.150.**XX**/24	
	Reserved		169.254.151.**XX**/24	
	Reserved		169.254.152.**XX**/24	
	Reserved		169.254.153.**XX**/24	
	Reserved		169.254.154.**XX**/24	

CNS/ATM System	Network	Location	IP Network Address	Comment
	Reserved		169.254.155.**XX**/24	
	Reserved		169.254.156.**XX**/24	
VPN	Reserved		169.254.157.**XX**/24	
	Reserved		169.254.158.**XX**/24	
	Reserved		169.254.159.**XX**/24	
	Reserved		169.254.160.**XX**/24	
	Reserved		169.254.161.**XX**/24	
	Reserved		169.254.162.**XX**/24	
	Reserved		169.254.163.**XX**/24	
	Reserved		169.254.164.**XX**/24	
	Reserved		169.254.165.**XX**/24	
	Reserved		169.254.166.**XX**/24	
	Reserved		169.254.167.**XX**/24	
CBT	Reserved		169.254.168.**XX**/24	
TDS	Reserved		169.254.169.**XX**/24	
Billing	Reserved		169.254.170.**XX**/24	

3.5. IP Networks

3.5.1. WAN IP Networks

Each site has two WAN subnets assigned to it. To logically distinguish a WAN IP network compared to an internal IP network, IPv4 class C addressing scheme has been selected. Similar to the class A addressing scheme for internal networks, the 3rd octet is used for the site identifier. The VLAN ID matches the 3rd Octet but with an offset of one hundred (100).

Table 10 - WAN IP Network address plan

CNS/ATM System	Location	Building	Site Code	Site No	Network	IP Address	VLAN ID	Comment
WAN	APARRI	RCAG/RADAR	AP	02	AP_WAN_A	192.168.2.0/24	102	
					AP_WAN_B	192.168.3.0/24	103	
	BACOLOD	AIRPORT	BC	04	BC_WAN_A	192.168.4.0/24	104	
		RCAG/RADAR			BC_WAN_B	192.168.5.0/24	105	
	BAGUIO		BG	06				
		AIRPORT			BG _WAN_A	192.168.6.0/24	106	
		Reserved			BG _WAN_B	192.168.7.0/24	107	

IP ADDRESSING PLAN

CNS/ATM System	Location	Building	Site Code	Site No	Network	IP Address	VLAN ID	Comment
	BASCO	Reserved	BS	08	BS _WAN_A	192.168.8.0/24	108	
		AIRPORT			BS _WAN_B	192.168.9.0/24	109	
	BASILAN	Reserved	BL	10	BL _WAN_A	192.168.10.0/24	110	
					BL _WAN_B	192.168.11.0/24	111	
	BUSUANGA	Reserved	US	12	US _WAN_A	192.168.12.0/24	112	
		AIRPORT			US _WAN_B	192.168.13.0/24	113	
	BUTUAN	Reserved	BU	14	BU _WAN_A	192.168.14.0/24	114	
		AIRPORT			BU _WAN_B	192.168.15.0/24	115	
	CAGAYAN DE ORO	Reserved	CG	16	CG _WAN_A	192.168.16.0/24	116	
					CG _WAN_B	192.168.17.0/24	117	
	CATICLAN	AIRPORT	MP	18	MP _WAN_A	192.168.18.0/24	118	
					MP _WAN_B	192.168.19.0/24	119	
	CAUAYAN	AIRPORT	CY	20	CY _WAN_A	192.168.20.0/24	120	
					CY _WAN_B	192.168.21.0/24	121	
	CLARK TOWER	AIRPORT	CR	22	CR _WAN_A	192.168.22.0/24	122	
					CR _WAN_B	192.168.23.0/24	123	

CNS/ATM System	Location	Building	Site Code	Site No	Network	IP Address	VLAN ID	Comment
	COTOBATO	Reserved	CB	24	CB _WAN_A	192.168.24.0/24	124	
		AIRPORT			CB _WAN_B	192.168.25.0/24	125	
	DAVAO	AIRPORT	DV	26	DV _WAN_A	192.168.26.0/24	126	
		RCAG/RADAR			DV _WAN_B	192.168.27.0/24	127	
	DIPOLOG	AIRPORT	DP	28	DP _WAN_A	192.168.28.0/24	128	
					DP _WAN_B	192.168.29.0/24	129	
	DUMAGUETE	AIRPORT	DG	30	DG _WAN_A	192.168.30.0/24	130	
		Reserved			DG _WAN_B	192.168.31.0/24	131	
	GENERAL SANTOS	AIRPORT	GS	32	GS _WAN_A	192.168.32.0/24	132	
		Reserved			GS _WAN_B	192.168.33.0/24	133	
	ILOILO	AIRPORT	IL	34	IL _WAN_A	192.168.34.0/24	134	
					IL _WAN_B	192.168.35.0/24	135	
	JOLO	Reserved	JO	36	JO _WAN_A	192.168.36.0/24	136	
		AIRPORT			JO _WAN_B	192.168.37.0/24	137	
	KALIBO	AIRPORT	KL	38	KL_WAN_A	192.168.38.0/2	138	

CNS/ATM System	Location	Building	Site Code	Site No	Network	IP Address	VLAN ID	Comment
						4		
		RCAG/RADAR			KL _WAN_B	192.168.39.0/24	139	
	LAGUINDINGAN	AIRPORT	LD	40	LD _WAN_A	192.168.40.0/24	140	
		Reserved			LD _WAN_B	192.168.41.0/24	141	
	LAOAG	AIRPORT	LD	42	LA _WAN_A	192.168.42.0/24	142	
		RCAG/RADAR			LA _WAN_B	192.168.43.0/24	143	
	LEGAZPI	AIRPORT	LG	44	LG _WAN_A	192.168.44.0/24	144	
		Reserved			LG _WAN_B	192.168.45.0/24	145	
	MACTAN	AIRPORT	CE	46	CE _WAN_A	192.168.46.0/24	146	
		RCAG/RADAR			CE _WAN_B	192.168.47.0/24	147	
	MANILA ANNEX			48	Reserved			
	MANILA CAAP			50	Reserved			
	MANILA	ATMC	MN	52	MN_WAN_A	192.168.52.0/24	152	
					MN_WAN_B	192.168.53.0/24	153	
	MANILA TRAINING CENTRE			54	Reserved			

CNS/ATM System	Location	Building	Site Code	Site No	Network	IP Address	VLAN ID	Comment
	MANILA DMZ			56	Reserved			
	MT MAJIC	Reserved	MJ	58	MJ _WAN_A	192.168.58.0/24	158	
		RADAR			MJ _WAN_B	192.168.59.0/24	159	
	NAGA	Reserved	NG	60	NG_WAN_A	192.168.60.0/24	160	
		AIRPORT			NG_WAN_B	192.168.61.0/24	161	
	NAIA	NAIA TWR	NI	62	NI_WAN_A	192.168.62.0/24	162	
		NAIA1 TWR			NI_WAN_B	192.168.63.0/24	163	
	PALAWAN	RADAR	PA	64	PA_WAN_A	192.168.64.0/24	164	
					PA_WAN_B	192.168.65.0/24	165	
	PLARIDEL	Reserved	PL	66	PL_WAN_A	192.168.66.0/24	166	
		AIRPORT			PL_WAN_B	192.168.67.0/24	167	
	PUERTO PRINCESS	AIRPORT	PP	68	PP_WAN_A	192.168.68.0/24	168	
					PP_WAN_B	192.168.69.0/24	169	
	ROXAS	Reserved	RX	70	RX_WAN_A	192.168.70.0/24	170	
		AIRPORT			RX_WAN_B	192.168.71.0/24	171	

CNS/ATM System	Location	Building	Site Code	Site No	Network	IP Address	VLAN ID	Comment
	SAN FERNARDO	Reserved	SF	72	SF_WAN_A	192.168.72.0/24	172	
		AIRPORT			SF_WAN_B	192.168.73.0/24	173	
	SAN JOSE	Reserved	SJ	74	SJ_WAN_A	192.168.74.0/24	174	
		AIRPORT			SJ_WAN_B	192.168.75.0/24	175	
	SUBIC BAY	AIRPORT	SB	76	SB_WAN_A	192.168.76.0/24	176	
		Reserved			SB_WAN_B	192.168.77.0/24	177	
	TACLOBAN	AIRPORT	TC	78	TC _WAN_A	192.168.78.0/24	178	
		Reserved			TC _WAN_B	192.168.79.0/24	179	
	TAGAYTAY	TX	TY	80	TY _WAN_A	192.168.80.0/24	180	
		RX			TY _WAN_B	192.168.81.0/24	181	
	TAGBILARAN	Reserved	TG	82	TG _WAN_A	192.168.82.0/24	182	
		AIRPORT			TG _WAN_B	192.168.83.0/24	183	
	TUGUEGARAO	Reserved	TU	84	TU _WAN_A	192.168.84.0/24	184	
		AIRPORT			TU _WAN_B	192.168.85.0/24	185	
	ZAMBOANG	RCAG/RADAR	ZA	86	ZA _WAN_A	192.168.86.0/2	186	

CNS/ATM System	Location	Building	Site Code	Site No	Network	IP Address	VLAN ID	Comment
	A					4		
					ZA _WAN_B	192.168.87.0/24	187	
	FORT BONIFACIO	HF TX	FB	88	FB_WAN_A	192.168.88.0/24	188	
					FB_WAN_B	192.168.89.0/24	189	
	Manila AFC	AFC	AF	98	AF_WAN_A	192.168.98.0/24		

3.5.2. Backbone

Transport Networks are used to transfer data between geographically or logically separated sub systems. The Transport Network is composed of an OSI layer 3 backbone, routing data between sub system local and wide area layer 2 networks.
The network backbone interconnects the various sub-systems. The backbone is a high speed Ethernet layer 3 router and firewall. The backbone is located in the Manila ATM Centre.

Table 11 - IP Network address plan for Backbone

CNS/ATM System	Location	Building	Site Code	Site No	Network	IP Address	VLAN ID	Comment
Network Backbone	ATMC	ATMC	MN	100	Backbone_A	192.168.100.0/24	200	
		ATMC			Backbone_B	192.168.101.0/24	201	

3.5.3. Web Servers

The web server sub-system provides the aeronautical user community with timely, accurate and safe access to aeronautical information and services through the internet.

The Web Services System provides web proxy services for the

- Aeronautical Information Services System (AISS)
- Search Planning (SPS) system
- GNSS Signal Monitoring System (GSMS)

Table 12 - IP Network address plan for Webservers

CNS/ATM System	Network	Location	IP Network address	VLAN ID	Comment
WEB SERVERS (DMZ)	DMZ_MNGT	DMZ	10.56.71.0/24	1071	Management Network for main DMZ equipment
	DMZ_MNGT_SUP	DMZ	10.56.72.0/24	1072	Management

					Network for Remote Support

CNS/ATM System	Network	Location	IP Network address	VLAN ID	Comment
WEB SERVERS (DMZ)	DMZ_INSIDE	DMZ	10.56.73.0/24	1073	
	DMZ_OUTSIDE	DMZ	10.56.74.0/24	1074	
	DMZ_TRANSIT	DMZ	10.56.75.0/24	1075	
	DMZ_SUPPORT	DMZ	10.56.76.0/14	1076	Remote Support to management server network
	DMZ_MNGT_WS	DMZ	10.56.77.0/24	1077	Management Server to Management Workstation Network

3.6. IP network allocation for the TES systems

The following table describes the IP network addresses for the TES system:

Table 13 - IP Network address plan for TES systems

CNS/ATM System	Network	Location	IP Network Address	Comment
ATM	OPS LAN (A & B)	ATMC	10.54.36.0/24	VLAN ID:2036
	SRVC LAN	ATMC	10.54.37.0/24	VLAN ID:2037
	SURV LAN	ATMC	10.54.38.0/24	VLAN ID:2038
	SURV BYPASS	ATMC	10.54.39.0/24	VLAN ID:2039
	Reserved	ATMC	10.54.40.0/24	VLAN ID:2040
	Reserved	ATMC	10.54.41.0/24	VLAN ID:2041
	Voice sync	ATMC	10.54.42.0/24	VLAN ID:2042

3.7. IP network allocation for the external systems

The following table describes the IP network addresses for connection to external systems:

Table 14 - IP Network address plan for External Systems

CNS/ATM System	External System	Location	IP Network Address	Comment
AISS	EAD	DMZ	TBD	
AMHS	AFTN	ATMC	TBD	
	ATN G/G		TBD	
ATM	ACARS	ATMC	TBD	
	ATN A/G		TBD	
MDPS	JDDS	DMZ	TBD	
	WAFS		TBD	
SPS	HKMCC	DMZ	TBD	

3.8. Definition of IP multicast addresses

The following table allocates IP multicast address ranges to Operational, Training and Evaluation CNS/ATM Sub-systems which use IP multicast communication. The “owner” of the IP multicast address is the system which generates the IP multicast data flow.

As with IPv4 class A and C address ranges the class D structure follows a consistent syntax.

The IP multicast address syntax is defined below:

1st Octet	2nd Octet	3rd Octet	4th Octet
Fixed	Source	System Instance	Data Flow
239	0 – 255	0 – 255	0 – 255

3.8.1. Source

The 2nd Octet Source identifier is a three digit number that identifies the “owner” of the multicast flow. Some examples are radar (140), ATM (1) and ADSB (144).

Note: Not all sub-systems require multicast communications but Table 16 has allocated source numbers anyway.

3.8.2. System Instance

The 3rd Octet identifies the System Instance of the multicast flow. This is used where multiple system types can exist within the one sub-system. Multiple instances could include main, backup or bypass systems.

3.8.3. Data Flow

The 4th Octet is used to identify the data flow. Typically Dataflow A is 1 and Dataflow B is 2. Both Radar and ADS-B Sub-systems follow this rule.

Table 15 - IP network multicast addresses for Operational & Simulation ATC Systems

CNS/ATM System	Description	IP Multicast address range	Comments
ATM – Operational (OPS)	OPS LAN (A&B)	239.1.10.101	
ATM – Simulation (SIM)	SIM LAN (A&B)	239.1.110.101	
ADS-B	Dataflow_A	239.144.230.1	
	Dataflow_B	239.144.230.2	
RADAR	Dataflow_A	239.140.11.1	
	Dataflow_B	239.140.11.2	

For full detail of IP Multicast addresses refer to the PH-ATM Master IP Assignment (P_02)

3.9. Hostname Syntax

The hostname syntax defines the rules in assigning a logical IP name to the equipment with a defined IP address. These rules provide consistent terminology across the various sub-systems and support efficient system of systems integration.

The hostname syntax is defined by the following structure:

Site ID	Sub-system ID	Function	Node Number	Node Type
aa	aa	aaa	aa	Aa

3.9.1. Site Identifier

Identifies the site for the equipment location. The two digit acronym follows the same syntax as defined in Table 7- Site Network Identifier.

3.9.2. Sub-system Identifier

Identifies the Philippines CNS/ATM Sub-system for the equipment. The two digit acronym is described in the table below:

Table 16 - CNS/ATM Sub-system Identifier

CNS/ATM System	Sub Function	System Identifier	Comments
ADEW		AW	
ADSB		AB	
AISS		AI	
AMHS		AM	
ATIS		AT	
ATM	ATMC	OP	
	Remote Sites	RT	
	TES	TE	
	AFC	AF	
AWOS			AWOS Sub-system identifier not used
CTMS		CT	Supervision
WEB SERVERS		WS	
ERBS		ER	
GSMS		GS	
JPDP		JP	
MDPS		MD	
Microwave		MW	

CNS/ATM System	Sub Function	System Identifier	Comments
MUX		MX	
RADAR		RD	
SPS (SAR)		SP	
VHF		VH	
VRS		VR	
VSAT(Internal)		VT	
VSCS		VS	
CBT		CB	
TDS		TD	
Billing		BL	

3.9.3. Function Identifier

The function identifier is a three digit acronym that describes the application function within a particular CNS/ATM Sub-system. The following table describes the function identifiers:

Table 17 - Function Identifier

CNS/ATM System	Function ID	Description	Comments
ADEW	WKS	ADEW Workstation	
	NAS	NAS Server	
ADSB	GRS	ADS-B Ground station	
	MON	LCMS or RCMS	
AISS	VDB	Virtual Machine Database	
	WKS	Thin Client Workstation	
	FWK	Fat Client Workstation	
	MWK	Map/Charting Workstation	
	AWK	eAIP Workstation	
AMHS	AID	AIDA-NG Server	
	ATN	Air Telecommunication Network	
	CAD	CADAS Server	
	CNM	CNMS Server	
	TRM	Terminal	
	OWP	Operator Work Position	
	CUA	User Agent Terminal	
ATIS	TBD		
	TBD		
ATM	AFP	ADS-B Front Processor	
	AMA	Approach Manager	
	AGP	Air Ground Data Processor	

CNS/ATM System	Function ID	Description	Comments
	ASP	Air Situation Playback Processor	
	CDP	Communication Data Processor	
	FCP	Flight Plan Conflict Function	
	FDP	Flight Plan Processor	
	MSP	Sensor Bypass Processor	
	MST	Multi-Sensor Tracking Processor	
	REC	Recording Processor	
	RTP	Radar Track Processor	
	SGW	Sensor Gateway Processor	
	SNM	Safety Nets & Monitoring Processor	
	FCP	Flight Plan Conflict Function	
	EXC	Executive Controller	
	PLC	Planning Co-ordinator	
	FDO	Flight Data Operator	
	WSP	Watch Supervisor	
	TWR	Tower Controller	
	BRF	Observer	
	AMS	Observer	
	MON	Observer	
	FSS	Observer	
	TKS	Technical Supervisor	
	Reserved		
	Reserved		
AWOS	CDU	Central Data unit	
	ATI	ATIS	
	PSV	PORT SERVER	
CTMS	CTM	CTMS Server	Includes DMZ proxy
WEB SERVERS	SRV	RHEL Server	
	DMZ	Subsystem alias	DMZ name specific to a subsystem. Supports IP relocation.
ERBS	TBD		
	TBD		
GSMS	TBD		
JPDP	TBD		
MDPS	TBD		
Microwave	IDU	IDU	
MUX	MUX		
RADAR	TBD		

CNS/ATM System	Function ID	Description	Comments
SPS (SAR)	WKS	SPS Workstation	
	MON	SPS Monitoring Workstation	
	RCC	SPS RCC Server	
VHF	TRS	Transmitter	
	RCV	Receiver	
	TCV	Transceiver	
VRS	TBD		
VSAT(Internal)	MDM	VSAT MODEM	
VSCS	TBD		
CBT	WKS	Workstation	
TDS	NTP	Network Time Protocol	
Billing	BIL	Billing Server	
Network	NET	Network equipment	

3.9.4. Node Number

This two digit reference identifies the number of nodes of a particular function present at a specific location and whether they operate independently or with another node. Typically workstations operate independently whereas data servers in a pair.

The following table identifies the node numbers:

Table 18 - Node number

Operation	Node Number	Comments
Workstations or individual(single) processors	01 - **XX**	Independent operation
Redundant Data Processors	1A, 1B	First redundant pair
	2A, 2B	Second redundant pair
	3A, 3B	Third redundant pair
	4A, 4B	Fourth redundant pair
Firewall logical names	1A, 1S	First Active, Standby pair
Firewall physical names	1A, 1B	First Primary, Secondary

where **XX** < 99 per site

3.9.5. Node Type Identifier

This two digit acronym references the type of equipment within a CNS/ATM Sub-system. Depending on the equipment, it could represent the equipment itself or the operating system on the equipment.

The following table identifies the node types:

Table 19 - Node Type Identifier

Node Type	ID	Comments

Node Type	ID	Comments
Linux	LI	Linux OS, including Virtual Machines
Network	NT	
pLINE	PL	
Printer	PR	
Router	RT	
SAN	SN	
Switch	SW	
Time	TM	
VMWare	VM	VMWare hosts, e.g., ESX
Windows	WI	Windows OS, including Virtual Machines
Modem	MD	
Firewall equipment	FW	
Transmitter	TX	VHF
Receiver	RX	VHF
Transceiver	TS	VHF

3.9.6. Host Identifier

The following host ID ranges will be used on Philippines CNS/ATM program:

Node Type	Sub-Type	ID	Comments
Workstations	Global Positions	1 – 19	Monitoring displays
	Display Positions	20 – 79	Operations displays
	Simulation Positions	80 – 99	TES displays
Servers		100 – 179	
Printers		180 - 199	
Switches		200 – 229	
Routers		230 – 249	
Gateways		250 – 253	
Virtual Gateway		254	

4. IP Address Guidelines

The IP address plan will deploy various methods to minimise publication of sensitive IP address information to the sub-systems.

- Restricted access to IP Data
    - Sub-systems will be restricted to only see their internal IP Address sub-nets and VLAN IDs,
    - Site Identifiers for only their deployed sub-system sites,
    - External Interface IP addresses defined in relevant sub-system ICD's.

Operational risks will also be minimised by tightly controlled system to system and external communication

- Implementation Guidelines for sharing IP Data
    - Sub-system hosts file only contain internal IP addresses and hostnames for their own sub-system,
    - External IP interface addresses on relevant external sub-system interface nodes only,
    - Internal IP Route definition restricted to mandatory operation of sub-system,
    - External IP Routes only defined on sub-system external interface nodes.
- External IP Data interfaces
    - Will only operate through secure access routers,
    - Internet interfaces will operate through firewalls with DMZ configuration,

APPENDIX 1 TERMINOLOGY, ACRONYMS AND ABBREVIATIONS

ABL	Allocated Baseline
ACD	Allocated Configuration Documentation
CAGE	Commercial And Government Entity
CBL	Contract Baseline
CCB	Configuration Control Board
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CI	Configuration Item
CM	Configuration Management
CMgr	Configuration Manager
CMP	Configuration Management Plan
COTS	Commercial Off The Shelf
CSCI	Computer Software Configuration Item
CVP	Contract Variation Proposal
DDQS	Design, Develop and Qualify the Solution
DMP	Data Management Plan
DTC	Document Type Code
ECP	Engineering Change Proposal
ECR	Engineering Change Request
FAT	Factory Acceptance Test
FBL	Functional Baseline
FCA	Functional Configuration Audit
FCD	Functional Configuration Documentation
FQR	Final Qualification Review
GSSDD	Global System/Segment Design Document
GSS	Global System/Segment Specification
HCMD	Hardware Configuration Management Data
HWCI	Hardware Configuration Item
HwCDR	Hardware Critical Design Review
HwPDR	Hardware Preliminary Design Review
HwRR	Hardware Requirements Review
HwTRR	Hardware Test Readiness Review
ICD	Interface Control Document
ILSM	Integrated Logistic Support Manager
ILSP	Integrated Logistic Support Plan
IRS	Interface Requirement Specification
LRU	Line Replaceable Unit
NDI	Non Developmental Item
OEM	Original Equipment Manufacturer
PBL	Product Baseline
PBS	Product Breakdown Structure
PCA	Physical Configuration Audit

PCD	Product Configuration Documentation
PCR	Problem Change Report
PDCS	Prepare and Deliver Customer Service
PDP	Product Data Package
PDR	Preliminary Design Review
PIDS	Prime Item Development Specification
PM	Project Manager
PMD	Procure, Make and Deliver
PMP	Project Management Plan
PR	Problem Report
PTR	Platform Test Readiness
QAM	Quality Assurance Manager
QMP	Quality Management Plan
RFD	PJ :Request For Deviation
RFW	Request For Waiver
RTM	Requirements Traceability Matrix
SAT	Site Acceptance Test
SDR	System Design Review
SEM	System Engineering Manager
SEMP	System Engineering Management Plan
SFR	Solution Functional Review
SOW	Statement Of Work
SRS	Software Requirements Specification
SRR	System Requirements Review
SRU	Shop Replaceable Unit
SSDD	System/Segment Design Document
SS	System/Segment Specification
STRR	System Test Readiness Review
SwADR	Software Architecture and Design Review
SwCRR	Software Component Readiness Review
SwIRR	Software Increment/Iteration Release Review
SwRR	Software Requirements Review
TQR	Technical Qualification Review
TRR	Test Readiness Review
VDD	Version Delivery Description
WP	Work Package
WPM	Work Package Manager