



ATFM and Contingency Planning in Singapore

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CAAS

Civil Aviation Authority of Singapore

Spectrum of ATFM Operations

PLANNING
HORIZON

Two months
or more

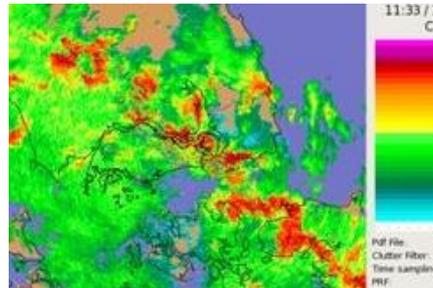
24 hours prior
to operations

Unexpected or
sudden

Spectrum of ATFM Operations



Planned closures to support military operations or national events



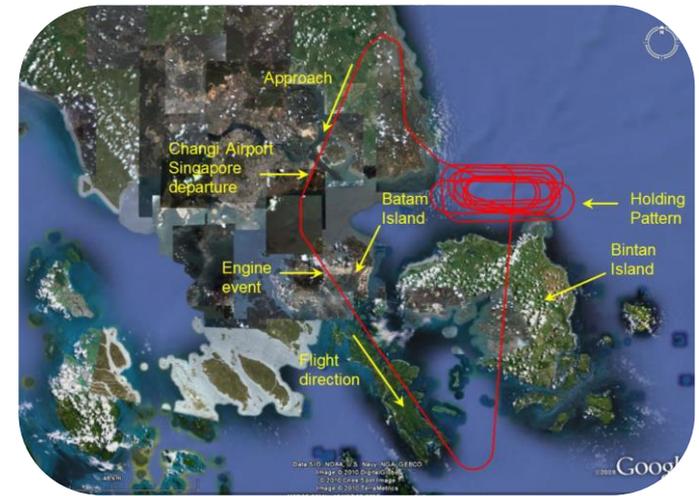
Forecasted adverse weather condition



Aircraft accident on runway, emergency abnormal operations

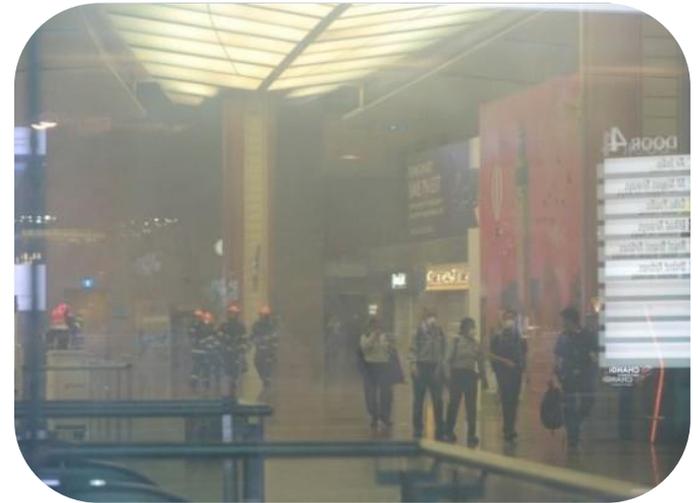
Without ATFM

- QFA32, 4 Nov 2010
 - Uncontained engine rotor failure (UERF) of the No. 2 engine, resulting in significant structural and systems damage
- 50% reduction of runway capacity
 - 5.5 hours of runway downtime
- Ground stop measures on flights from neighboring airports
 - All holding stacks were saturated
 - Departures held on the ground to accommodate arrivals
- Ad-hoc ground stop
 - Other flights did not have the predictability on the expected delay



With ATFM

- Small fire broke out at one of the air conditioning equipment rooms in Changi Terminal 2 on 16 May 2017
- Evacuation of Terminal 2
 - Departures were grounded
 - For passenger safety, arriving passengers were disembarked on to the tarmac
- Although runway throughput not affected, terminal and parking stand capacity was reduced
 - About 40 flights were affected
- ATFM measures were put in place with immediate ground stop and subsequent ground delay program to smooth out demand



ATFM and Contingency Planning

- ATFM plays a critical role in the overall ATM infrastructure
- Not just capacity demand balancing on the runway and airspace
 - also facilitates other services such as management of airport terminal, parking stands and gate
- Include ATFM as part of ATM contingency and business continuity planning





Thank you