International Civil Aviation Organization

Tenth Meeting of the Air Traffic Management Sub-Group (ATM/SG/10) of APANPIRG

Video Teleconference, 17 – 21 October 2022

Agenda Item 5:   ATM Systems (Modernization, Seamless ATM, CNS, ATFM)

ADDRESSING OF FPL AND MISSING DEPARTURE (DEP) MESSAGES

(Presented by Secretariat)

SUMMARY

This paper provides an update on the issue of addressing of FPL and missing departure messages, as discussed at multiple meetings of the Air Traffic Flow Management Steering Group (ATFM/SG) and ATM Sub-Group, since and including ATFM/SG/8 (2018) and ATM/SG/7 (2019) , ATM/SG/9 (2021).

1. **INTRODUCTION**

1.1   An analysis of missing DEP messages had been conducted in 2017, in response to the following APANPIRG Conclusion:

Conclusion APANPIRG/27/12: Origination and Distribution of Departure (DEP) Messages

That, recognizing the importance of AFTN departure (DEP) messages in the management and coordination of flight plans in both manual and automated ATM environments, ICAO be requested to:

1. *Conduct an analysis of the incidence of non-receipt of DEP messages required by ICAO Doc 4444 Procedures for Air Navigation Services (PANS-ATM) Section 11.4.2.2;*
2. *Request that States failing to ensure correct transmission of DEP messages promptly take corrective action and report the   status of corrective actions to the ICAO APAC Regional Office by 30 April 2017; and*
3. *Raise APANPIRG Air Navigation Deficiencies against failure   by States to comply with Doc 4444 Section 11.4.2.2, at APANPIRG/28.*

1.2   ATM/SG/5 in August 2017 had requested that ongoing analysis be expanded to include missing FPL messages. The March 2018 analysis presented to ATFM/SG/8 resulted in APANPIRG Air Navigation Deficiencies being raised against several Asia/Pacific Region States. An APAC State Letter was also sent to non-APAC States that were demonstrated by the analysis to be systemically failing to send DEP messages.

2. **DISCUSSION**

Addressing of FPL and Other Related ATS Messages

2.1   There are a number of factors that contribute to the non-receipt of ATS messages at affected ATS units. While this paper is mainly focused on the matter of missing DEP messages, the following information is provided in relation to general aspects of ATS message handling.

2.2   ICAO Doc 4444 Procedures for Air Navigation Services – Air Traffic Management (PANS-ATM) specifies in section 11.2.1.1.1 that messages for ATS purposes (including FPL and associated ATS messages) shall be originated by the appropriate ATS units, except that, through special local arrangements, ATS units may delegate the responsibility for originating movement messages to the pilot, the operator, or its designated representative. Many airlines, accordingly, distribute FPL messages direct to concerned ATS units rather than submitting the flight plan to the air traffic services reporting office for onwards distribution (Doc 4444 section 4.4.2).

2.3   PANS-ATM 11.4.2.2.2 further specifies that a Filed Flight Plan (FPL) message <u>shall</u> be sent to, *inter alia*:

- The Area Control Centre (ACC) or flight information centre serving the control area or FIR within which the departure aerodrome is situated;

- <u>All centres in charge of each FIR or upper FIR along the route</u>; and

- The aerodrome control tower at the destination aerodrome.

2.4   PANS-ATM further specifies in section 11.2.1.2.3.3 that the following three letter designators (forming part of the AFTN address, together with the relevant ICAO four-letter location indicator and a supplementary letter, usually X) shall be used when addressing FPL and other ATS messages to ATS units:

- If the message is relevant to an IFR flight   ZQZ(X)

- If the message is relevant to a VFR flight   ZFZ(X)

- Aerodrome control tower   ZTZ(X)

- Air traffic services reporting office ZPZ(X)

     Other three-letter designators shall not be used for that purpose

2.5   There are multiple examples of States in the Asia/Pacific Region specifying in their Aeronautical Information Publication (AIP) Section ENR 1.11 that FPL be addressed other than in accordance with PANS-ATM.

2.6   The specification of non-compliant addressing requirements in State AIP (and, in some cases, in NOTAM) contributes to the non-receipt of FPL, DEP, and other related ATS messages.

2.7   There are also cases of States implementing the use of three-letter designators that are not assigned to them in ICAO Doc 8585 *Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services*, but are in fact assigned to other States, authorities, or aircraft operating agencies.

2.8   The specification of non-compliant addresses in AIP is a key factor in missing FPL and associated ATS messages. For example, ANSP responsible for aerodrome reporting offices and other ATS units in distant FIRs that transmit FPL, DEP and other ATS messages are entitled to depend on compliance with the provisions of PANS-ATM by all downstream FIRs, and address ATS messages

accordingly. They do not have any obligation to hold or read the AIP or NOTAMs promulgated by a far-distant State.

2.9   It should be noted that there are several States in the Asia/Pacific Region that are fully compliant with the abovementioned provisions of PANS-ATM. These States have, where locally required, implemented simple technology solutions to identify and re-direct FPL and other relevant ATS messages to other internal agencies such as Air Traffic Flow Management Units (ATFMUs) network management centres, centralized flight plan processing facilities, military units, regulators, etc.

2.10   A summary of non-compliant addressing requirements from published by Asia/Pacific Administrations in *online* AIP (Section ENR 1.11) is provided in **Attachment A**. Information from AIPs that are not available online will be further researched by ICAO. The meeting is invited to note that ICAO APAC Office will continue to encourage improved compliance with the provisions of PANS-ATM through direct contact with States, and if necessary, through APANPIRG Air Navigation Deficiencies.

> *Note: Attachment A was compiled in March 2021 and updated in September 2022. ATM/SG-participating Administrations are invited to inform ICAO where any update has occurred since that time.*

2.11   In that regard, the meeting is reminded of the following Conclusion agreed by ATM/SG/7 (2019):

> ***Conclusion ATM/SG/7-5: ATS Message Reception and Handling***
>
> *Noting that incorrect flight plan addressing requirements published by States in AIP ENR 1.11 contribute to the non-reception of flight plans and associated ATS messages, and that simple technology solutions are readily available to permit redistribution of messages to all necessary internal units and organizations, States are urged to:*
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> 1. *ensure that, in accordance with PANS-ATM 11.4.2.2.2 all FPL and associated ATS messages that are addressed in accordance with PANS-ATM to the centre in charge of each FIR along the route and the destination aerodrome control tower, are correctly received and redistributed to all necessary ATS units by the receiving State;*
>
> 2. *note that, as specified in PANS-ATM 11.2.1.2.3.3, the correct address for the centre in charge of the FIR is [FIR location indicator] ZQZX, and other indicators shall not be used.*
>
> 3. *remove flight plan addressing requirements that do not comply with the above PANS-ATM provisions from AIP ENR 1.11; and*
>
> 4. *ensure that all three letter designators used in addresses are correctly registered in ICAO Doc 8585.*

2.12   The Secretariat was also previously made aware of cases of coercive actions being taken in the APAC Region, involving threats by a State to airspace users and other States that clearances would be refused if the FPL was not addressed to non-compliant addresses published in either NOTAM or AIP. This practice of coercing other ICAO contracting States into non-compliance with the provisions of PANS-ATM is entirely unacceptable. Any continuation or further instances of this behavior will be formally referred to the Council of ICAO for action.

2.13   APAC Administrations receiving communication from any other Administration requesting that ATS messages, including FPL, be forwarded to any AFTN address that does not comply

with PANS-ATM procedures are urged to inform the ICAO Regional Office, in order that corrective action may be initiated.

DEP Messages Not Received - Data Considerations

2.14   The data on missing FPL and DEP messages does not necessarily, in all cases, reflect failures at the aircraft operator or departure aerodrome ANSP. There may be a number of reasons these messages failed to reach one or more relevant ATS units, including such issues as, for example:

- non-compliant addressing requirements/handling at the reception end, as mentioned above;

- communication network failures;

- rejected message queues (format, syntax, semantic errors) not correctly actioned by the receiving ANSP;

- failure of the Centre in charge of the FIR to correctly re-distribute received messages to all relevant ATS units within the FIR; and/or

- Non-inclusion in FPL of Estimated Elapsed Times (EET) for all FIR boundaries crossed by the flight.

2.15   However, in many cases there are clear systemic issues that must be addressed by the Administration responsible for the aerodrome of departure.

DEP Messages Not Received – Follow-Up Actions

2.16   Following the analysis of missing DEP messages conducted in 2018, ATFM/SG/8 discussed steps to be to address the issue. State Letters were consequently sent by the ICAO Asia/Pacific Regional Office as follows:

- State Letters to APAC Administrations for which APANPIRG Air Navigation Deficiencies were proposed for non-compliance with the provisions of PANS-ATM (subsequently agreed by APANPIRG);

- A State Letter to all other APAC Administrations, and to non-APAC Administrations through their accredited ICAO Regional Offices, where the analysis indicated systemic failure to send DEP messages.

2.17   A further 24-hour data gathering activity was conducted on 14 June 2019. The planned data gathering and analysis in 2020 and 2021 was not conducted due to the impact of the COVID-19 pandemic on traffic volumes.

Asia/Pacific State Analysis and Deficiencies

2.18   APANPIRG/32 (December 2021) endorsed the current list of States having ANS Deficiencies recorded for non-compliance with the requirements of PANS-ATM Section 11.4:

Bangladesh, India, Malaysia, Maldives, Nepal, USA

2.19   The original criterion used for the ANS Deficiency was the failure to send DEP messages for 10 flights or more. This criterion did not adequately capture poor performance from States with low numbers of international departures. It was therefore agreed by ATFM/SG and ATM/SG that the criteria will be five percent of flights. However, States with very low numbers of international departures, i.e. less than 20 per month, should be excluded from the Deficiency List due to the small sample size, but will be formally contacted by ICAO, and monitored closely.

2.20   The meeting is invited to note that few Administrations achieved 100% of DEP messages transmitted to all relevant participating FIRs. All Administrations should examine their processes and system configuration in order to improve overall performance.

Thailand Update

2.21   Thailand continuously monitors the non-receipt of DEP messages for flights entering the Bangkok FIR, and kindly agreed to provide data for the information of the meeting.

2.22   For the month of August 2022, the following States were the most prominent originating States (more than ten flights per month) from which no DEP message was received by Thailand:

Bahrain (100% DEP missing), Kuwait (100%), Ethiopia (100%), Turkey (87%), Spain (95%),Switzerland (36.3%),Saudi Arabia (32%), Oman (18.3%)

2.23   **Table 2** summarizes non-receipt of DEP messages for flights originating in the FIRs of APAC Administrations and entering the Bangkok FIR for the eight months ending in August 2022 (missing DEP/Number of Flights).

Originating State	JAN 2022	FEB 2022	MAR 2022	APR 2022	MAY 2022	JUN 2022	JUL 2022	AUG 2022	TOT %
Afghanistan	-	-	-	-	-	-	**-**	**-**	**-**
Bangladesh	2/192	0/176	1/245	2/274	5/301	1/317	**1/376**	**0/377**	**<1%**
Bhutan	1/13	0/17	0/13	1/19	0/18	0/25	**0/25**	**1/17**	**<1%**
Brunei Darussalam	0/8	1/7	0/14	1/16	0/21	2/25	**0/31**	**0/29**	**<1%**
Cambodia	0/209	1/216	4/278	4/299	4/409	4/482	**3/520**	**4/162**	**<1%**
China	1/628	1/438	0/734	6/653	1/672	1/673	**2/510**	**1/534**	**<1%**
India	43/470	34/386	49/531	55/713	64/1059	69/1285	72/1423	50/1309	<6%
Indonesia	6/78	4/75	0/81	1/75	4/134	6/157	**4/205**	**11/278**	**<3%**
Lao PDR	1/48	1/41	0/42	0/65	10/112	15/184	**85/264**	**44/320**	**<1%/<20%**
Malaysia	32/363	29/343	25/426	24/518	35/695	31/876	**27/1208**	**50/1357**	**<5%**
Maldives	6/12	9/21	8/19	8/21	8/15	9/20	15/37	29/54	<50%
Myanmar	10/212	2/183	3/239	4/267	5/316	12/406	**15/524**	**12/543**	**<2%**
Nepal	0/91	1/78	5/101	2/127	3/148	4/155	**1/225**	**3/262**	**<2%**
Pakistan	5/17	0/17	3/32	4/43	0/67	2/69	**2/98**	**1/97**	**<1%**
Philippines	22/489	2/497	8/643	5/592	10/619	18/673	**10/740**	**6/784**	**<2%**
Republic of Korea	1/154	0/135	2/195	0/184	2/215	1/232	**1/421**	**1/512**	**<1%**
Singapore	2/1108	1/920	4/876	3/1076	3/1264	4/1275	**0/1441**	**1/1420**	**<1%**
Sri Lanka	1/69	0/44	0/52	1/49	1/70	0/44	**1/44**	**0/49**	**<1%**
USA	3/25	5/27	2/3	1/7	2/18	6/34	**0/24**	**2/37**	**<12%**
Viet Nam	1/454	1/305	7/424	6/444	2/617	5/791	**3/991**	**9/1079**	**<2%**

Ongoing Activities

2.24   The work on missing DEP messages was initially carried out as a result of ATFM/SG discussion, noting that DEP messages currently provide the first real-time information used to update demand calculations in most ATFM processes. However, DEP messages have a broader impact, also serving an important role in both manual and automated ATM systems. This work will therefore continue, with data examined by ATFM/SG under the oversight of ATM/SG.

2.25   The issue was also raised with ICAO Headquarters by the ICAO APAC Regional Office, and by Thailand with the ATM Operations Panel.

2.26   Other States having the capability are requested to participate in data gathering activities to support ongoing monitoring.

<u>COVID-19 Pandemic Impact</u>

2.27   The air traffic levels have only partly recovered across the APAC Region. Realizing that the importance of the missing DEP messages issue is such that it should continue to be monitored. Therefore, another regional analysis is being tentatively planned.

2.28   The planned data collection exercise was discussed during ATFM/SG/12 meeting in September 2022. It was agreed that States which had participated in the earlier exercise will be approached by ICAO Secretariat in October 2022 for collection and sharing of data within a specific time period. The data collected will be analyzed by ICAO Secretariat for refining the regional scenario.

2.29   The analysis of incorrect FPL addressing requirements mentioned in paragraphs 2.1 to 2.13 of this paper will continue. Participants are urged to ensure their Administration responds to any requests for further information by the ICAO Regional Office.

3.   ACTION BY THE MEETING

3.1   The meeting is invited to:

   a)   note the information contained in this paper;

   b)   note:

   i.   the ICAO Doc 4444 PANS-ATM procedures for the addressing of FPL and associated ATS messages;

   ii.   the contribution of incorrect addressing requirements published in AIP ENR 1.11, and as highlighted in Attachment A, to missing FPL and associated ATS messages including DEP;

   iii.   the potential for APANPIRG Air Navigation Deficiencies, where appropriate, in cases where AIP ENR 1.11 does not comply with PANS-ATM

   c)   comply with conclusion ATM/SG/7-5: ATS Message Reception and Handling;

   d)   inform the ICAO APAC Regional Office in the event that any Administration requests the forwarding of FPL and other ATS messages to addresses that are not compliant with the provisions of PANS-ATM;

   e)   note the list of current ANS Deficiencies relating to non-compliance with PANS-ATM Section 11.4, as agreed by APANPIRG/31;

   f)   take all steps to examine processes and system configuration, to improve performance in DEP message transmission;

   g)   participate in future data gathering and analysis activities; and

   h)   discuss any relevant matters as appropriate.

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ANALYSIS OF AIP ENR 1.11 FPL ADDRESSING REQUIREMENTS – APAC ADMINISTRATIONS[1]

States	Compliance	Addresses (**PRIMARY FOCUS ON INBOUND OR OVERFLIGHTS**)	Update (October 2022)
Afghanistan	No	Kabul (OAKB) - OAKBZTZX OAKBYWYX, OAKBZPZX Kabul Area Control Center (KACC) - OAKXZQZX OAKBZQZX OAKKZQZX *YFMS YAYX YWYX not compliant with PANS-ATM 11.2.1.2.3.3.* *ZPZX is only required for departing flights* *OAKB = Kabul International Airport (OAKX – Kabul ACC/FIC)* *OAKK is not a valid Location Indicator*	To be checked (Can't Access AIP)
Australia	Yes	Brisbane FIR - YBBBZQZX Melbourne FIR - YMMMZQZX Departure or destination aerodrome ICAO Location indicator ZTZX	Updated
Bangladesh	Yes	All flights *VGFRZQZX, VGFRZQZX , VGHSZTZX VGFRZQZX, VGFRZQZX, VGEGZTZX VGFRZQZX, VGFRZQZX , VGSYZTZX VGFRZQZX*	Updated
Bhutan	Yes	Paro - VQPRZTZX VQPRZPZX Bumthnag - VQBTZTZX VQPRZPZX Gelephu - VQGPZTZX VQPRZPZX Yonphula - VQTYZTZX VQPRZPZX	Updated
Brunei Darussalam	Yes	All Flights Into or via KINABALU FIR : WBFCZQZX Into BRUNEI TMA / CTR : WBSBZPZX Into BRUNEI CTR with intention of landing : WBSBZPZX	Updated

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[1] Includes data from AIP available online. Further analysis of the AIPs of the remaining States will be undertaken.

China	NO	ZBPEZQZX ZGZUZQZX ZPKMZQZX ZLHWZQZX ZJSAZQZX ZSHAZQZX ZYSHZQZX ZWUQZQZX ZHWHZQZX For traffic flow management service: ZBBBZFPM ZSSSZFPM Specific flights East China Sea ADIZ (Refer ENR5.2.1) - ZBBBZGZX ZSACZQZX R200 (BTN BEBEM and OLDID) - VHHKZQZX (FPL/CHG/DLA/CNL/DEP) *ZSAC is not a valid Location Indicator (Doc 7910)* *ZSACZQZX is not the centre in charge of any FIR* *ADIZ addressing requirement is not compliant with PANS-ATM* *ZFPM and ZGZX are not compliant with PANS-ATM 11.2.1.2.3.3.* *ZFPM does not designate an air traffic flow control unit*	Updated
Hong Kong, China	Yes	Inbound to Hong Kong or transiting Hong Kong FIR - VHHKZQZX Outbound from Hong Kong – VHHHZPZA	Updated
Macao, China	No	Inbound to Macao – VMMCZTZX, VHHKZQZX, ZBBBZFPM, ZSSSZFPM, ZGZUZQZX, ZGJDZAZX Outbound from Macao – VMMCZPZX *ZFPM ZAZX are not compliant with PANS-ATM 11.2.1.2.3.3. ZGJDZQZX is not the centre in charge of any FIR.*	Updated
Cook Islands	No	No address provided	Updated
Fiji	Yes	NFFFZQZX ICAO Location indicator ZTZX	Updated
India	No	All flights landing in India or transiting through Indian FIRs may use the following addressing to the respective Flight Information Centre, Area Control Centre & Aerodrome Control Tower. VOMFZQZX, VIDFZQZX, VEGTZRZX, VECFZQZX, VABFZQZX *ZRZX is not compliant with PANS-ATM 11.2.1.2.3.3.*	Updated (ATFM/SG/12, WP/10 India mentioned removing ZRZX from AIP. Not reflected yet.)
Indonesia	No	**Jakarta FIR** - WIIIZQZX **Ujung Pandang FIR** - WAAAZQZX Destination and Alternate Aerodrome Aerodrome's Location Indicator +ZPZ+X	**To be checked**

		Into or Via Jakarta FIR and Ujung Pandang FIR WRRRZEZX *PANS-ATM does not require FPL addressing to alternate aerodromes* *ZEZX is not compliant with PANS-ATM 11.2.1.2.3.3. WRRR is not the location indicator of any FIR WIIZ is not a valid location indicator. Should be WIIF.* *WAAA is the location indicator for Makassar/Sultan Hassanudin airport. Should be WAAF.*	
Japan	No	IFR flights – RJJJZQZX VFR flights – RJJJYFYQ, RJCCYSYA/RJSSYSYA (six more examples YSYA) RJTZYWYX (flights through ADIZ) ICAO Location indicator + ZPZX *YSYA YWYX not compliant with PANS-ATM 11.2.1.2.3.3.*	Updated
Kiribati			To be checked
Lao PDR			To be checked
Malaysia	NO	WMFCZQZX [various]ZTZX WBFCZQZX WMKKZPZM, WMKKYOYX , *WMKKZPZM, WMKKYOYX not compliant with PANS-ATM*	Updated
Maldives	May be	VRMFZQZX VRMMZTZX VRMMZPZX *ZPZX is for departure flights, for distribution of the FPL*	Updated
Marshal Island			To be checked
Micronesia			To be checked
Mongolia	Yes	*ZMUBZQZX, ZMCKZPZX, ZMUBZPZX. ZTZX VFR Flights : ZMUBZFZX*	*Updated*
Myanmar	Yes	VYYFZQZX VYYYZTZX	Updated
Nauru			To be checked
Nepal	May be	VNSMZQZX VNKTZTZX VNKTZPZX VNBWZPZX * + ZTZX *ZPZX is for departure flights, for distribution of the FPL*	Updated
New Zealand	Yes	NZZOZQZX NZZCZQZX NZZCZFZX * + ZTZX	

Pakistan	No	Karachi FIR OPKCZIZX OPKCZRZX OPKCZRZA OPKCZPZX OPKRZRZA, OPKRZRZB. Lahore FIR OPLAZIZX OPLRZQZX OPLAZRZA, OPLRATMA, OPLRATMB. Cherat CTR OPLAZIZX OPLRZQZX OPCTZTZX OPRNZRZA. Multan TMA OPMTZTZX, OPMTYFY *ZIZX ZRZA ZRZB ATMA ATMB not compliant with PANS-ATM 11.2.1.2.3.3.* *ATM is not allocated to Pakistan (Airlines of Tasmania, Doc 8585)*	Updated
Palau			To be checked
Papua New Guinea			To be checked
Philippines	Yes (inbound and overflights)	International flights outbound RPLLYIYX International Flights inbound RPHIZQZX and airport of destination location indicator + ZTZX International flights overflying Manila FIR RPHIZQZX Domestic Flights RPLLYJYX *YIY and YJY are not compliant with PANS-ATM 11.2.1.2.3.3. and are not allocated in Doc 8585*	To be checked
Republic of Korea	May be	Flight plan message relating to traffic to intend a flight within the Incheon FIR, shall be addressed to departure and destination airports and Incheon FIC, in order to warrant correct relay and delivery, and AFTN addresses are as follows: Departure or Destination airport RKSIZPZX RKSSZPZX RKPCZPZX RKPKZPZX RKNYZPZX RKTUZPZX RKTNZPZX RKJBZPZX RKJJZPZX RKJKZPZX RKJYZPZX RKNWZPZX RKPSZPZX RKPUZPZX RKSMZPZX RKTHZPZX RKTLZPZX RKDZZPZX Incheon FIR RKRRZQZX *ZPZX should only be for departure FPL*	Updated
Samoa			To be checked
Singapore	Maybe	Transiting Singapore FIR or inbound to Singapore Changi Airport WSJCZQZX Inbound to Singapore Changi Airport WSJCZQZX Outbound from Singapore Changi Airport WSSSZPZX	

		Inbound to Seletar Airport WSJCZQZX WSSLZPZX Outbound from Seletar Airport WSSLZPZX Inbound to/Outbound from Paya lebar Airport WSJCZQZX WSAPZPZX Inbound to/Outbound from Tengah Airport WSJCZQZX WSATZPZX *ZPZX should only be for departure FPL*	
Solomon Islands			To be checked
Sri Lanka	No	VCCCZQZX Into Katunayake/Bandaranaike Intl. Airport Colombo VCCCZQZX VCBIZTZX VCBIZPZX Into Mattala/Mattala Rajapaksa Intl. Airport VCCCZQZX VCRIZTZX VCRIZPZX Into Ratmalana/Colombo Airport VCCCZQZX VCCCZTZX VCCCZPZX *VCCCZQZX is not the centre in charge of any FIR (should be VCCFZQZX)* *ZPZX should only be for departure FPL*	Updated
Thailand	Yes	VTBBZQZX	
Timor Leste			To be checked
Tonga			To be checked
Vanuatu			To be checked
Viet Nam	May be	VVHNZQZX VVHMZQZX +ZTZX +ZPZX *ZPZX should only be for departure FPL*	Updated
USA	Yes	[large number of FIRs, all ZQZX]	
France (French Polynesia and New Caledonia)	Yes	ZQZ ZTZ	