



International Civil Aviation Organization

**THE SEVENTH MEETING OF AERONAUTICAL
TELECOMMUNICATION NETWORK (ATN)
TRANSITION TASK FORCE OF APANPIRG**

Shanghai, China, 18-22 April 2005.

ATNTTF/7-WP/12



Agenda Item 4: Review changes to AMHS Description

**AMHS ADDRESSING SCHEME AND PRIVATE MANAGEMENT DOMAIN
NAME VALUE FOR EACH STATE IN THE ASIA AND PACIFIC REGION**

(Presented by Hong Kong, China)

SUMMARY

This working paper outlines the Translated Form (XF) and Common AMHS Addressing Scheme (CAAS) Addressing Scheme and presents a draft of the AMHS Addressing Scheme and Private Management Domain (PRMD) value for each State/Air Traffic Service Organisation (ATSO) in the ASIA/PAC Region for comment and endorsement by the ATN Transition Task Force Working Group.

1. Introduction

To facilitate the orderly, systematic and global implementation of the AMHS to replace the aging AFTN and CIDIN, the ICAO Secretary General issued in May 2003 a State Letter referenced SP 54/1-03/39 concerning the development of AMHS Addressing Scheme and Private Management Domain (PRMD) Name Value. So far Hong Kong, China and Maldives are the only two Management Domains (MDs) which have declared the use of CAAS scheme in the ASIA/PAC Region. Apparently, the unenthusiastic responses from other states/authorities may be due to the lack of clear understanding of the concept.

As it was considered important to have the proper address developed well before AMHS implementation in the Region, the APANPIRG/15 Meeting requested Hong Kong, China to develop a comprehensive draft of AMHS Addressing Scheme and PRMD value for each State/ATSO in the ASIA/PAC Region with options of both XF and CAAS addresses. The draft proposal would then be presented to the 7th Meeting of the Asia Pacific ATNTTF to be held in Shanghai from 18-22 April 2005 for review, comment and endorsement. Hong Kong, China has also been tasked by ATNTTF WG/11 and WG/12 to update the AMHS Naming Plan as the draft 3rd Edition for review by this meeting.

2. Comparison between XF and CAAS Addressing Scheme

Two Message Handling System-Form (MF) Addressing Schemes are defined in Doc 9705, namely the Translated Form (XF) Addressing Scheme and Common AMHS Addressing Scheme (CAAS). The address under these two schemes consists of only two components: Management Domain (MD) Identifier and AMHS User Identifier.

The MD Identifier includes three standard attributes, viz. *country-name*, *administration-domain-name* and *private-domain-name (PRMD-name)*. The former two take the common values of “XX” and “ICAO” respectively in both schemes. For the PRMD-name, XF takes on ICAO Nationality Letters as specified in Doc7910 while CAAS takes the value declared by respective AMHS MDs.

For the AMHS User identifier, two standard attributes, i.e. *organisation-name* and *organisation-unit-name-1*, are included in both addressing schemes, but CAAS requires in addition the *common-name* attribute.

The PRMD-name, organisation name, organisation-unit-name-1 and common-name of XF and CAAS schemes using Hong Kong, China as an example are illustrated in the following table :-

Identifier	Attributes	XF	CAAS
Management Domain Identifier	<i>country-name</i>	XX	XX
	<i>administration-domain-name</i>	ICAO	ICAO
	<i>private-domain-name (PRMD-name)</i>	VH	HongKong
AMHS User Identifier	<i>organisation-name (O)</i>	AFTN	HKGCAD
	<i>organisation-unit-name-1 (OU1)</i>	VHHHZQZX	VHHH
	<i>common-name (CN)</i>	(nil)	VHHHZQZX

Values in plain text are fixed.

Values in **bold** are variables and declared by respective AMHS MD.

Values underlined are given values for address resolution.

2.1 XF Addressing Scheme

XF is only intended for transitional arrangement when both AFTN and AMHS systems co-exist during the initial implementation of AMHS. States/ATSOs which declare the use of XF could still maintain an AFTN system for routing of messages to and from local and international AFTN users before the sunset date (*to be decided by ICAO*), whereas messages to and from the ATN are routed through the AFTN/AMHS gateway for format conversion.

The XF Addressing Scheme is simple to implement because the *organisation-name* always takes the fixed value “AFTN” and the *organisation-unit-name-1* is used to store the AFTN address. Hence, only the *PRMD-name* is required for AFTN to XF address translation and there are no more than 200 of such entries. The ATN SARPs Edition 2 provided the XF addressing requirements. However, the XF scheme does not support the addressing of multiple MTAs within a MD for more operational choice by States/ATSOs. For example, having two MTAs as entry/exit points of a MD can serve the

purpose of load balancing as well as providing a hot-backup site to enhance the performance and availability of the AMHS service.

The drawback on the use of XF is that, unlike the CAAS that allows multiple *organisation-name* values, XF supports only one value. Hence an AMHS initially using XF addressing will need to be changed back to CAAS addressing at a later time (when the system will be in operation delivering live traffic). With this in conjunction with the limited value (i.e. for simplicity) of XF addressing, the ATN SARPs Edition 3 encourages the direct use of CAAS addressing right at the beginning of AMHS implementation.

2.2 Common AMHS Addressing Scheme (CAAS)

CAAS supports both transitional (AFTN plus AMHS) and pure AMHS environment. In a pure AMHS environment, only CAAS addresses are used and the routing decision rests on the router and/or MTA depending on the MTA routing policy. No address conversion is needed and hence XF address does not play any role here.

The CAAS offers greater flexibility in assigning values to the *organisation-unit-name-1 (OU1)* and *common-name (CN)* attributes. It opens up the possibility for the MD to select any desirable values on *OU1* and *CN* after the sunset date and hence give rise to a user-friendly address and more importantly, higher scalable of service even down to personal level.

To facilitate smooth migration, *OU1* attribute is initially used to store 4-letter location indicator(s) categorized under *organisation* attribute whereas *CN* is deployed to keep the existing AFTN address during the transition period. After the transition period, the values of *OU1* and *CN* could be changed or re-assigned by the respective MDs in accordance with the guidelines to be developed by ICAO.

The CAAS requires each AMHS MD to maintain and update the latest *organisation-name* and additional *organisation-unit-name-1* values declared by all AMHS MDs. The complexity of maintenance and updating of these values will grow with the size of AMHSs in use globally. To ease the problem on address resolution in CAAS, Directory Service (DIR), which is an Extended AMHS function, should be used. For information, DIR had been included as one of the optional elements in the ATN SARPs.

3. PRMD-name value of the Management Domain identifier

PRMD-name takes either the ICAO Nationality Letters as specified in Doc7910 or values declared by the respective AMHS MDs. The Nationality Letters will be taken as the default values if States/ATSOs do not respond to ICAO's State Letter mentioned in paragraph 1 above. Hence, values of the *PRMD-name* may take any one of the following three forms: -

- (a) Value declared by AMHS MD which is different from the Nationality Letter; e.g. Hong Kong, China declared the value "HongKong" as *PRMD-name*.
- (b) Value declared by AMHS MD but follows the Nationality Letter, e.g. New Zealand declared the value "NZ" as *PRMD-name*.
- (c) Value from the default Nationality Letter assigned by ICAO when the AMHS MD does not respond to the ICAO State Letter, e.g. value "RP" is assigned to the Philippines as *PRMD-name* by ICAO.

Table 1a gives a summary of the *PRMD-name* values of the AMHS MD in the ASIA/PAC Region currently registered with ICAO.

3.1 PRMD-name value for XF

In the XF Addressing Scheme, the *organisation-name* value is fixed as “AFTN” and there is no *common-name* attribute. Therefore, only the *PRMD-name* is required by the AMHS MD for AFTN/XF address translation. To streamline the choice of *PRMD-name* value and to simplify the conversion, it would be more convenient and logical to make use of the Nationality Letters in AFTN location indicator as the *PRMD-name* value. Table 1b gives the suggested values if States/ATSOs in ASIA/PAC choose to use XF for the time being.

3.2 PRMD-name value for CAAS

In CAAS, the *organisation-name* value is not fixed. To minimize the influence of the legacy AFTN address structure on CAAS and to present explicitly the name of the States/ATSOs administering the AMHS MD, it would be advisable to use the full name of the States/ATSOs as the *PRMD-name* value. This is given in Table 1c.

4. Defining Organisation-name and Organisation-unit-name-1 for CAAS

On top of the *PRMD-name*, the *organisation-name* is also required for AFTN to CAAS address resolution. It may take a value that represents a geographical unit or identifies an organisation. The syntax and values are to be defined by the States/ATSOs. States/ATSOs selecting CAAS are required to provide at the same time a group of 4-letter location indicators associated to the selected *organisation-name* value. These location indicators constitute the *organisation-unit-name-1* values to facilitate address conversion and therefore shall also be provided to ICAO for publication. Examples on CAAS deployment in the Asia Pacific Region are given below:

Example 1 : CAAS with *organisation-name* to identify an organisation

State/ATSO: A

<i>PRMD-name</i>	B
<i>Organisation-name</i>	x
<i>Organisation-unit-name-1</i>	[XXXX]

B = name of State/ATSO in alphanumeric characters

x = name of the organisation in alphanumeric characters. The syntax and value are to be defined by the considered State/ATSO

[XXXX] = 4-letter AFTN location indicator(s) that is associated with the organisation

e.g. COUNTRYABCD

<i>PRMD-name</i>	COUNTRYABCD
<i>Organisation-name</i>	CAANAME
<i>Organisation-unit-name-1</i>	VKKK
	VKKA
	VKSA
	VKSP

Example 2 : CAAS with *organisation-name* to represent a geographical unit

State/ATSO: A

<i>PRMD-name</i>	B
<i>Organisation-name</i>	[PPPP]
<i>Organisation-unit-name-1</i>	n[XXXX]

[PPPP] = 4-letter AFTN location indicator representing a geographical unit
 n[XXXX] = n number of 4-letter AFTN location indicator(s) that is associated with the unit

e.g. COUNTRYMNPQ

<i>PRMD-name</i>	COUNTRYMNPQ
<i>Organisation-name</i>	VZSS
<i>Organisation-unit-name-1</i>	VZAC
	VZAG
	VZAH
	VZAP
	VZAR
	VZAT
	VZJC
	VZSL
	VZSS

The above examples involve one single MTA. However, it is possible to deploy multiple MTAs within the AMHS MD when the area of the States/ATSOs or the size of the organisations is big enough for consideration of segregation. In this case, more than one *organisation-name* value, each associated with a number of location indicators, shall be defined and provided to ICAO for publication.

Example 3 : CAAS with *organisation-name* to represent a geographical unit and more than one MTA within the MD

State/ATSO: A

<i>PRMD-name</i>	B
<i>Organisation-name</i>	m[PPPP]
<i>Organisation-unit-name-1</i>	n[XXXX] per [PPPP]

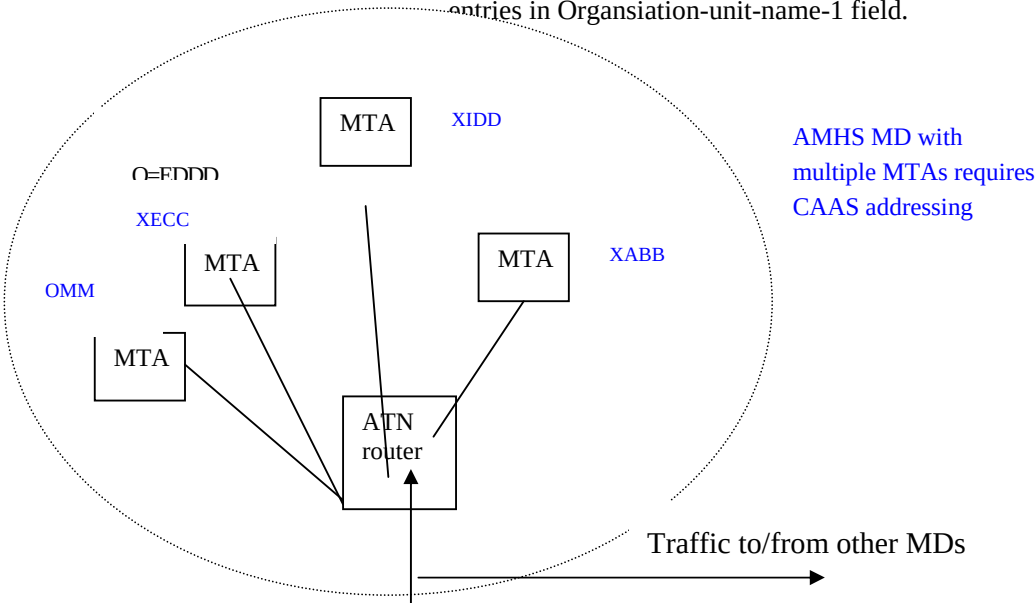
m[PPPP] = m number of 4-letter location indicator each representing different geographical unit

$n[XXXX] =$ *n number of 4-letter location indicator(s) that are associated with a particular geographical unit*

e.g. COUNTRYXYZ

<i>PRMD-name</i>	COUNTRYXYZ			
<i>Organisation-name</i>	XECC	XABB	XOMM	XIDD
<i>Organisation-unit-name-1</i>	XE**	XA**	XO**	XI**

Wildcard (*) may be used to reduce the number of entries in Organsiation-unit-name-1 field.



- Note:
- 1. Each MTA, as an end system, should have its own NSAP address.
 - 2. Traffic between MTAs within the domain is a local matter.

5. Proposed CAAS Addressing Scheme for States/ATSOs in ASIA/PAC Region

Table 2a provides suggested values for the CAAS for all States/ATSOs in the ASIA/PAC Region assuming each State deploys one MTA. Table 2b provides examples of CAAS for some States/ATSOs in the ASIA/PAC Region assuming multiple MTAs are deployed. States/ATSOs shall refer to the examples given to develop their own CAAS address schemes for single or multiple MTAs option.

6. Recommendation

The Meeting is invited to

- (a) review and endorse the proposed AMHS Addressing Scheme and PRMD value for each State/ATSO in the ASIA/PAC Region as stated in this Paper;

- (b) ask ICAO to issue another State letter requesting States to adopt the AMHS Address System and PRMD value as proposed in this paper for incorporation in the ASIA/PAC ATS Message Handling System (AMHS) Naming Plan; and
- (c) take note of the recommendation in Edition 3 of Doc 9705 that “ An AMHS MD should implement the CAAS at the earliest opportunity ” and encourage States/ATSOs to use CAAS directly in their AMHS transition/implementations.
- (d) review and endorse the draft 3rd Edition of AMHS Naming Plan as provided in the Attachment to this paper.

Table 1a**Registered PRMD-name values of the AMHS MD in ASIA/PAC region**

Items in **Bold** identify value explicitly provided by State and are different from Nationality Letter.
 Items in *Italics* identify value explicitly provided by States/ATSOs but follows the Nationality Letter.
 Items in normal font identify default Nationality Letter assigned by ICAO to States/ATSOs.

State	AMHS Address Specification			
	Nationality Letters or Designator	Country-name attribute	ADMD-name attribute	PRMD-name attribute
American Samoa	NST [‡]	XX	ICAO	NST
Australia	Y [‡]	XX	ICAO	Y
Bangladesh	VG	XX	ICAO	VG
Bhutan	VQ	XX	ICAO	VQ
Brunei Darussalam	WBSB, WBAK	XX	ICAO	WB
Cambodia	VD	XX	ICAO	VD
<i>China</i>	<i>ZP, ZS, ZU, ZW, ZG,ZH,ZL, ZY, ZB</i>	<i>XX</i>	<i>ICAO</i>	<i>ZB</i>
Cook Islands	NC	XX	ICAO	NC
Dem. People's Rep. Of Korea	ZK	XX	ICAO	ZK
Democratic Republic of Timor-Leste	WP	XX	ICAO	WP
Fiji	NF	XX	ICAO	NF
French Polynesia	NT	XX	ICAO	NT
Hong Kong (China)	VH	XX	ICAO	HongKong
Wallis and Futuna Island (France)	NL	XX	ICAO	NL
India	VA, VI, VO, VE	XX	ICAO	VA
Indonesia	WA,WI,WR	XX	ICAO	WA
<i>Japan</i>	<i>RJ,RO</i>	<i>XX</i>	<i>ICAO</i>	<i>RJ</i>

Kiribati	NG	XX	ICAO	NG
Lao People's Dem. Rep.	VL	XX	ICAO	VL
Macau (China)	VM	XX	ICAO	VM
<i>Malaysia</i>	<i>WB</i>	<i>XX</i>	<i>ICAO</i>	<i>WB</i>
<i>Malaysia (Peninsular)</i>	<i>WM</i>	<i>XX</i>	<i>ICAO</i>	<i>WM</i>
<i>Maldives</i>	<i>VR</i>	<i>XX</i>	<i>ICAO</i>	<i>VR</i>
Marshall Islands (U.S.)	PK	XX	ICAO	PK
Micronesia (Federated States of)	PT	XX	ICAO	PT
Mongolia	ZM	XX	ICAO	ZM
Myanmar	VY	XX	ICAO	VY
Nauru	AN	XX	ICAO	AN
Nepal	VN	XX	ICAO	VN
New Caledonia (France)	NW	XX	ICAO	NW
<i>New Zealand</i>	<i>NZ</i>	<i>XX</i>	<i>ICAO</i>	<i>NZ</i>
Niue Island (New Zealand)	NI	XX	ICAO	NI
Pakistan	OP	XX	ICAO	OP
Palau Islands (U.S.)	PTR*	XX	ICAO	PTR
<i>Papua New Guinea</i>	<i>AY</i>	<i>XX</i>	<i>ICAO</i>	<i>AY</i>
Philippines	RP	XX	ICAO	RP
Rep. Of Korea	RK	XX	ICAO	RK
Samoa	NS	XX	ICAO	NS
Singapore	WS	XX	ICAO	WS
Solomon Islands	AG	XX	ICAO	AG
Sri Lanka	VC	XX	ICAO	VC
Tai Wan (China)	RC	XX	ICAO	RC

Thailand	VT	XX	ICAO	VT
Tonga	NFT [±]	XX	ICAO	NFT
Tuvalu	NGF [±]	XX	ICAO	NGF
Vanuatu	NV	XX	ICAO	NV
Viet Nam	VV	XX	ICAO	VV

Table 1b

Suggested PRMD-name values of the AMHS MD in ASIA/PAC region
assuming all States/ATSOs using XF

States	AMHS Address Specification			
	Nationality Letters or Designator	Country-name attribute	ADMD-name attribute	PRMD-name attribute
American Samoa	NST*	XX	ICAO	NST
Australia	Y*	XX	ICAO	Y
Bangladesh	VG	XX	ICAO	VG
Bhutan	VQ	XX	ICAO	VQ
Brunei Darussalam	WBSB, WBAK	XX	ICAO	WB
Cambodia	VD	XX	ICAO	VD
China	ZP, ZS, ZU, ZW, ZG,ZH,ZL, ZY, ZB	XX	ICAO	ZB
Cook Islands	NC	XX	ICAO	NC
Dem. People's Rep. Of Korea	ZK	XX	ICAO	ZK
Democratic Republic of Timor-Leste	WP	XX	ICAO	WP
Fiji	NF	XX	ICAO	NF
French Polynesia	NT	XX	ICAO	NT
Hong Kong (China)	VH	XX	ICAO	VH
Wallis and Futuna Island (France)	NL	XX	ICAO	NL
India	VA, VI, VO, VE	XX	ICAO	VA
Indonesia	WA,WI,WR	XX	ICAO	WA
Japan	RJ,RO	XX	ICAO	RJ
Kiribati	NG	XX	ICAO	NG

Lao People's Dem. Rep.	VL	XX	ICAO	VL
Macau (China)	VM	XX	ICAO	VM
Malaysia	WB	XX	ICAO	WB
Malaysia (Peninsular)	WM	XX	ICAO	WM
Maldives	VR	XX	ICAO	VR
Marshall Islands (U.S.)	PK	XX	ICAO	PK
Micronesia (Federated States of)	PT	XX	ICAO	PT
Mongolia	ZM	XX	ICAO	ZM
Myanmar	VY	XX	ICAO	VY
Nauru	AN	XX	ICAO	AN
Nepal	VN	XX	ICAO	VN
New Caledonia (France)	NW	XX	ICAO	NW
New Zealand	NZ	XX	ICAO	NZ
Niue Island (New Zealand)	NI	XX	ICAO	NI
Pakistan	OP	XX	ICAO	OP
Palau Islands (U.S.)	PTR*	XX	ICAO	PTR
Papua New Guinea	AY	XX	ICAO	AY
Philippines	RP	XX	ICAO	RP
Rep. Of Korea	RK	XX	ICAO	RK
Samoa	NS	XX	ICAO	NS
Singapore	WS	XX	ICAO	WS
Solomon Islands	AG	XX	ICAO	AG
Sri Lanka	VC	XX	ICAO	VC
Tai Wan (China)	RC	XX	ICAO	RC
Thailand	VT	XX	ICAO	VT

Tonga	NFT [±]	XX	ICAO	NFT
Tuvalu	NGF [±]	XX	ICAO	NGF
Vanuatu	NV	XX	ICAO	NV
Viet Nam	VV	XX	ICAO	VV

Table 1c

Suggested PRMD-name values of the AMHS MD in ASIA/PAC region
assuming all States/ATSOs using CAAS

States	AMHS Address Specification			
	Nationality Letters or Designator	Country-name attribute	ADMD-name attribute	PRMD-name attribute
American Samoa	NST*	XX	ICAO	SAMOA-US
Australia	Y*	XX	ICAO	AUSTRALIA
Bangladesh	VG	XX	ICAO	BANGLADESH
Bhutan	VQ	XX	ICAO	BHUTAN
Brunei Darussalam	WBSB, WBAK	XX	ICAO	BRUNEI
Cambodia	VD	XX	ICAO	CAMBODIA
China	ZP, ZS, ZU, ZW, ZG,ZH,ZL, ZY, ZB	XX	ICAO	CHINA
Cook Islands	NC	XX	ICAO	COOK-IS
Dem. People's Rep. Of Korea	ZK	XX	ICAO	DP-REP-KOREA
Democratic Republic of Timor-Leste	WP	XX	ICAO	EAST-TIMOR
Fiji	NF	XX	ICAO	FIJI
French Polynesia	NT	XX	ICAO	POLYNESIA
Hong Kong (China)	VH	XX	ICAO	HONGKONG
Wallis and Futuna Island (France)	NL	XX	ICAO	WALLIS-IS
India	VI, VA, VO, VE	XX	ICAO	INDIA
Indonesia	WA,WI,WR	XX	ICAO	INDONESIA
Japan	RJ,RO	XX	ICAO	JAPAN
Kiribati	NG	XX	ICAO	KIRIBATI

Lao People's Dem. Rep.	VL	XX	ICAO	LAO
Macau (China)	VM	XX	ICAO	MACAU
Malaysia	WB	XX	ICAO	MALAYSIA
Malaysia (Peninsular)	WM	XX	ICAO	MALAYSIA-PENIN
Maldives	VR	XX	ICAO	MALDIVES
Marshall Islands (U.S.)	PK	XX	ICAO	MARSHALL
Micronesia (Federated States of)	PT	XX	ICAO	MICRONESIA
Mongolia	ZM	XX	ICAO	MONGOLIA
Myanmar	VY	XX	ICAO	MYANMAR
Nauru	AN	XX	ICAO	NAURU
Nepal	VN	XX	ICAO	NEPAL
New Caledonia (France)	NW	XX	ICAO	NEW-CALEDONIA
New Zealand	NZ	XX	ICAO	NEW-ZEALAND
Niue Island (New Zealand)	NI	XX	ICAO	NIUE-IS
Pakistan	OP	XX	ICAO	PAKISTAN
Palau Islands (U.S.)	PTR [‡]	XX	ICAO	PALAU-IS
Papua New Guinea	AY	XX	ICAO	PAPUA-NG
Philippines	RP	XX	ICAO	PHILIPPINES
Rep. Of Korea	RK	XX	ICAO	REP-KOREA
Samoa	NS	XX	ICAO	SAMOA
Singapore	WS	XX	ICAO	SINGAPORE
Solomon Islands	AG	XX	ICAO	SOLOMON-IS
Sri Lanka	VC	XX	ICAO	SRI-LANKA
Tai Wan (China)	RC	XX	ICAO	TAIBEI
Thailand	VT	XX	ICAO	THAILAND

Tonga	NFT [±]	XX	ICAO	TONGA
Tuvalu	NGF [±]	XX	ICAO	TUVALU
Vanuatu	NV	XX	ICAO	VANUATU
Viet Nam	VV	XX	ICAO	VIETNAM

Table 2a

Suggested CAAS Addressing Scheme
assuming all States/ATSOs in ASIA/PAC deploy one MTA

States	AMHS Address Specification				
	Country - name attribute	ADMD- name attribute	PRMD- Name attribute	Organisati on- name	tion-unit-name-1
American Samoa	XX	ICAO	SAMOA-US	NSTU	All 4-letter location indicators of the State contained in Doc7910
Australia	XX	ICAO	AUSTRALIA	YSSY	Ditto
Bangladesh	XX	ICAO	BANGLADES H	VGZR	Ditto
Bhutan	XX	ICAO	BHUTAN	VQPR	Ditto
Brunei Darussalam	XX	ICAO	BRUNEI	WBSB	Ditto
Cambodia	XX	ICAO	CAMBODIA	VDPP	Ditto
China	XX	ICAO	CHINA	ZBBB	Ditto
Cook Islands	XX	ICAO	COOK-IS	NCRG	Ditto
Dem. People's Rep. Of Korea	XX	ICAO	DP-REP-KOREA	ZKKK	Ditto
Democratic Republic of Timor-Leste	XX	ICAO	EAST-TIMOR	WPAT	Ditto
Fiji	XX	ICAO	FIJI	NFFN	Ditto
French Polynesia	XX	ICAO	POLYNESIA	NTAA	Ditto
Hong Kong (China)	XX	ICAO	HONGKONG	HKGCAD	Ditto
Wallis and Futuna Island (France)	XX	ICAO	WALLIS-IS	NLWW	Ditto
India	XX	ICAO	INDIA	VABB	Ditto
Indonesia	XX	ICAO	INDONESIA	WAAA	Ditto
Japan	XX	ICAO	JAPAN	RJAA	Ditto
Kiribati	XX	ICAO	KIRIBATI	NGTA	Ditto

Lao People's Dem. Rep.	XX	ICAO	LAO	VLVT	Ditto
Macau (China)	XX	ICAO	MACAU	VMMC	Ditto
Malaysia	XX	ICAO	MALAYSIA	WBFC	Ditto
Malaysia (Peninsular)	XX	ICAO	MALAYSIA-PENIN	WMKK	Ditto
Maldives	XX	ICAO	MALDIVES	VRMM	Ditto
Marshall Islands (U.S.)	XX	ICAO	MARSHALL	PKMJ	Ditto
Micronesia (Federated States of)	XX	ICAO	MICRONESIA	PTKK	Ditto
Mongolia	XX	ICAO	MONGOLIA	ZMUB	Ditto
Myanmar	XX	ICAO	MYANMAR	VYYY	Ditto
Nauru	XX	ICAO	NAURU	ANAU	Ditto
Nepal	XX	ICAO	NEPAL	VNKT	Ditto
New Caledonia (France)	XX	ICAO	NEW-CALEDONIA	NWWW	Ditto
New Zealand	XX	ICAO	NEW-ZEALAND	NZAA	Ditto
Niue Island (New Zealand)	XX	ICAO	NIUE-IS	NIUE	Ditto
Pakistan	XX	ICAO	PAKISTAN	OPKC	Ditto
Palau Islands (U.S.)	XX	ICAO	PALAU-IS	PTRO	Ditto
Papua New Guinea	XX	ICAO	PAPUA-NG	AYPY	Ditto
Philippines	XX	ICAO	PHILIPPINES	RPLL	Ditto
Rep. Of Korea	XX	ICAO	REP-KOREA	RKSI	Ditto
Samoa	XX	ICAO	SAMOA	NSFA	Ditto
Singapore	XX	ICAO	SINGAPORE	WSSS	Ditto
Solomon Islands	XX	ICAO	SOLOMON-IS	AGGH	Ditto
Sri Lanka	XX	ICAO	SRI-LANKA	VCCC	Ditto
Tai Wan (China)	XX	ICAO	TAIBEI	RCTP	Ditto

Thailand	XX	ICAO	THAILAND	VTBB	Ditto
Tonga	XX	ICAO	TONGA	NFTF	Ditto
Tuvalu	XX	ICAO	TUVALU	NFGU	Ditto
Vanuatu	XX	ICAO	VANUATU	NVVV	Ditto
VietNam	XX	ICAO	VIETNAM	VVVV	Ditto

Table 2b

Suggested sample CAAS Addressing Scheme
for some States/ATSOs in ASIA/PAC deploying multiple MTAs

States	AMHS Address Specification				
	Country-name attribute	ADMD-name attribute	PRMD-name attribute	Organisation-name	tion-unit-name-1
Australia	XX	ICAO	AUSTRALIA	YBBN	YA*, YB*, YC*, YD*, YE*, YF*, YH*, YI*, YJ*, YK*
				YSSY	YL*, YM*, YN*, YO*, YP*, YQ*, YR*, YS*, YT*, YU*, YV*, YW*, YY*
China	XX	ICAO	CHINA	ZBBB	ZB*, ZS*, ZW*, ZY*, ZU*
				ZGGG	ZG*, ZJ*, ZH*, ZL*, ZP*
Japan	XX	ICAO	JAPAN	RJAA	RJ*
				ROAH	RO*
Thailand	XX	ICAO	THAILAND	VTBB	VTB*, VTC*
				VTSS	VTP*, VTS*, VTU*

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**ASIA/PACIFIC
ATS Message Handling System (AMHS) Naming Plan**

THIRD EDITION - APRIL 2005

EXECUTIVE SUMMARY

This document provides planning and technical guidance on the naming convention for the transition of ground Aeronautical Fixed Telecommunication Network (AFTN) services to the ATS Message Handling System (AMHS) within the ASIA/PAC Region.

Based upon the ATN SARPs as published in ICAO Annex 10 and ICAO Doc. 9705, naming and addressing plans are required to be developed by ICAO regions concerned. These Regional Plans will provide guidance to States in the assignment and registration of addresses and names to be used for the Aeronautical Telecommunication Network (ATN).

The ASIA/PAC ATN AMHS Naming Plan aligns itself with the global AMHS naming scheme.

To maintain compatibility within the region, the Common AMHS Addressing Scheme (CAAS) Address format should be adopted where States are about to start their AMHS implementation programmes. This will ensure compatibility with the proposed global AMHS naming scheme.

A formal registration authority is established within ICAO, which will maintain a register for registering all Private Management Domains (PRMDs).

This document was adopted by 12th Meeting of APANPIRG held in 2001 for distribution to States in the ASIA/PAC and adjacent regions. It was further updated in April 2005 to include a comprehensive elaboration on the Common AMHS Addressing Scheme (CAAS), in particular the Private Management Domain Name value for States in the ASIA/PAC region.

1. INTRODUCTION

This document presents the naming assignment conventions for allocating Originator/Recipient (O/R) names to be used for the ATS Message Handling System (AMHS) in the ASIA/PAC Region.

The information contained in this document is drawn from a number of developments from the third meeting of the ATN Panel and planning activities in Europe.

1.1 Objectives

The objective of the document is to provide guidance in the naming convention to be used for the AMHS in the ASIA/PAC Region.

1.2 Scope

The scope of the document includes:

- Describing the attributes of the AMHS address format, and
- Recommending the values for the relevant attributes that are to be used in the AMHS address.

The ASIA/PAC Regional ATN AMHS naming convention presented here will comply with the relevant formats as specified in ICAO Doc. 9705.

The ASIA/PAC Regional ATN AMHS Naming Plan defines the method for assigning values to each of the relevant attributes of the AMHS address. States may choose to assign their AMHS addresses based upon the recommendations made here.

1.3 References

Reference 1 Manual of Technical Provisions for the ATN (Doc 9705-AN/956) Third Edition

Reference 2 ICAO Location Indicators – Document 7910

1.4 Definitions

MF-Address (MHS-form address) is the Originator/Recipient name of an AMHS user.

CAAS-Address (Common AMHS Address Scheme) is a MF-Address of which the organization-name attribute identifying the user within an AMHS Management Domain is selected by the Management Domain itself and shall be supplied to ICAO for publication.

XF-Address (Translated-form address) is a particular MF-Address of which all attributes identifying the user within an AMHS Management Domain may be converted by an algorithmic method to and from an AFTN form address.

1.5 Abbreviations

The following abbreviations are used in this document:

ADMD	Administration Management Domain
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AFTN	Aeronautical Fixed Telecommunication Network
AMHS	ATS Message Handling System
ATSMHS	ATS Message Handling Service
APANPIRG	Asia Pacific Air Navigation Planning and Implementation Regional Group
ATN	Aeronautical Telecommunication Network
ATNTTF	APANPIRG ATN Transition Task Force
ATS	Air Traffic Service
ATSO	Air Traffic Service Organizations
CAAS	Common AMHS Addressing Scheme
ICAO	International Civil Aviation Organization
ITU-T	International Telecommunication Union Telecommunication Standardization Sector
MHS	Message Handling Service
MF	MHS Form
MTA	Message Transfer Agent
O/R	Originator/Recipient
PRMD	Private Management Domain
SARP	Standards and Recommended Practices
XF	Translated Form

2. AMHS NAMING CONVENTION

The Asia Pacific AMHS naming convention is based on a number of factors that have arisen from the third meeting of the ATN Panel held in Montreal during the 7th to 18th of February 2000 and the results from other AMHS planning activities developed by other regions.

To ensure continuity and compatibility with other AMHS naming conventions, the AMHS naming convention for the ASIA/PAC Region was developed based upon the outcome of the European SPACE¹ Project.

2.1 MHS Addressing Scheme

There are four types of address form in CCITT X.400 Message Handling System. The addressing scheme of AMHS adopts the mnemonic form address and the attributes contain in this form are described in the table below:

¹ SPACE (Study and Planning of AMHS Communications in Europe) is a project supported by the European Commission and is the combined efforts of the participating countries and organizations from EUROCONTROL, France, Germany, Spain and the United Kingdom.

Table 2-1 Mnemonic form address attributes of MHS

Attribute	Notation	Maximum Length	Comment
Country-name	C	3	
ADMD	A	16	
PRMD	P	16	
Organization-name	O	64	
Organizational Unit name	OUn	4 x 32	n = 1 – 4
Common name	CN		
Personal name	S	40	Surname
	G	16	Given name
	I	5	Initials
	GQ	3	Generation Qualifier
Domain-defined-attributes	DDA	Varies	(DDA type) = (DDA Value), up to 4 attributes

2.2 MF-Addressing Scheme in AMHS

Each AMHS user within an AMHS Management Domain is assigned an Originator/Recipient (O/R) name, which is referred to as a MF-address (MHS-form address).

Two types of MF-address in AMHS are defined in Doc9705 (reference 1), namely Common AMHS Addressing Scheme (CAAS) and XF (Translated-form) Addressing Scheme. They differ in the number of attributes being selected from mnemonic form of MHS addressing scheme,

The MF-address of an AMHS user (no matter CAAS or XF) shall comprise:

- a) a set of attributes identifying the AMHS Management Domain of which the AMHS user, either direct or indirect, is a service-user; and
- b) a set of attributes identifying unique AMHS user within the AMHS Management Domain,

2.3 Naming Convention For CAAS Format

It is recommended that ICAO register with the ITU-T the ADMD name “ICAO” as an international ADMD under the “XX” country code. It was also recommended that ICAO establishes and maintains a register of PRMDs allocated by air traffic service providers according to the “XX” + “ICAO” address structure. The management of this register would be established and maintained in the same way as the Location Indicators (Doc 7910) and Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services (Doc 8585).

The Air Navigation Commission on the 1st of June 2000 approved these recommendations. On the basis of these recommendations, the ASIA/PAC Region accepted the format for the allocation of the first two attributes used in the O/R name. It was proposed that a common naming convention be used worldwide to help stream line the addressing scheme and to ensure compatibility and consistency with other neighboring

regions. This scheme would be based on the work that has been ongoing in Europe. It was also stressed that if States have not already started their implementation programmes for AMHS that when planning to do so they should adopt the CAAS-Address format and not the XF-Address format.

The ASIA/PAC Region will adopt the proposed worldwide CAAS-Address format, which uses the following attributes to define the O/R name during the transition phase from AFTN to AMHS:

1. Country-name;
2. ADMD;
3. PRMD;
4. Organization-name;
5. Organizational-unit-name 1; and
6. Common Name.

2.3.1 Country Name

The country name is a mandatory requirement and shall consist of the two alphanumeric ISO 3166 Country Code “XX” encoded as a Printable String. The country code “XX” has been adopted, as this is a special code registered by the ITU-T for the purpose of allocation to international organizations, which do not reside within any particular country.

2.3.2 ADMD

The administrative domain is a mandatory requirement and shall consist of the Printable String “ICAO”. ICAO has registered “ICAO” as the ADMD with the ITU-T. By providing the “ICAO” ADMD will allow the addressing schemes to be independent of any constraints that may be imposed by management domains in the global MHS or national regulations that may vary from region to region.

2.3.3 PRMD

The private management domain is an optional requirement as documented in the relevant ITU-T Standards. However, this attribute is mandatory for implementation of AMHS by States in the ASIA/PAC Region as part of the worldwide CAAS-Address format scheme.

The contents of this field can include the ICAO Location Indicator specified in ICAO Document 7910 or the name of the Air Traffic Service Organization (ATSO) that has been registered with ICAO. Where an ATSO has not yet assigned their PRMD then a default value will be allocated, which will use either one or two letters of the ICAO Country Indicator specified in ICAO Document 7910. This has been chosen for its simplistic and non-ambiguous format, which is already managed by ICAO. Hence providing an easier management role for ICAO who will be responsible for maintaining the register of all PRMDs allocated under the ADMD of “ICAO”.

2.3.4 Organization Name

The organization name is used to define the local or national geographical routing information. This information is to be assigned by the ATSO (for example can be based on the ICAO location indicator as specified in ICAO Document 7910 or some other value determined by an ATSO and published by ICAO). Figure 2 - 1 provides a pictorial view of how the organization name can be used in relation with the lower attribute structure.

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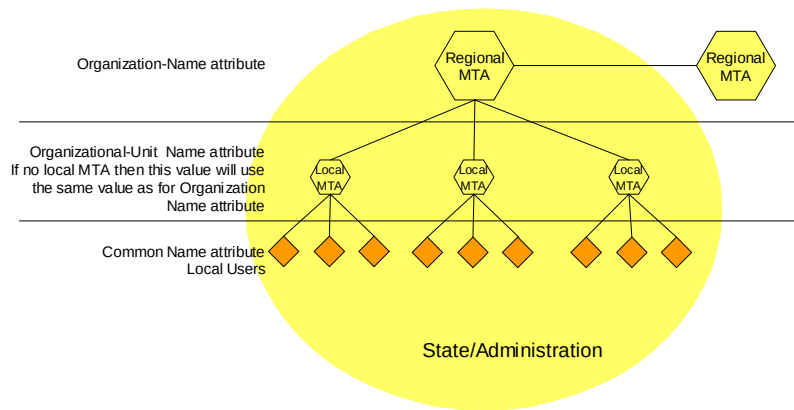


Figure 2 -1 Lower Attribute Structure

2.3.5 Organizational Unit Name OU1

Each State or organization is allocated a unique ATS message organizational name. As all States are familiar with the ICAO four character location indicator defined in ICAO document 7910. It is proposed that the organization unit name 1 use the location indicator to identify the Message Transfer Agent (MTA) site, encoded as a Printable String.

Note: The MTA site may be the MTA name of the server. However there are security issues that need to be addressed to ensure that this arrangement does not cause any unnecessary concerns with service providers that allow the MTA name to be broadcast in this fashion.

2.3.6 Common Name

It is proposed that during the AFTN transition to AMHS that the common name attribute be used to contain the 8-character alphabetical value of the AFTN address indicator of the user, encoded as a Printable String. This shall apply for AFTN users only. Possible example of an O/R address is shown in Table 2-2

Table 2- 2 Example of a CAAS-Address AMHS Naming Convention

Attribute	Assigned By	Value	Comment
Country-name (C)	ITU-T	XX	International Organization
ADMD (A)	ICAO	ICAO	ICAO Responsibility to register
PRMD (P)	ATSO	e.g. THAILAND	ATSO registered private domain with ICAO.
Organization name (O)	ATSO	e.g. VTBB	Local/national geographical information, which can be based on ICAO Location Indicators (Doc 7910)
Organizational-Unit name (OU1)	ATSO	e.g. VTBB	ICAO Location Indicator (Doc 7910)
Common Name (CN)	ATSO	e.g. VTBBYFYX	AFTN address

Note: It is proposed that for a direct AMHS user that an ATSO should be able to assign a suitable name to that user without being restricted to an AFTN address indicator.

2.4 Naming Convention For XF-Address Format

The attributes to be used for the XF-Address format are as described in ICAO Document 9705 and presented below as follows:

1. Country-name;
2. ADMD;
3. PRMD;
4. Organization-name; and
5. Organizational-unit-name 1.

2.4.1 Country Name

As proposed in Section 2.3.1

2.4.2 ADMD

As proposed in Section 2.3.2

2.4.3 PRMD

As proposed in Section 2.3.3

2.4.4 Organization Name

This field has already been defined by ICAO Document 9705. The value of this field contains the encoded printable string “AFTN”.

2.4.5 Organizational Unit Name OU1

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The organizational unit name 1 attribute is used to contain the 8-character alphabetical value of the AFTN address indicator of the user, encoded as a Printable String.

Possible example of an O/R address is shown in Table 2-3

Table 2-3 Example of XF-Address AMHS Naming Convention

Attribute	Assigned By	Value	Comment
Country-name (C)	ITU-T	XX	International Organization
ADMD (A)	ICAO	ICAO	ICAO Responsibility to register
PRMD (P)	ATSO	e.g. Y	ICAO Country Indicator or ATSO registered private domain with ICAO
Organization-name (O)	ATSO	AFTN	AFTN name
Organizational-Unit name (OU1)	ATSO	e.g. YBBBYFYX	AFTN address indicator

2.5 General Use of X.400 O/R Addresses

Note: The address format of X.400 O/R address attributes for sending general non-operational AMHS traffic is a local matter for States/Administrations to implement if they wish to do so and no further advice is provided in this plan.

3. PRMD-name values and Address Scheme Registration

As it is important to have the proper address developed well before the AMHS implementation in the Region, a comprehensive draft of PRMD value and AMHS Addressing Scheme for each State/ATSO in the ASIA/PAC region are developed below. Examples and tables given would assist State/ATSO to understand XF and CAAS address scheme. State/ATSO are recommended to follow the proposal and register to deploy CAAS as early as possible.

3.1 XF Addressing Scheme

XF is only intended for transitional arrangement when both AFTN and AMHS systems co-exist during the initial implementation of AMHS. States/ATSOs declare the use of XF could still maintain an AFTN system for routing of messages to and from local and international AFTN users before the sunset date (to be decided by ICAO), whereas messages to and from the ATN are routed through the AFTN/AMHS gateway for format conversion.

The XF Addressing Scheme is simple to implement because the *organization-name* always takes the fixed value “AFTN” and the *organization-unit-name-1* is used to store the AFTN address. Hence, only the *PRMD-name* is required for AFTN to XF address translation and there are no more than 200 of such entries. The ATN SARPs Edition 2 provided the XF addressing requirements. However, the XF scheme does not support the addressing of multiple MTAs within a MD for more operational choice by States/ATSO. For example, having two MTAs as entry/exit points of a MD can serve the purpose of load balancing as well as providing a hot-backup site to enhance the performance and availability of the AMHS service. The drawback on the use of XF is that, unlike the CAAS that allows multiple *organization-name* values, XF supports only one value. Hence an AMHS initially using XF addressing will need to be changed back to CAAS addressing at a later time (when the system will be in operation delivering live traffic). With this in conjunction with the limited value (i.e. for simplicity) of XF addressing, the ATN SARPs Edition 3 encourages the direct use of CAAS addressing right in the beginning of AMHS implementation.

3.2 Common AMHS Addressing Scheme

CAAS supports both transitional (AFTN plus AMHS) and pure AMHS environment. In a pure AMHS environment, only CAAS addresses are used and the routing decision rests on the router and/or MTA depending on the MTA routing policy. No address conversion is needed and hence XF address does not play any role here.

The CAAS offers greater flexibility in assigning values to the *organization-unit-name-1* (*OU1*) and *common-name* (*CN*) attributes. It opens up the possibility for the MD to select any desirable values on *OU1* and *CN* after the sunset date and hence give rise to a user-friendly address and more importantly, higher scalable service even down to personal level.

To facilitate smooth migration, *OU1* attribute is initially used to store 4-letter location indicator(s) categorized under *organization* attribute whereas *CN* is deployed to keep the existing AFTN address during the transition period. After the transition period, the values of *OU1* and *CN* could be changed or re-assigned by the respective MDs in accordance with the guidelines to be developed by ICAO.

The CAAS requires each AMHS MD to maintain and update the latest *organization-name* and additional *organization-unit-name-1* values declared by all AMHS MDs. The complexity of maintenance and updating of these values will grow with the size of AMHSs in use globally. To ease the problem on address resolution in CAAS, Directory Service (DIR), which is an Extended AMHS function, should be used. For information, DIR had been included as one of the optional elements in the ATN SARPs.

4. PRMD-name value

PRMD-name takes either ICAO Nationality Letters as specified in Doc7910 or values declared by respective AMHS MD. The Nationality Letters will be taken as the default values if States/ATSOs do not respond to ICAO’s State Letter. Hence, values of the *PRMD-name* may take any one of the following three forms: -

(a) Value declared by AMHS MD which is different from Nationality Letter, e.g. Hong Kong, China declared

the value “HongKong” as *PRMD-name*.

(b) Value declared by AMHS MD but follows the Nationality Letter, e.g. New Zealand declared the value “NZ” as *PRMD-name*.

(c) Value from the default Nationality Letter assigned by ICAO when the AMHS MD does not respond to the ICAO State Letter, e.g. value “RP” is assigned to Philippine as *PRMD-name* by ICAO.

4.1 PRMD-name value for XF

In the XF Addressing Scheme, the *organization-name* value is fixed as “AFTN” and there is no *common-name* attribute. Therefore, only the *PRMD-name* is required by AMHS MD for AFTN/XF address translation. To streamline the choice of *PRMD-name* value and to simplify the conversion, it would be more convenient and logical to make use of the Nationality Letters in AFTN location indicator as the *PRMD-name* value. Table 1a gives the suggested values if States/ATSOs in ASIA/PAC choose to use XF for the time being.

4.2 PRMD-name value for CAAS

In CAAS, the *organization-name* value is not fixed. To minimize the influence of the legacy AFTN address structure on CAAS and to present explicitly the name of the States/ATSOs administering the AMHS MD, it would be advisable to use full name of the States/ATSOs as the *PRMD-name* value. This is given in Table 1b.

5. Defining *Organization-name* and *Organization-unit-name-1* for CAAS

On top of *PRMD-name*, *organization-name* is also required for AFTN to CAAS address resolution. It may take a value that represents a geographical unit or identifies an organization. The syntax and values are to be defined by the States/ATSOs. States/ATSOs selecting CAAS are required to provide at the same time a group of 4-letter location indicators associated to the selected *organization-name* value. These location indicators constitute the *organization-unit-name-1* values to facilitate address conversion and therefore shall also be provided to ICAO for publication. Examples on CAAS deployment in the Asia Pacific Region are given below:

Example 1 : CAAS with *organization-name* to identify an organization

State/ATSO: A

<i>PRMD-name</i>	B
<i>Organization-name</i>	x
<i>Organization-unit-name-1</i>	[XXXX]

B= name of State/ATSO in alphanumeric characters

x = name of the organization in alphanumeric characters. The syntax and value are to be defined by the considered State/ATSO.

[XXXX] = 4-letter AFTN location indicator(s) that is associated with the organization

e.g. COUNTRYABCD

<i>PRMD-name</i>	COUNTRYABCD
<i>Organization-name</i>	CAANAME
<i>Organization-unit-name-1</i>	VKKK VKKA VKSA VKSP

Example 2 : CAAS with *organization-name* to represent a geographical unit

State/ATSO: A

<i>PRMD-name</i>	B
<i>Organization-name</i>	[PPPP]
<i>Organization-unit-name-1</i>	n[XXXX]

[PPPP] = 4-letter AFTN location indicator representing a geographical unit

n[XXXX] = n number of 4-letter AFTN location indicator(s) that is associated with the unit

e.g. COUNTRYMNPQ

<i>PRMD-name</i>	COUNTRYMNPQ
<i>Organization-name</i>	VZSS
<i>Organization-unit-name-1</i>	VZAC VZAG VZAH VZAP VZAR VZAT VZJC VZSL VZSS

The above examples involve one single MTA. However, it is possible to deploy multiple MTAs within the AMHS MD when the area of the States/ATSOs or the size of the organizations is big enough for consideration of segregation. In this case, more than one *organization-name* value, each associated with a number of location indicators shall be defined and provided to ICAO for publication.

Example 3 : CAAS with *organization-name* to represent a geographical unit and more than one MTA

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within the MD

State/ATSO: A

<i>PRMD-name</i>	B
<i>Organization-name</i>	m[PPPP]
<i>Organization-unit-name-1</i>	n[XXXX] per [PPPP]

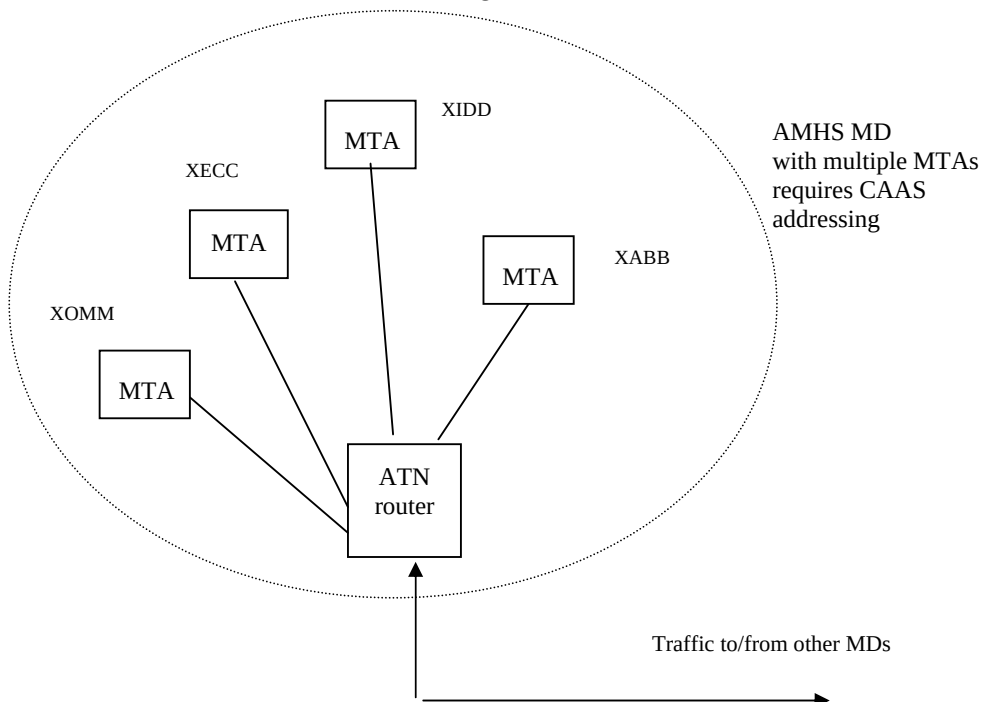
m[PPPP] = m number of 4-letter location indicator each representing different geographical unit

n[XXXX] = n number of 4-letter location indicator(s) that are associated with a particular geographical unit

e.g. COUNTRYXYZ

<i>PRMD-name</i>	COUNTRYXYZ
<i>Organization-name</i>	XECC XABB XOMM XIDD
<i>Organization-unit-name-1</i>	XE** XA** XO** XI**

Wildcard.(*) may be used to reduce the number of entries in Organisation-unit-name-1 field.



Note: 1. Each MTA, as an end system, should have its own NSAP address.

2. Traffic between MTAs within the domain is a local matter.

Table 2a provides suggested values for the CAAS for all States/ATSOs in the ASIA/PAC region assuming each State deploys one MTA. Table 2b provides examples of CAAS for some States/ATSOs in ASIA/PAC region assuming multiple MTAs are deployed. States/ATSOs shall refer to the examples given to develop their own CAAS address scheme for single or multiple MTAs option.

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Table 1a

**Suggested PRMD-name values of the AMHS MD in ASIA/PAC region
assuming all States/ATSOs using XF**

States	AMHS Address Specification			
	Nationality Letters or Designator	Country- name attribute	ADMD- name attribute	PRMD-name attribute
American Samoa	NST*	XX	ICAO	NST
Australia	Y*	XX	ICAO	Y
Bangladesh	VG	XX	ICAO	VG
Bhutan	VQ	XX	ICAO	VQ
Brunei Darussalam	WBSB, WBAK	XX	ICAO	WB
Cambodia	VD	XX	ICAO	VD
China	ZP, ZS, ZU, ZW, ZG,ZH,ZL, ZY, ZB	XX	ICAO	ZB
Cook Islands	NC	XX	ICAO	NC
Dem. People's Rep. Of Korea	ZK	XX	ICAO	ZK
Democratic Republic of Timor-Leste	WP	XX	ICAO	WP
Fiji	NF	XX	ICAO	NF
French Polynesia	NT	XX	ICAO	NT
Hong Kong (China)	VH	XX	ICAO	VH
Wallis and Futuna Island (France)	NL	XX	ICAO	NL
India	VA, VI, VO, VE	XX	ICAO	VA
Indonesia	WA,WI,WR	XX	ICAO	WA
Japan	RJ,RO	XX	ICAO	RJ
Kiribati	NG	XX	ICAO	NG
Lao People's Dem. Rep.	VL	XX	ICAO	VL
Macau (China)	VM	XX	ICAO	VM
Malaysia	WB	XX	ICAO	WB
Malaysia (Peninsular)	WM	XX	ICAO	WM
Maldives	VR	XX	ICAO	VR
Marshall Islands (U.S.)	PK	XX	ICAO	PK

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Micronesia (Federated States of)	PT	XX	ICAO	PT
Mongolia	ZM	XX	ICAO	ZM
Myanmar	VY	XX	ICAO	VY
Nauru	AN	XX	ICAO	AN
Nepal	VN	XX	ICAO	VN
New Caledonia (France)	NW	XX	ICAO	NW
New Zealand	NZ	XX	ICAO	NZ
Niue Island (New Zealand)	NI	XX	ICAO	NI
Pakistan	OP	XX	ICAO	OP
Palau Islands (U.S.)	PTR*	XX	ICAO	PTR
Papua New Guinea	AY	XX	ICAO	AY
Philippines	RP	XX	ICAO	RP
Rep. Of Korea	RK	XX	ICAO	RK
Samoa	NS	XX	ICAO	NS
Singapore	WS	XX	ICAO	WS
Solomon Islands	AG	XX	ICAO	AG
Sri Lanka	VC	XX	ICAO	VC
Tai Wan (China)	RC	XX	ICAO	RC
Thailand	VT	XX	ICAO	VT
Tonga	NFT*	XX	ICAO	NFT
Tuvalu	NGF*	XX	ICAO	NGF
Vanuatu	NV	XX	ICAO	NV
Viet Nam	VV	XX	ICAO	VV

Table 1b

Suggested PRMD-name values of the AMHS MD in ASIA/PAC region
assuming all States/ATSOs using CAAS

States	AMHS Address Specification			
	Nationality Letters or Designator	Country- name attribute	ADMD- name attribute	PRMD-name attribute
American Samoa	NST*	XX	ICAO	SAMOA-US
Australia	Y*	XX	ICAO	AUSTRALIA
Bangladesh	VG	XX	ICAO	BANGLADESH
Bhutan	VQ	XX	ICAO	BHUTAN
Brunei Darussalam	WBSB, WBAK	XX	ICAO	BRUNEI
Cambodia	VD	XX	ICAO	CAMBODIA
China	ZP, ZS, ZU, ZW, ZG,ZH,ZL, ZY, ZB	XX	ICAO	CHINA
Cook Islands	NC	XX	ICAO	COOK-IS
Dem. People's Rep. Of Korea	ZK	XX	ICAO	DP-REP-KOREA
Democratic Republic of Timor-Leste	WP	XX	ICAO	EAST-TIMOR
Fiji	NF	XX	ICAO	FIJI
French Polynesia	NT	XX	ICAO	POLYNESIA
Hong Kong (China)	VH	XX	ICAO	HONGKONG
Wallis and Futuna Island (France)	NL	XX	ICAO	WALLIS-IS
India	VI, VA, VO, VE	XX	ICAO	INDIA
Indonesia	WA,WI,WR	XX	ICAO	INDONESIA
Japan	RJ,RO	XX	ICAO	JAPAN
Kiribati	NG	XX	ICAO	KIRIBATI
Lao People's Dem. Rep.	VL	XX	ICAO	LAO
Macau (China)	VM	XX	ICAO	MACAU
Malaysia	WB	XX	ICAO	MALAYSIA
Malaysia (Peninsular)	WM	XX	ICAO	MALAYSIA-PENIN
Maldives	VR	XX	ICAO	MALDIVES
Marshall Islands (U.S.)	PK	XX	ICAO	MARSHALL

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Micronesia (Federated States of)	PT	XX	ICAO	MICRONESIA
Mongolia	ZM	XX	ICAO	MONGOLIA
Myanmar	VY	XX	ICAO	MYANMAR
Nauru	AN	XX	ICAO	NAURU
Nepal	VN	XX	ICAO	NEPAL
New Caledonia (France)	NW	XX	ICAO	NEW-CALEDONIA
New Zealand	NZ	XX	ICAO	NEW-ZEALAND
Niue Island (New Zealand)	NI	XX	ICAO	NIUE-IS
Pakistan	OP	XX	ICAO	PAKISTAN
Palau Islands (U.S.)	PTR*	XX	ICAO	PALAU-IS
Papua New Guinea	AY	XX	ICAO	PAPUA-NG
Philippines	RP	XX	ICAO	PHILIPPINES
Rep. Of Korea	RK	XX	ICAO	REP-KOREA
Samoa	NS	XX	ICAO	SAMOA
Singapore	WS	XX	ICAO	SINGAPORE
Solomon Islands	AG	XX	ICAO	SOLOMON-IS
Sri Lanka	VC	XX	ICAO	SRI-LANKA
Tai Wan (China)	RC	XX	ICAO	TAIBEI
Thailand	VT	XX	ICAO	THAILAND
Tonga	NFT*	XX	ICAO	TONGA
Tuvalu	NGF*	XX	ICAO	TUVALU
Vanuatu	NV	XX	ICAO	VANUATU
Viet Nam	VV	XX	ICAO	VIETNAM

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Table 2a

Suggested CAAS Addressing Scheme
assuming all States/ATSOs in ASIA/PAC deploy one MTA

States	AMHS Address Specification				
	Country- name attribute	ADMD- name attribute	PRMD- Name attribute	Organization- name	Organisation-unit-name-1
American Samoa	XX	ICAO	SAMOA-US	NSTU	All 4-letter location indicators of the State contained in Doc7910
Australia	XX	ICAO	AUSTRALIA	YSSY	Ditto
Bangladesh	XX	ICAO	BANGLADESH	VGZR	Ditto
Bhutan	XX	ICAO	BHUTAN	VQPR	Ditto
Brunei Darussalam	XX	ICAO	BRUNEI	WBSB	Ditto
Cambodia	XX	ICAO	CAMBODIA	VDPP	Ditto
China	XX	ICAO	CHINA	ZBBB	Ditto
Cook Islands	XX	ICAO	COOK-IS	NCRG	Ditto
Dem. People's Rep. Of Korea	XX	ICAO	DP-REP-KOREA	ZKKK	Ditto
Democratic Republic of Timor-Leste	XX	ICAO	EAST-TIMOR	WPAT	Ditto
Fiji	XX	ICAO	FIJI	NFFN	Ditto
French Polynesia	XX	ICAO	POLYNESIA	NTAA	Ditto
Hong Kong (China)	XX	ICAO	HONGKONG	HKGCAD	Ditto
Wallis and Futuna Island (France)	XX	ICAO	WALLIS-IS	NLWW	Ditto
India	XX	ICAO	INDIA	VABB	Ditto
Indonesia	XX	ICAO	INDONESIA	WAAA	Ditto
Japan	XX	ICAO	JAPAN	RJAA	Ditto
Kiribati	XX	ICAO	KIRIBATI	NGTA	Ditto
Lao People's Dem. Rep.	XX	ICAO	LAO	VLVT	Ditto
Macau (China)	XX	ICAO	MACAU	VMMC	Ditto
Malaysia	XX	ICAO	MALAYSIA	WBFC	Ditto
Malaysia (Peninsular)	XX	ICAO	MALAYSIA-PENIN	WMKK	Ditto
Maldives	XX	ICAO	MALDIVES	VRMM	Ditto

*ASIA/PAC ATS Message Handling System (AMHS)
Naming Plan*

Marshall Islands (U.S.)	XX	ICAO	MARSHALL	PKMJ	Ditto
Micronesia (Federated States of)	XX	ICAO	MICRONESIA	PTKK	Ditto
Mongolia	XX	ICAO	MONGOLIA	ZMUB	Ditto
Myanmar	XX	ICAO	MYANMAR	VYYY	Ditto
Nauru	XX	ICAO	NAURU	ANAU	Ditto
Nepal	XX	ICAO	NEPAL	VNKT	Ditto
New Caledonia (France)	XX	ICAO	NEW-CALEDONIA	NWWW	Ditto
New Zealand	XX	ICAO	NEW-ZEALAND	NZAA	Ditto
Niue Island (New Zealand)	XX	ICAO	NIUE-IS	NIUE	Ditto
Pakistan	XX	ICAO	PAKISTAN	OPKC	Ditto
Palau Islands (U.S.)	XX	ICAO	PALAU-IS	PTRO	Ditto
Papua New Guinea	XX	ICAO	PAPUA-NG	AYPY	Ditto
Philippines	XX	ICAO	PHILIPPINES	RPLL	Ditto
Rep. Of Korea	XX	ICAO	REP-KOREA	RKSI	Ditto
Samoa	XX	ICAO	SAMOA	NSFA	Ditto
Singapore	XX	ICAO	SINGAPORE	WSSS	Ditto
Solomon Islands	XX	ICAO	SOLOMON-IS	AGGH	Ditto
Sri Lanka	XX	ICAO	SRI-LANKA	VCCC	Ditto
Tai Wan (China)	XX	ICAO	TAIBEI	RCTP	Ditto
Thailand	XX	ICAO	THAILAND	VTBB	Ditto
Tonga	XX	ICAO	TONGA	NFTF	Ditto
Tuvalu	XX	ICAO	TUVALU	NFGU	Ditto
Vanuatu	XX	ICAO	VANUATU	NVVV	Ditto
Viet Nam	XX	ICAO	VIETNAM	VVVV	Ditto

Table 2b

Suggested sample CAAS Addressing Scheme
for some States/ATSOs in ASIA/PAC deploying multiple MTAs

States	AMHS Address Specification				
	Country-name attribute	ADMD-name attribute	PRMD-name attribute	Organization-name	Organisation-unit-name-1
Australia	XX	ICAO	AUSTRALIA	YBBN	YA*, YB*, YC*, YD*, YE*, YF*, YH*, YI*, YJ*, YK*
				YSSY	YL*, YM*, YN*, YO*, YP*, YQ*, YR*, YS*, YT*, YU*, YV*, YW*, YY*
China	XX	ICAO	CHINA	ZBBB	ZB*, ZS*, ZW*, ZY*, ZU*
				ZGGG	ZG*, ZJ*, ZH*, ZL*, ZP*
Japan	XX	ICAO	JAPAN	RJAA	RJ*
				ROAH	RO*
Thailand	XX	ICAO	THAILAND	VTBB	VTB*, VTC*
				VTSS	VTP*, VTS*, VTU*

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