The need for effective ATM contingency management from Airspace Users' perspective

APAC/MID ATM Contingency Planning Workshop 25-27 June 2024

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Contingency causes

CNS/ATM systems outage

ATS staff not available

Meteorological

Safety / security assessments

Introduction

- Several contingency events in our regions
- Varying levels of responses and impacts – some requiring ICAO CCT
- Any event allows for lessons learnt
- Good reminders for all States to have relevant, updated and practiced Contingency Plans
- Engagement with all stakeholders

Myanmar

- Contingency response between 8 February 2021 and 16 February 2021 due to the unavailability of ATC Services
- Level 2 Myanmar ATS Contingency Plan (CP2) was activated providing instructions for international overflights to operate
- Still some items of confusion in the plan's instructions and some difficulty obtaining clarification of those issues
- Notice of the contingency response was by communication with adjoining FIRs prior to the event and then immediate activation by NOTAM. Also pre-warning by prior NOTAM.
- Majority of the period ran smoothly, however interpretation of some of the frequency instructions was confusing, plus the limited number of available levels and 15-minute longitudinal standard requirement created more inefficiencies than necessary
- Good example for maintaining a prepared Contingency Plan for such a situation

Mt Agung

- Following the eruption of Eyjafjallajökull (E2), new ICAO guidance was developed: *an operator should not be prevented from operating through, under or over airspace forecast to be affected by a VAA, VAG or SIGMET provided it has demonstrated in its SMS the capability to do so safely*
- But separate guidance included: *A decision has to be taken by the airport authority regarding the feasibility or necessity to continue aircraft operations at the airport.*
- Eruptions of Mt Agung in 2017 highlighted the discrepancy and the need for effective comms and close cooperation and coordination
- New procedures developed by DPS ATC have provided more and better contingency operating routes depending on wind and situation with the ash cloud for further eruptions
- Having more options provides operators greater scope for consideration in their risk assessment in a contingency event

Afghanistan

- Kabul FIR has been subject to a contingency response since August 2021 due to the unavailability of ATC Services
- A Contingency Plan (CP) had been originally published in November 2018 with a reviewed version published in May 2021 however it still required revision and re-publishing
- Due to the rapidly evolving events in Afghanistan at the time, ICAO was not formally notified of the activation of the CP and neighbouring States were only given short warning
- During the early periods of the outage, communications with the ANSP or State were primarily absent and only small updates were received sporadically
- Whilst NOTAMs were active, it took an extended time to renew the CP. Most AUs elected to avoid the FIR after risk assessments
- Good example of need for updated, practiced, multi-layered CPs

MNL FIR System Outage

- Sudden failure of CNS/ATM systems on 1 Jan 2023 resulting in loss of most services
- All flights required diversion around the volume until services resumed
- Planned outage for corrective maintenance in May 2023 initially would have unduly penalised overflying traffic by prohibiting any entry to the FIR
- ICAO Annex 11 Attachment D details *Material Relating To Contingency Planning* and describes the objective of preserving the availability of major world air routes in such circumstances as outage of ATS
- Further examination and planning meant that the interruption was negligible and completed successfully – no contingency procedures were required

Airline Feedback

Positives:

- Availability of a pre-published Contingency Plan (CP) is invaluable
- Contingency routes are established quickly with a CP
- Utilise available route network – not avoidance routes
- Good comms with neighboring ANSPs supports flexibility and expansion
- A CP can enable maintaining effective coordination between adjacent States and the affected State

8

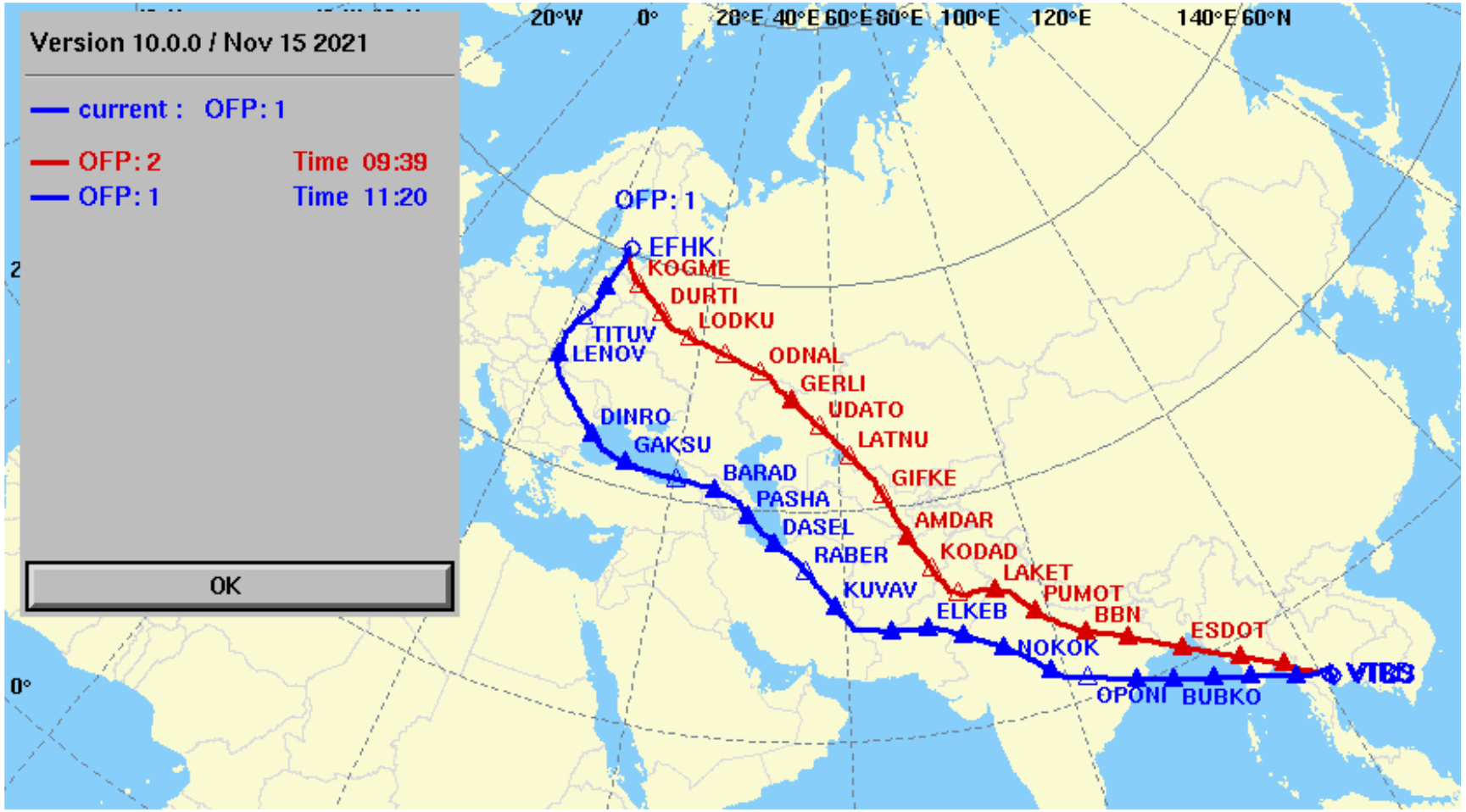
Challenges

- Limited number of routes and Flight Levels
- Enroute holding increases – need for updates on expected holding
- Regular confusion re the correct TIBA frequency
- Restrictions in comms links with affected States
- End of contingency must be well organised

Additional Costs

- Additional fuel required for possible holding
- Significant additional track miles for diverting around an affected volume and then additional requirements on some airlines to also track around neighbouring FIRs
- Constraints of available flight levels
- Longer routes necessitated some changes to aircraft type with higher costs
- One airline advised they included additional fuel (1500kg) for wide-body aircraft and minimum 5% contingency fuel added during the Myanmar contingency
- Another airline calculated additional USD18,200 for the period of the Myanmar contingency
- One long-haul carrier reported that the average additional costs associated with the Kabul FIR ATS outage was USD20,000 per flight

Flight Planning Challenges



Via Russia and Afghanistan

Via the Caucasus and Iran:

- Time +1:40h
- Fuel +10,700kg
- Distance +821nm
- Available payload -5221kg

Impact of Kabul FIR ATS Outage

City Pairs	Afghan (P500) Routes	Iraq Routes	Iran Routes	Saudi Routes
SIN–Europe	+00:30	+00:25	-00:10	+00:40
Europe–SIN	+00:35	+00:30	+00:10	+01:10
Cost Impact *	High	Low	Lowest	Highest

*Cost refers to fuel and ANS charges only

Recommendations

- Designate more contingency routes with more available flight levels
- Strengthen comms with the contingency State
- Neighboring FIRs to advise expected delays for entry into the affected FIR
- Utilise ATFM methods other than airborne holding / orbits.
- Robust and transparent communication between all the stakeholders
- Ability to adapt

13

Future Planning

- Recent contingency responses remind us of the importance of States having relevant, updated and practiced Contingency Plans in place
- Development of multi-layered Contingency Plans should always include affected stakeholders to ensure all impacts and risks are considered
- The Plan should always have a current Safety Assessment so that the inherent procedures don’t create elevated or unmitigated risk
- The Plan should also consider the possibility that the type of event (e.g. natural disaster) may cause severe and sometimes full disruption to normal public communications modes such as land / mobile phone networks and the internet
- Plans and their associated Safety Assessments should be reviewed annually and updated as required. It should also be practiced in TTX or simulators.

Future Planning

- Neighboring States must be consulted in the Plan development as well as annual reviews. Letters of Agreement must also be enacted and current.
- A CP is primarily for the use of the ANSP and any other signatories therefore the instructions within a CP must be published in the State's AIP so that AUs may access the information from that document or from information provided from data providers
- Activation of a contingency response should then be by NOTAM referring the reader to the relevant section/s of the AIP

Thank you

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