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Addressing & routing IWXXM in the APAC region

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Webinar on the implementation of the ICAO Meteorological
Information Exchange Model (IWXXM), 27 to 29 October 2020





Topics

- Addressing IWXXM: where to?
 - Driving your car in a busy city from A to B
- Routing IWXXM: how to get there?
 - Numerous ways → choices → requirements
 - E.g. fastest / cheapest / shortest
- AMHS Contingencies:
 - How does my drive plan change by a road closure?



IWXXM distribution policy

- “Where to send IWXXM in the APAC region?” and “by whom?”
 - High variability in TAC policy where to send and by whom
 - To list of RODB/ROC/NOC for TAF/METAR -> ROBEX Handbook
 - To RODB only for SIGMET
 - To ROBEX partners & users outside AoR for advisories
- Proposal for unified approach: All IWXXM to be sent by originating ROC to all ROC in APAC
 - In line with EUR practices
 - ROC with IROG responsibilities pass on to other regions, which includes SADIS & WIFS

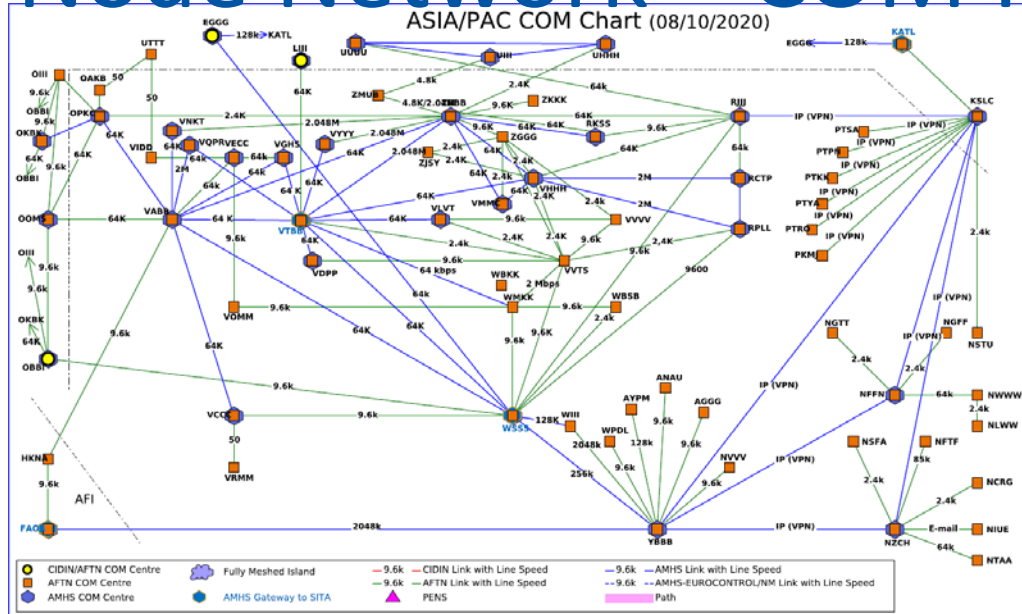


Which ROCs to send to?

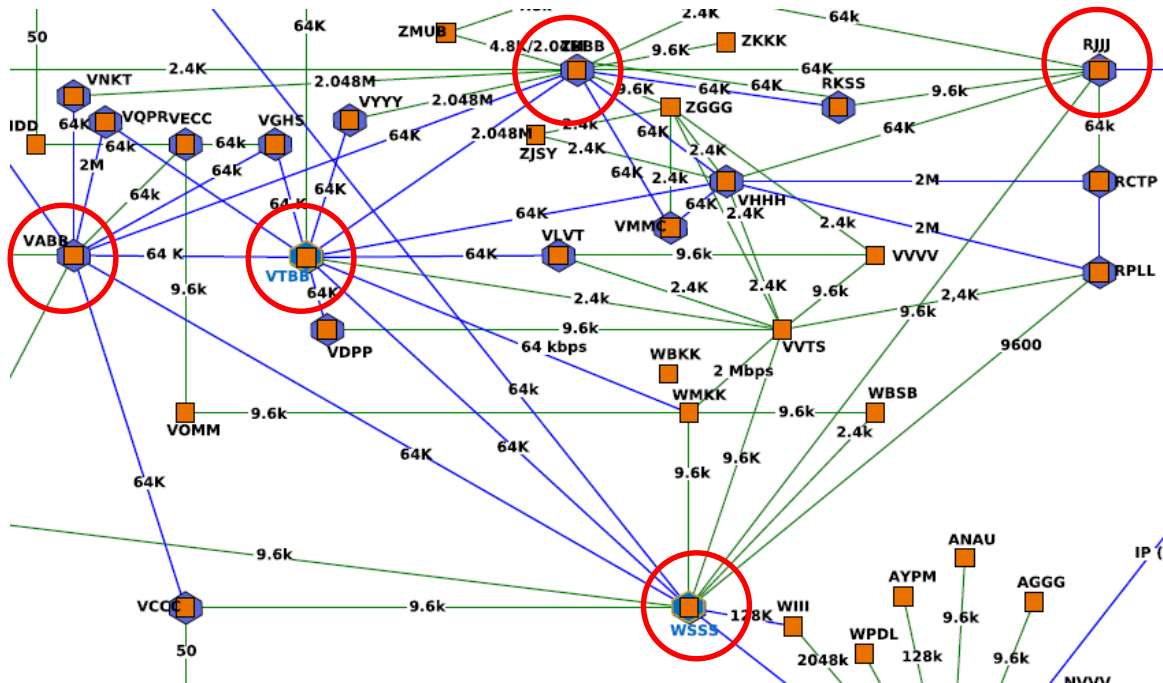
- How do we manage a repository of ready ROC, and update our distribution lists when readiness changes?
- Should I send to a ROC that is not IWXXM ready yet?
 - “Only to those that are ready so non-delivery can be avoided”
 - “Success in case of both originating and receiving ROC being IWXXM ready”
 - Or is it ...?
 - Excursion into the world of inter-state Aeronautical Fixed Service (AMHS/AFTN) network



AFS Node Network – COM Hubs



Zoomed in on SE Asia



WS to ZB can go via
VA, VT and RJ

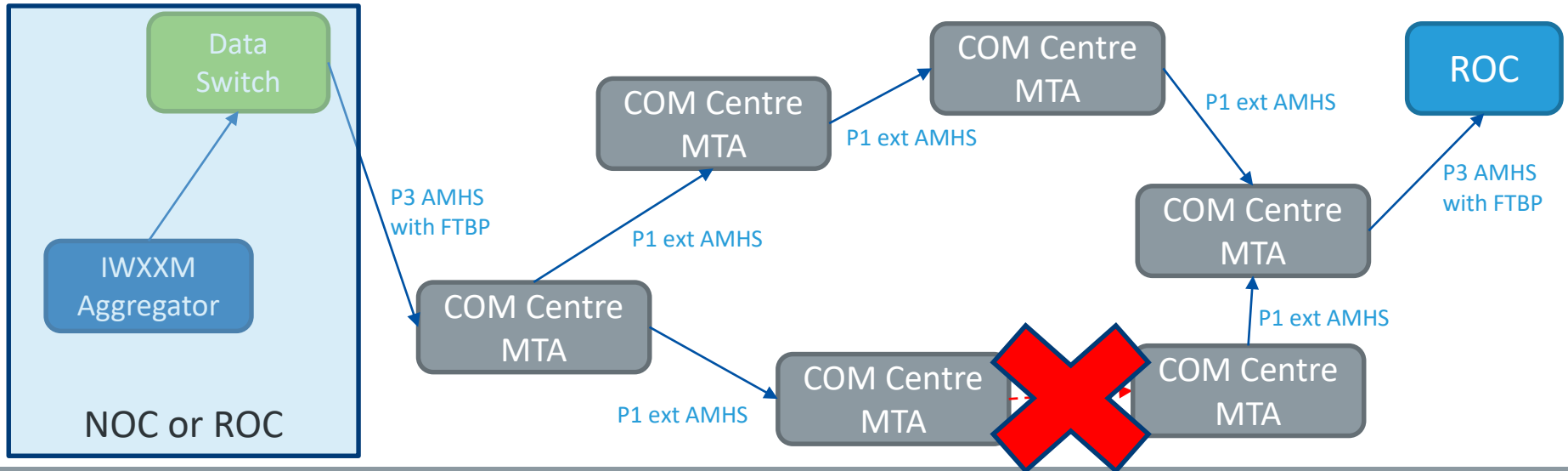


AFTN/AMHS Routing

- “All communications shall be routed by the most expeditious route available to effect delivery to the addressee” (Annex 10 Vol II)
- What connection to send traffic for another country over is prescribed in Routing Directories.
- Domain of national COM Centres operating their Message Transfer Agent (MTA)
 - Singapore’s MTA programmed to send ZB traffic via RJ: primary routing
 - VT is alternate routing
- Routing Directory does not take AMHS/AFTN status in account ...
 - IWXXM “AMHS only” requirement is an AFS first

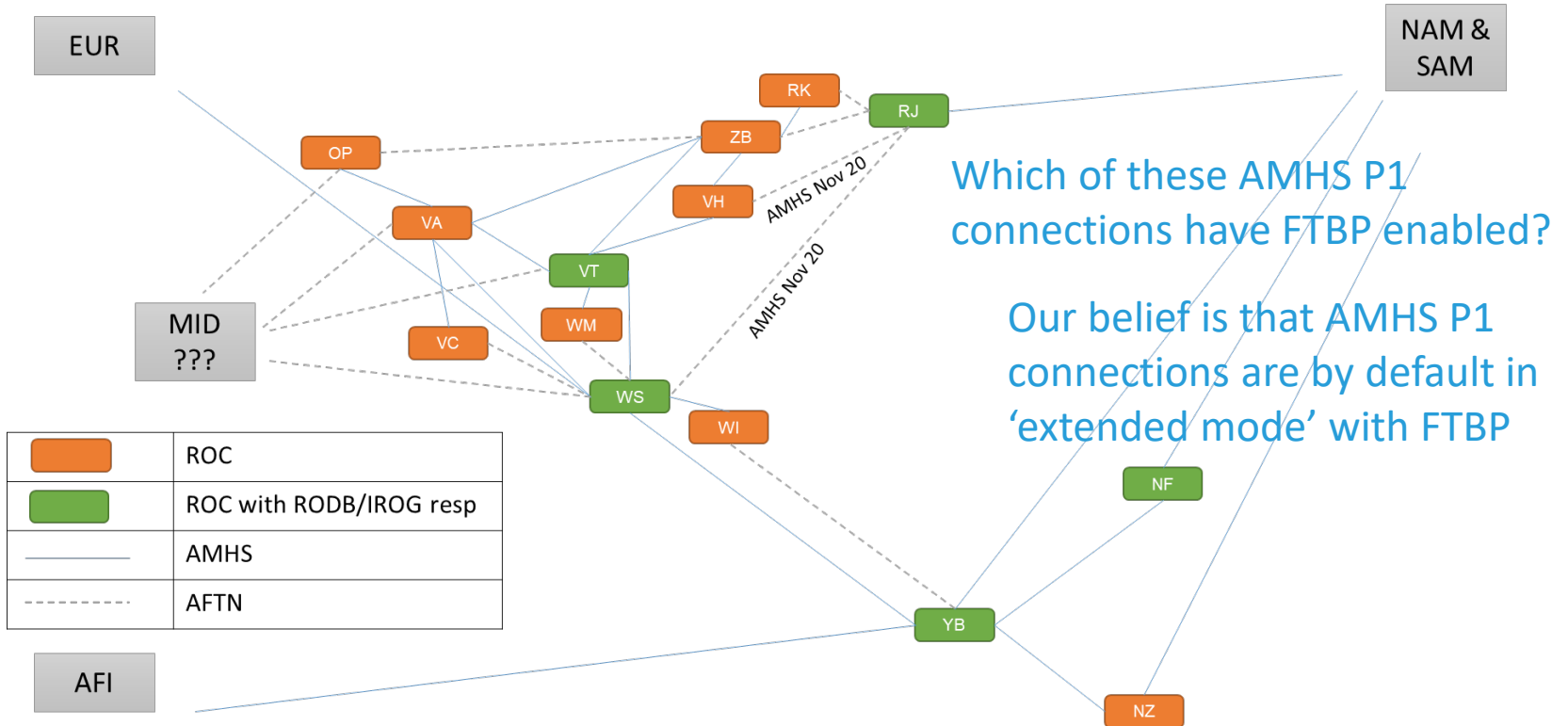
Problem Statement

Both originating and receiving ROC might be IWXXM ready, but cannot exchange IWXXM via standard or prescribed route.





AMHS capabilities 8 Oct 2020





Proposed Solution

- Defining routing for IWXXM messages according to AMHS FTBP capability of the AFS *will* enable successful transmission and is technically feasible
 - “routing by the most expeditious route *available*”
 - But we will need a good overview of AMHS FTBP P1 connections and ensure this overview remains up to date



Unique AMHS address

- To reroute only the IWXXM component of AFS traffic, a unique address must be defined for receiving IWXXM at ROC level
 - Current addresses usually ending in YPYX or YMYX, for example YBBBYPYX
 - Define for example YBBYPYL
 - In most cases can be defined at local COM level even if ROC is not ready yet.
 - Traffic disregarded / deleted at COM centre until ROC is ready



ROC Distribution List (example)

ROC	Name	IWXXM
VTBB	Bangkok	VTBBYPYL
ZBBB	Beijing	ZBBBYPYL
YBBN	Brisbane	YBBBYPYL
VHHH	Hong Kong	VHHHYPYL
RKSI	Incheon	RKSIYPYL
VABB	Mumbai	VABBYPYL
WIII	Jakarta	WIIIYPYL
WMKK	Kuala Lumpur	WMKKYPYL
NFFN	Nadi	NFFNYPYL
OPKC	Karachi	OPKCYPYL
WSSS	Singapore	WSSSYPYL
VCCC	Colombo	VCCCYPYL
RJTD	Tokyo	RJTDYZYA
NZKL	Wellington	NZKLYPYL



Proposed routing table for current state

	VTBB	ZBBB	YBBB	VHHH	RKSI	VABB	WIII	WMKK	NFFN	OPKC	WSSS	VCCC	RJTD	NZKL
VTBB		STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	VA	WS	STD
ZBBB	STD		VT	STD	STD	STD	VT	VT	VT	VT	VT	VA	VH	VT
YBBB	STD	STD		STD	STD	STD	WS	STD	STD	STD	STD	STD	STD	STD
VHHH	STD	STD	STD		ZB	STD	STD	STD	STD	VT	STD	STD	STD	STD
RKSI	STD	STD	STD	STD		STD	ZB	ZB	STD	STD	ZB	STD	ZB	STD
VABB	STD	STD	STD	STD	ZB		STD	VT	STD	STD	STD	STD	STD	STD
WIII	STD	STD	STD	STD	STD	STD		STD	STD	STD	STD	STD	STD	STD
WMKK	STD	VT	VT	VT	VT	VT	VT		VT	VT	VT	VT	VT	VT
NFFN	STD	STD	STD	STD	STD	STD	STD	STD		STD	STD	STD	STD	STD
OPKC	STD	VA	STD	STD	VA	STD	STD	STD	STD		STD	STD	STD	STD
WSSS	STD	VT	STD	STD	VT	STD	STD	VT	STD	STD		STD	STD	STD
VCCC	VA	VA	VA	STD	STD	STD	VA	VA	VA	STD	VA		STD	VA
RJTD	WS	VH	STD	STD	VH	STD	STD	STD	STD	STD	STD	STD		STD
NZKL	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	

ROCs whose associated COM Centre will need alternative AMHS routing are listed in orange



Wrapping it up

- Get IWXXM to your NOC → ROC who will distribute it to a fixed list.
 - Receiving ROC has much better overview of which end users gain access to IWXXM and can enable forwarding at their local level
- Send to not-ready IWXXM ROC?
 - Yes: makes for easy originating
 - ROCs to define IWXXM receiving address
- COM Centres associated with the ROCs will need to allow non-standard routing in accordance with up-to-date oversight over APAC AMHS FTBP P1 connections

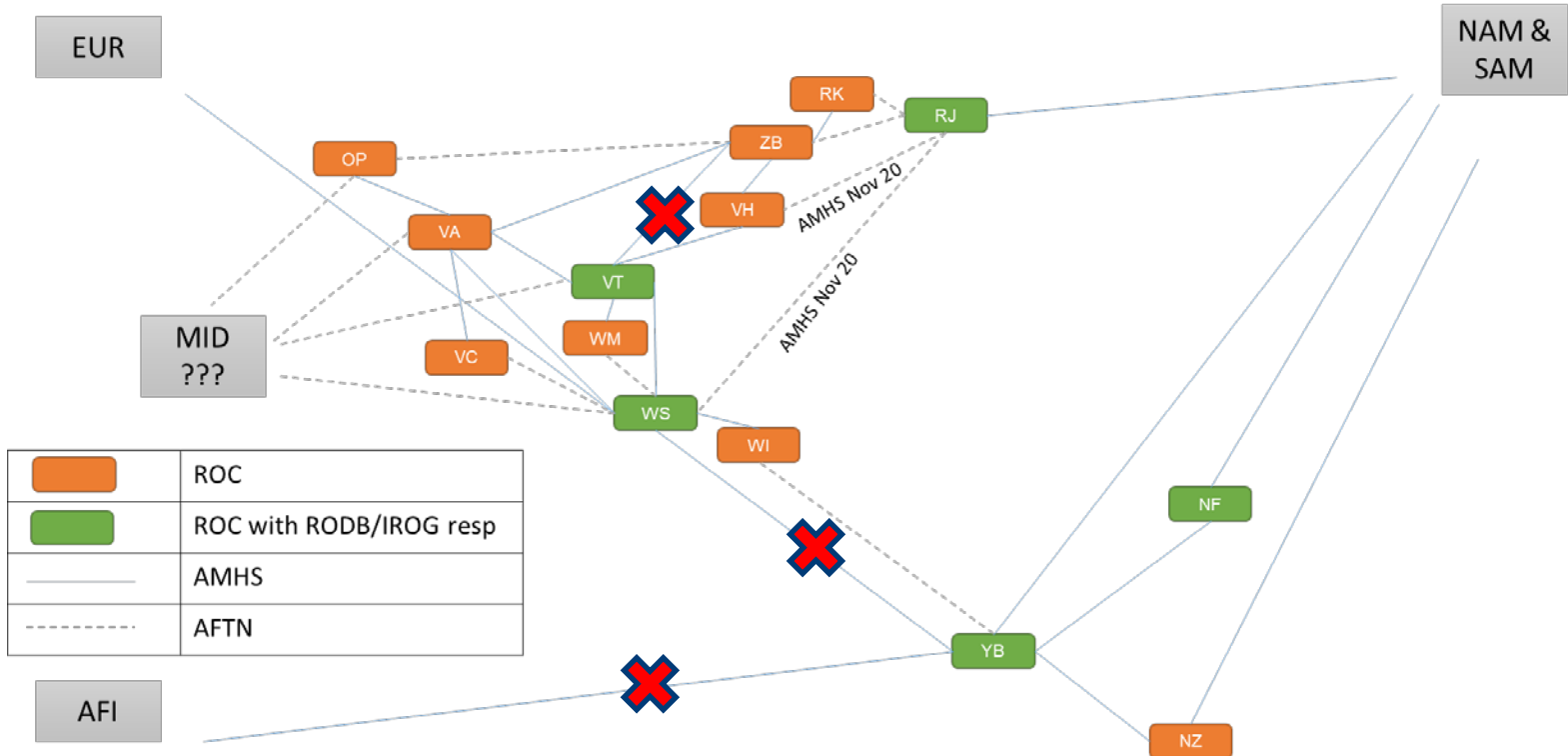


AMHS contingencies

- AFS Routing Directory defines primary and first alternate
 - By convention requested and agreed between two COM Centres involved
- Primary and First Alternate Routing can be replicated for AMHS FTBP only pathways
 - With mixed AFTN/AMHS, COM Centre might have to become real creative with second and third alternates!
 - But will need to be maintained regularly and be available to COM Centres



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THANK YOU