

CAAS

**AIR TRAFFIC SERVICES
DIVISION**

**INFLUENZA PANDEMIC
BUSINESS CONTINUITY PLAN**

Version 5.4

1 April 2013

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A. SUMMARY

Division:	AIR TRAFFIC SERVICES	
Amended by:	Raymond Seah, SATCPO(BCP/Security)	Date: 10 April 2013
Endorsed by:	Kuah Kong Beng, D(ATS)	Date: 11 April 2013

BCP Essential Staff

Role	Primary	*Alternate
Division Head/Director	Kuah Kong Beng	Rosly Saad
BCP Manager	Victor Tan	Andrew Wee
Influenza Coordinator	Nuraien Shinei	Toh Shin Yan
Contact Tracing Team Member	Mohd Fadzil	Balakrishnan

*The alternate would take over should the primary person be unable to perform his/her duties. For Alerts Red and above, divisions should ensure that the primary and alternate are in separate teams.

Essential Service	Air Traffic Control
Person responsible for activating BCP for this service	D(ATS)
Person responsible for managing BCP for this service	DCATCO(O)
No. of officers requiring anti-viral prophylaxis for this service	360
Total no. of officers in division requiring anti-viral prophylaxis	440 (see Annex E)

Measures Taken During Alerts

Alert Green

Measures by Division	Activated by:	Action Officer
Heighten health / hygiene awareness	D(ATS)	Section Head
Check / stockpile face masks, gloves	M(ANS SO)	1ANSO(ANS P)
Identify ATC/AIS operational staff for recall pool	CS	Unit Chief
Brief operational staff on ATS Flu Pandemic BCP	CATCO	Unit Chief

Alert Yellow

Additional Measures by Division	Activated by:	Action Officer
Facilitate contact history tracing	D(ATS)	Section Head
Increase frequency of cleaning of work areas	CATCO	Unit Chief
Require mandatory daily health declaration and temperature checks of staff and visitors	D(ATS)	Section Head

Alert Orange

Additional Measures by Division	Activated by:	Action Officer
Require supervisors to look out for staff who appear sickly	D(ATS)	Section Head
Require staff who are unwell not to come to work but to see a doctor immediately	D(ATS)	Section Head
Restrict travels and visitors	D(ATS)	Section Head
Reduce contact with public / visitors	D(ATS)	Section Head
Minimise mixing of staff	D(ATS)	Section Head
Prepare for escalation of DORSCON Alerts	D(ATS)	Section Head

Alert Red and Black

Additional Measures by Division	Activated by:	Action Officer
Implement shift-work / telecommuting arrangements when directed	D(ATS)	Section Head
Implement minimal staffing arrangements when directed	D(ATS)	Section Head
Require mandatory 4 times daily temperature check	D(ATS)	Section Head
Implement ATC contingency plans for flu pandemic	D(ATS)	Section Head

No. of officers in Team A	63
No. of officers in Team B	62
No. of officers telecommuting	102
No. of officers required for minimal staffing in CAAS ATS offices during Alert Black.	125
No. of ATS officers to remain home during Alert Black	0

ANNEX A - Shiftwork Roster

ANNEX B - Telecommuting Roster

ANNEX C - Minimal Staffing Roster

ANNEX D - ATS Division Activation Plan

ANNEX E - ATS Division Officers Requiring Anti-Viral Prophylaxis

ANNEX F - ATC Services Influenza Pandemic BCP

ATS DIVISION

Shift-work Roster

Business Function	TEAM A	TEAM B
HQ	1. D(ATS) 2. DCATCO(O) 3. ATCM(DP) 4. EE(Contracts) 5. 1ANSO(ANS P) 6. 2E(ATS) 7. 3E(ATS)	1. CATCO 2. H(DP) 3. SATCM(DP) 4. M(DP) 5. TO(Contracts) 6. 2ANSO(ANS P) 7. 1E(ATS)
AIRSPACE /PLANNING	8. H(ATM OP) 9. ATCM(ATM OS) 10. 1ATCM(ATM OP)	8. H(ATM OS) 9. SATCM(ATM OP) 10. 2ATCM(ATM OP) 11. TO(ATM OP)
ANS/ANS SO	11. H(ANS P) 12. 1SM(N ANSP) 13. 3SM (N ANSP) 14. 1ATCM(ANS SO) 15. 3ATCM(ANS SO) 16. AM(I ANSP) 17. 2E(ANSP)	12. H(I ANSP) 13. 2SM(N ANSP) 14. H(ANS SO) 15. 2ATCM(ANS SO) 16. M(ANS SO) 17. 1E(ANSP) 18. TO(ANSP)
ATE	18. D(ATE) 19. H(ATMS) 20. H(S) 21. SE(C/N) 22. 2SE(S) 23. SE(TS) 24. 3SE(ATMS) 25. 1EE(C/N) 26. EE(S) 27. 2EE(ATMS) 28. SE(ATE) 29. E(ATMS) 30. PTO(S) 31. 2 STO(C/N) 32. 4STO(C/N) 33. 2STO(S) 34. 4STO(S) 35. 2STO(ATMS) 36. 2TO(C/N) 37. 1TO(S) 38. TO(TS) 39. H(EPM) 40. EE(Civil)	19. H(TS) 20. H(C/N) 21. PE(S) 22. 1SE(S) 23. 1SE(ATMS) 24. 2SE(ATMS) 25. 4SE(ATMS) 26. 2EE(C/N) 27. 1EE(ATMS) 28. 3EE(ATMS) 29. SYS E (S) 30. SPTO(C/N) 31. 1STO(C/N) 32. 3STO(C/N) 33. 1STO(S) 34. 3 STO(S) 35. 1STO(ATMS) 36. 1TO(C/N) 37. 2TO(S) 38. TO(ATMS) 39. E(ATE) 40. SE(M) 41. 1EE(E)

	41. 2EE(E) 42. 1SPTO(M) 43. SPTO(E) 44. STO(E) 45. 2STO(Civil) 46. TO(E) 47. 2TO(Civil) 48. 4TO(Civil)	42. 3EE(E) 43. 2SPTO(M) 44. STO(M) 45. 1STO(Civil) 46. TO(M) 47. 1TO(Civil) 48. 3TO(Civil) 49. HTC(N)(M)
SATCC	49. CS 50. DCS(App) 51. SATCM (SAR/BCP) 52. CFS 53. 1E(SATCC) 54. 2E(SATCC) 55. 4E(SATCC)	50.DCS(Area) 51. SATCPO(BCP/SEC) 52. ATCM(T&D) 53. DCFS 54.SE(SATCC) 55. 3E(SATCC)
STANDARDS & SAFETY	56. H(S&S) 57. 1ATCM(S&S) 58. 3ATCM(S&S)	56. SATCM(S&S) 57. 2ATCM(S&S)
CONTROL TOWER	59. CCT 60. DCST 61. SA(Changi)	58. DCCT 59. CST 60. A(Seletar)
AIS	62. CAIS 63. TO(AIS)	61. DC (AIS) 62. E(AIS)

ANNEX B

ATS DIVISION

Telecommuting Roster

Business Function	Officer name	Team A/B?	Laptop?	VPN?
HQ	1. Kuah Kong Beng	A	Y	Y
	2. Rosly Saad	B	Y	Y
	3. Victor Tan	A	Y	Y
	4. Tan Yean Guan	B	Y	Y
	5. Rick Lye	A	Y	Y
	6. Kathirvelu	B	Y	Y
	7. Sng Siew Gek	A	Y	Y
	8. Lui Ho Man	B	Y	Y
	9. Mohd Fadzil	A		
	10. Emily Soh	B		
	11. Akhirriah	A		
	12. P Balakrishnan	B		
	13. Tan Tee Hoon	A		
	14. Toh Shin Yan	B		
AIRSPACE	15. Hermizan Jumari	A	Y	Y
	16. Kwek Chin Lin	B	Y	Y
	17. Joe Chua	A	Y	Y
	18. Harrison Lim	B	Y	Y
	19. Michael Shee	A	Y	Y
	20. Sivaprakasam	B	Y	Y
	21. Jimit Singh	B	Y	Y
ANS/ ANS SO	22. Penny Ng	A	Y	Y
	23. Jeffrey Loke	B	Y	Y
	24. Mark Wan	A	Y	Y
	25. Yap Chui Wah	B	Y	Y
	26. Victor Sim	A	Y	Y
	27. Peter Rabot	B	Y	Y
	28. Valerie Sim	A	Y	Y
	29. Ying Weng Kit	B	Y	Y
	30. Magnus Teo	A	Y	Y
	31. Sia Hon Yu	B	Y	Y
	32. Mavis Chung	A	Y	Y
	33. Nuraien Shinei	B	Y	Y
	34. Siti Alawiyah	A	Y	Y
	35. Kenneth Yong	B	Y	Y
ATE	36. Yeo Cheng Nam	A	Y	Y
	37. Melisa Wee	B	Y	Y

39.	Chua Kim Hee	A	Y	Y
40.	Louie Cheng	B	Y	Y
41.	Ho Wee Sin	A	Y	Y
42.	Sng Sin Hie	B	Y	Y
43.	Ng Mei Chin	A	Y	Y
44.	Chew Guang Wei	B	Y	Y
45.	Chan Tai Khoon	A	Y	Y
46.	Victor Lee	B	Y	Y
47.	Keith Yeo	A	Y	Y
48.	Christina Ong	B	Y	Y
49.	Lee Shi Min	A	Y	Y
50.	Gao Shu	B	Y	Y
51.	Ng Him Yick	A	Y	Y
52.	Keith Huang	B	Y	Y
53.	Lim Hong Heng	A	Y	Y
54.	Tan Choon Leong	B	Y	Y
55.	David Leow	A	Y	Y
56.	Raece Tay	B	Y	Y
57.	Mohd Zahid	A	Y	Y
58.	Tan Wen Jie	B	Y	Y
59.	Chan Kok Sunn	A	Y	Y
60.	Sim Poh Yong	B	Y	Y
61.	Iskandar S.	A	Y	Y
62.	Dennis Chan	B	Y	Y
63.	Yee Kok Fai	A	Y	Y
64.	Mohd Zaki	B	Y	Y
65.	Tan Ho Seng	A	Y	Y
66.	Sam Chan	B	Y	Y
67.	Khoo Meng Soon	A	Y	Y
68.	Stephen Yip	B	Y	Y
69.	Esther Cheong	A	Y	Y
70.	Kevin Kong	B	Y	Y
71.	Mohd Nizam	A	Y	Y
72.	Teng Guo Jun	B	Y	Y
73.	Anthony Ngo	A	Y	Y
74.	Tan Li Bin	B	Y	Y
75.	Yeoh Yee Leng	A	Y	Y
76.	Tan Teck Meng	B	Y	Y
77.	Alyssa Poh	A	Y	Y
78.	Lee Wei Kwong	B	Y	Y
79.	Ho Toon Hui	A	Y	Y
80.	Joanna Nah	B	Y	Y
81.	Ng Jingfeng	A	Y	Y
82.	Chia Zuan Bao	B	Y	Y
83.	Ryan Yeo	A	Y	Y
84.	Mak Kah Pok	B	Y	Y
85.	Lim Tai Chye	A	Y	Y
86.	Seow Yin Khoi	B	Y	Y
87.	Seah Kim Leng	A	Y	Y
88.	Tan Bak Huay	B		

	89. Esman Markani 90. Abdul Malek 91. Saiful Ab Rahman 92. Rosman Parni 93. Danny Lim 94. Yvonne Loh 95. Rasitah Rasit 96. Merilyn Ng 97. Koh Hiap Meng	A B A B A B A B A B		
SATCC	98. Andrew Wee 99. Edmund Heng 100. Andrew Bheem 101. Raymond Seah 102. Tai Kit 103. Tay Chin Heng 104. R Sundraraj 105. Carol Lim 106. Irene Wong 107. Azlina Rafiee 108. Indirawaty 109. Mohd Fazlee 110. Namira Ahmad	A B A B A B A B A B A B A	Y Y Y Y Y Y Y Y Y Y Y Y	Y Y Y Y Y Y Y Y Y Y Y
STANDARDS & SAFETY	111. Balbir Singh 112. Thomas Teh 113. Kenneth Lim 114. Tay Siah Heng 115. Ngui Le Chen	A B A B A	Y Y Y Y Y	Y Y Y Y Y
CHANGI/ SELETAR CONTROL TOWER	116. Lim Lam Seng 117. Tan Mang Jye 118. Vincent Hwa 119. Naresh Kumar 120. Soon Chen Keat 121. Iris Leong	A B B A B A	Y Y Y Y	Y Y Y Y
AIS	122. Wong Liang Fen 123. Charn Kaur 124. Anne Lau 125. Veronica Ong	A B A B	Y Y	Y Y

ATS DIVISION

Minimal Staffing Roster (Alert BLACK)

Business Function	Officer name	Working Arrangements, if other than 5-day work week
HQ	1. Kuah Kong Beng	To return on Mon, Wed and Fri only
	2. Victor Tan	To return on Mon, Wed and Fri only
	3. Rick Lye	To return on Mon, Wed and Fri only
	4. Sng Siew Gek	To return on Mon, Wed and Fri only
	5. Mohd Fadzil	To return on Mon, Wed and Fri only
	6. Tan Tee Hoon	To return on Mon, Wed and Fri only
	7. Akhirriah	To return on Mon, Wed and Fri only
	8. Rosly Saad	To return on Tue, Thu only
	9. Tan Yean Guan	To return on Tue, Thu only
	10. Karthirvelu	To return on Tue, Thu only
	11. Lui Ho Man	To return on Tue, Thu only
	12. Emily Soh	To return on Tue, Thu only
	13. Balakrishnan	To return on Tue, Thu only
	14. Toh Shin Yan	To return on Tue, Thu only
AIRSPACE	15. Hermizan Jumari	To return on Mon, Wed and Fri only
	16. Joe Chua	To return on Mon, Wed and Fri only
	17. Michael Shee	To return on Mon, Wed and Fri only
	18. Kwek Chin Lin	To return on Tue, Thu only
	19. Harrison Lim	To return on Tue, Thu only
	20. Sivaprakasam	To return on Tue, Thu only
	21. Jimit Singh	To return on Tue, Thu only
ANS	22. Penny Ng	To return on Mon, Wed and Fri only
	23. Mark Wan	To return on Mon, Wed and Fri only
	24. Victor Sim	To return on Mon, Wed and Fri only
	25. Valerie Sim	To return on Mon, Wed and Fri only
	26. Magnus Teo	To return on Mon, Wed and Fri only
	27. Mavis Chung	To return on Mon, Wed and Fri only
	28. Siti Alwiyah	To return on Mon, Wed and Fri only
	29. Jeffrey Loke	To return on Tue, Thu only
	30. Yap Chui Wah	To return on Tue, Thu only
	31. Peter Rabot	To return on Tue, Thu only
	32. Ying Weng Kit	To return on Tue, Thu only
	33. Sia Hong Yu	To return on Tue, Thu only
	34. Nuraien Shimei	To return on Tue, Thu only
	35. Kenneth Yong	To return on Tue, Thu only
ATE	36. Yeo Cheng Nam	To return on Mon, Wed and Fri only
	37. Melisa Wee	To return on Mon, Wed and Fri only
	38. Louie Cheng	To return on Mon, Wed and Fri only
	39. Sng Sin Hie	To return on Mon, Wed and Fri only
	40. Chew Guang Wei	To return on Mon, Wed and Fri only
	41. Victor Lee	To return on Mon, Wed and Fri only
	42. Christina Ong	To return on Mon, Wed and Fri only
	43. Gao Shu	To return on Mon, Wed and Fri only
	44. Keith Huang	To return on Mon, Wed and Fri only
	45. Tan Choon Leong	To return on Mon, Wed and Fri only
	46. Raece Tay	To return on Mon, Wed and Fri only
	47. Tan Wen Jie	To return on Mon, Wed and Fri only
	48. Sim Poh Yong	To return on Mon, Wed and Fri only
	49. Dennis Chan	To return on Mon, Wed and Fri only

	109. Azlina Rafiee 110. Mohd Fazlee	To return on Tue, Thu only To return on Tue, Thu only
PCC	111. Balbir Singh 112. Kenneth Lim 113. Ngui Le Chen 114. Thomas Teh 115. Tay Siah Heng	To return on Mon, Wed and Fri only To return on Mon, Wed and Fri only To return on Mon, Wed and Fri only To return on Tue, Thu only To return on Tue, Thu only
CONTROL TOWER	116. Lim Lam Seng 117. Naresh Kumar 118. Iris Leong 119. Tan Mang Jye 120. Vincent Hwa 121. Soon Chen Keat	To return on Mon, Wed and Fri only To return on Mon, Wed and Fri only To return on Mon, Wed and Fri only To return on Tue, Thu only To return on Tue, Thu only To return on Tue, Thu only
AIS	122. Wong Liang Fen 123. Anne Lau. 124. Charn Kaur 125. Veronica Ong	To return on Mon, Wed and Fri only To return on Mon, Wed and Fri only To return on Tue, Thu only To return on Tue, Thu only

ATS DIVISION

Minimal Staffing Working Arrangements (Alert BLACK)

Business Function	MON	TUE	WED	THU	FRI
HQ	D(ATS) DCATCO(O) ATCM(DP) EE(Contracts) 1ANSO (ANS P) 2E(ATS) 3E(ATS)	CATCO H(DP) SATCM(DP) M(DP) TO(Contracts) 2ANSO(ANS P) 1E(ATS)	D(ATS) DCATCO(O) ATCM(DP) EE(Contracts) 1ANSO (ANS P) 2E(ATS) 3E(ATS)	CATCO H(DP) SATCM(DP) M(DP) TO(Contracts) 2ANSO(ANS P) 1E(ATS)	D(ATS) DCATCO(O) ATCM(DP) EE(Contracts) 1ANSO (ANS P) 2E(ATS) 3E(ATS)
AIRSPAC E	H(ATM OP) ATCM (ATM OS) 1ATCM (ATM OP)	H(ATM OS) SATCM(ATM OP) 2ATCM(ATM OP) TO(Contracts)	H(ATM OP) ATCM (ATM OS) 1ATCM (ATM OP)	H(ATM OS) SATCM(ATM OP) 2ATCM(ATM OP) TO(Contracts)	H(ATM OP) ATCM (ATM OS) 1ATCM (ATM OP)
ANS/ ANS SO	H(ANS P) 1SM(N ANSP) 3SM(N ANSP) 1ATCM(ANS SO) 3ATCM(ANS SO) AM(I ANSP) 2E (ANSP)	H(I ANSP) 2SM(N ANSP) H(ANS SO) 2 ATCM(ANS SO) M(ANS SO) 1E (ANSP) TO(ANSP)	H(ANS P) 1SM(N ANSP) 3SM(N ANSP) 1ATCM(ANS SO) 3ATCM(ANS SO) AM(I ANSP) 2E (ANSP)	H(I ANSP) 2SM(N ANSP) H(ANS SO) 2 ATCM(ANS SO) M(ANS SO) 1E (ANSP) TO(ANSP)	H(ANS P) 1SM(N ANSP) 3SM(N ANSP) 1ATCM(ANS SO) 3ATCM(ANS SO) AM(I ANSP) 2E (ANSP)
ATE	D(ATE) H(ATMS) H(S) SE(C/N) 2SE (S) SE(TS) 3SE(ATMS) 1EE(C/N) EE(S) 2EE(ATMS) SE(ATE) E(ATMS) PTO(S) 2STO(C/N) 4STO(C/N) 2STO(S) 4STO(s) 2STO(ATMS) 2TO(C/N) 1TO(S) TO(TS) H(EPM) EE(Civil) 2EE(E) 1SPTO(M) SPTO(E) STO(E) 2STO(Civil) TO(E)	H(TS) H(C/N) PE(S) 1SE(S) 1SE(ATMS) 2SE(ATMS) 4SE(ATMS) 2EE(C/N) 1EE(ATMS) 3EE(ATMS) SYS E (S) SPTO(C/N) 1STO(C/N) 3STO(C/N) 1STO(S) 3STO(S) 1STO(ATMS) 1TO(C/N) 2TO(S) TO(ATMS) E(ATE) SE(M) 1EE(E) 3EE(E) 2SPTO(M) STO(M) 1STO(Civil) TO(M) 1TO(Civil)	D(ATE) H(ATMS) H(S) SE(C/N) 2SE (S) SE(TS) 3SE(ATMS) 1EE(C/N) EE(S) 2EE(ATMS) SE(ATE) E(ATMS) PTO(S) 2STO(C/N) 4STO(C/N) 2STO(S) 4STO(s) 2STO(ATMS) 2TO(C/N) 1TO(S) TO(TS) H(EPM) EE(Civil) 2EE(E) 1SPTO(M) SPTO(E) STO(E) 2STO(Civil) TO(E)	H(TS) H(C/N) PE(S) 1SE(S) 1SE(ATMS) 2SE(ATMS) 4SE(ATMS) 2EE(C/N) 1EE(ATMS) 3EE(ATMS) SYS E (S) SPTO(C/N) 1STO(C/N) 3STO(C/N) 1STO(S) 3STO(S) 1STO(ATMS) 1TO(C/N) 2TO(S) TO(ATMS) E(ATE) SE(M) 1EE(E) 3EE(E) 2SPTO(M) STO(M) 1STO(Civil) TO(M) 1TO(Civil)	D(ATE) H(ATMS) H(S) SE(C/N) 2SE (S) SE(TS) 3SE(ATMS) 1EE(C/N) EE(S) 2EE(ATMS) SE(ATE) E(ATMS) PTO(S) 2STO(C/N) 4STO(C/N) 2STO(S) 4STO(s) 2STO(ATMS) 2TO(C/N) 1TO(S) TO(TS) H(EPM) EE(Civil) 2EE(E) 1SPTO(M) SPTO(E) STO(E) 2STO(Civil) TO(E)

	2TO(Civil) 4TO(Civil)	3TO(Civil) HTCN(M)	2TO(Civil) 4TO(Civil)	3TO(Civil) HTCN(M)	2TO(Civil) 4TO(Civil)
SATCC	CS DCS(App) SATCM(SAR/BCP) CFS 1E(SATCC) 2E(SATCC) 4E(SATCC)	DCS(Area) SATCPO(BCP/SEC) ATCM(T&D) DCFS SE(SATCC) 3E(SATCC)	CS DCS(App) SATCM(SAR/BCP) CFS 1E(SATCC) 2E(SATCC) 4E(SATCC)	DCS(Area) SATCPO(BCP/SEC) ATCM(T&D) DCFS SE(SATCC) 3E(SATCC)	CS DCS(App) SATCM(SAR/BCP) CFS 1E(SATCC) 2E(SATCC) 4E(SATCC)
PCC	H(S&S) 1ATCM(S&S) 3ATCM(S&S)	SATCM(S&S) 2ATCM(S&S)	H(S&S) 1ATCM(S&S) 3ATCM(S&S)	SATCM(S&S) 2ATCM(S&S)	H(S&S) 1ATCM(S&S) 3ATCM(S&S)
CONTROL TOWER	CCT DCST SA(Changi)	DCCT CST A(Seletar)	CCT DCST SA(Changi)	DCCT CST A(Seletar)	CCT DCST SA(Changi)
 AIS	CAIS TO(AIS)	DC(AIS) E(AIS)	CAIS TO(AIS)	DC(AIS) E(AIS)	CAIS TO(AIS)
TOTAL:	63	62	63	62	63

ATS DIVISION

Staff Remaining at Home (Alert RED)

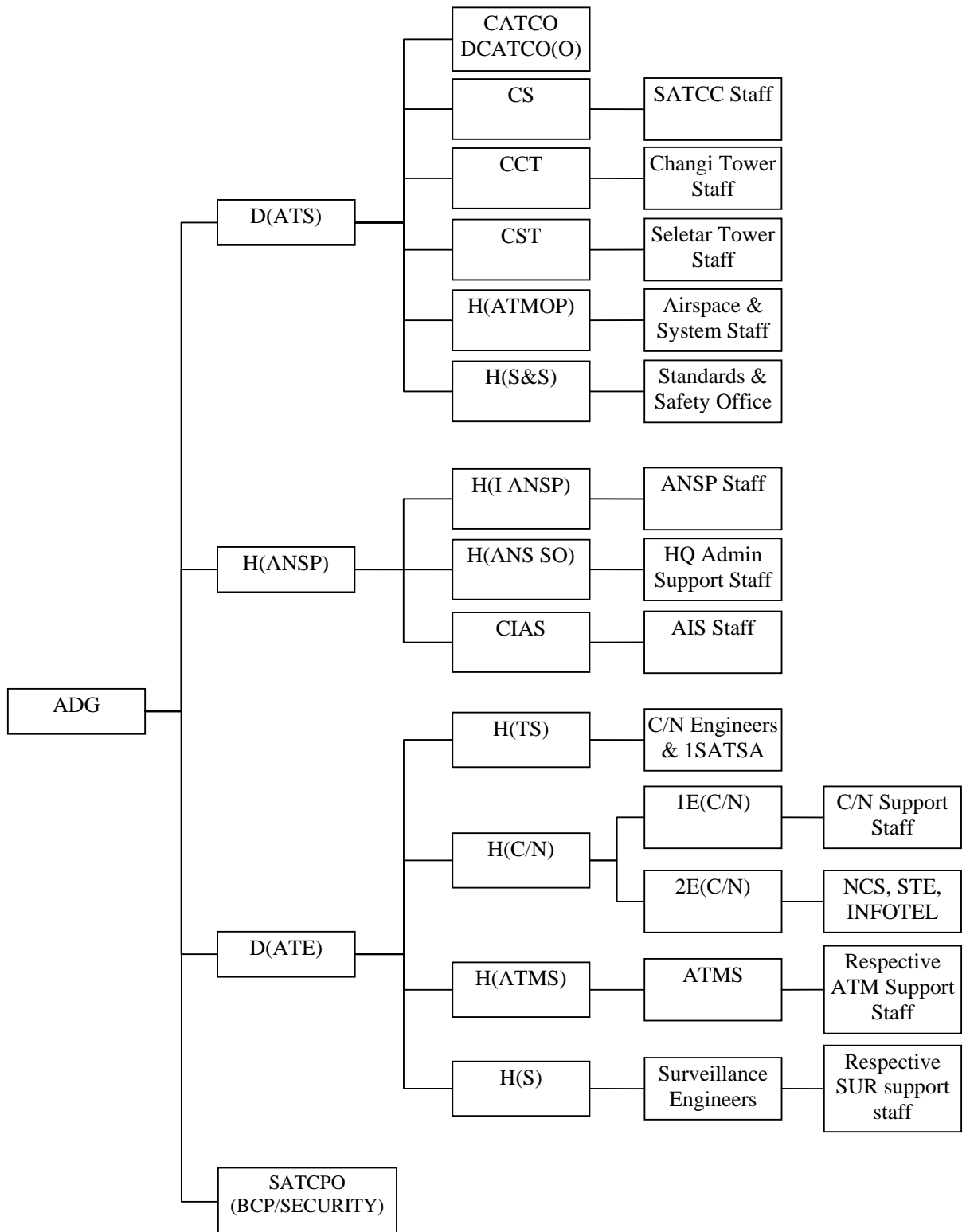
NIL

ATS DIVISION**DIVISION ACTIVATION PLAN** (see chart on page 2)

The decision to activate shift work or telecommuting would be made by DG (at Alert RED). If the decision is made outside of office hours, DG shall inform the CAAS BCP cell of his decision to activate shift work. The cell shall inform DDG and all Directors, who would in turn inform the divisions under their care.

1. When informed by DDG of activation of shift work or telecommuting (at Alert RED) and activation of minimal staffing, ADG will inform the following:
 - a) D(ATS)
 - b) D(ATE)
 - c) H(ANSP)
 - d) SATCPO(BCP/Security)
2. D(ATS) will inform the following:
 - a) CATCO, DCATCO(O),H(ANS SO) and H(DP)
 - b) CS will inform SATCC staff
 - c) CCT will inform Changi Tower staff
 - d) CST will inform Seletar Tower staff
 - e) H(ATCM OP) will inform Airspace and System staff
 - f) H(S&S) will inform Standards and Safety staff
3. H(ANSP) will inform the following:
 - a) H(I ANSP) will inform ANS support staff and HQ administrative support staff
 - b) H(ANS SO) – will inform Safety Office staff
 - c) CAIS – who will inform AIS staff
4. D(ATE) will inform the following:
 - a) H(TS), H(C/N),H(S), HEPM) and H(ATMS) – who will inform their respective engineers and SE(ATE)
 - b) H(S) who will inform ATMS and Surveillance engineers
5. ATMS, C/N, Surveillance and EPM engineers will inform their respective support staff
6. In addition, SE(C/N) will inform NCS, STE and INFOTEL

ATS DIVISION ACTIVATION



ATS DIVISION

ATS DIV OFFICERS REQUIRING ANTI-VIRAL PROPHYLAXIS

Location	No. of Staff
HQ/UNIT ADM	21
ATE	62
ATC	300
FS	40
AIS	20
ANS	14
	457
NCS	40
INFOTEL	40
STE	10
	90
TOTAL:	547

B. INFLUENZA PANDEMIC BUSINESS CONTINUITY PLAN

Introduction

1 The provision of air traffic services is an essential service to ensure the safety and efficiency of flights in and out of the Singapore Flight Information Region and airports. The essential elements for continuity in the provision of air traffic control (ATC) services are adequate ATC manpower and serviceable ATC equipment.

2 The ATS Division Business Continuity Plan (BCP) aims to ensure the continuity of the provision of air traffic services in the event of an influenza pandemic occurring in Singapore.

3 This BCP covers the **preventive measures, contingency measures, ATC contingency plans and EF coordination and communications plan** that will be activated during the Disease Outbreak Response System (DORS) Alert levels (elaborated below) of the Ministry of Health (MOH).

Disease Outbreak Response System

4 The DORS is a generic framework which enables MOH to respond immediately to any outbreaks and serves as a nucleus to ramp up for a higher level of response.

(a) Alert GREEN

There is global concern, including WHO, about the possible emergence of a novel virus. In this case, there may be isolated external or local cases of animal to human case, but the threat of human-to-human infection remains low. Hence, at Alert GREEN, the disease, if any, is basically limited to animals.

(b) Alert YELLOW

This refers to a situation where there are inefficient human-to-human transmissions of influenza caused by a novel virus outside Singapore. The potential for a global influenza pandemic is high, though not inevitable as it would still be possible to contain the outbreak through aggressive measures by the affected country. The risk of import into Singapore is elevated. Where there are isolated imported cases, such cases have not resulted in sustained transmission locally.

(c) Alert ORANGE

This is when a pandemic is underway and the infection has evolved to become a human disease. WHO has confirmed that the novel virus is causing several outbreaks in one country and this has spread to other countries with consistent disease patterns indicating serious morbidity and mortality is likely in at least one segment of the affected population.

Locally, there is a confirmation of novel virus infection case(s) and evidence of more than one transmission, but the outbreak has not reached the community level. However, given the infectivity of the virus, further outbreaks of the disease are expected.

(d) Alert RED

Alert Red is sounded when the morbidity and mortality rates are exceedingly high, and emergency measures are needed to bring the situation under control. The healthcare and other social support systems are overwhelmed by the pandemic. Economic activities are severely disrupted, as panic sweeps through the community.

- 5 The alert levels provide a guide for response planning and execution in the event of an influenza pandemic. However if the progression of the disease is very fast, it may not be operationally feasible to have a clear, sequentially graduated response.

Planning Assumptions

- 6 The ATS Division Business Continuity Plan is based on the following planning assumptions provided by the Ministry of Health:

- a) The virus is likely to spread quickly and associated with a high morbidity and/or mortality. Although the human flu is transmitted mainly through droplets, it is much more infectious than SARS.

Spread of Virus: The infection of one staff in any essential functional area would immobilise the whole group. To prevent a cessation in the provision of essential services, there needs to be a separation of staff to ensure minimal contact. In addition, back-up or alternate officers have to be identified should the usual staff are not able to function.

- b) The length of each wave is six weeks. A pandemic usually spreads in two or more waves, either in the same year or in successive influenza seasons. A second wave may occur within 3 to 9 months of the initial outbreak and may cause more serious illnesses and deaths than the first. Based on published data from temperate countries, the length of each wave is expected to be up to 6 weeks.

Strain on resources: The influenza pandemic will severely strain resources, eg staff absenteeism. According to MOH experts, it is estimated that about 20% of the population will fall sick, and an estimated 1% population mortality rate. In addition, staff may not report for work because of fear or because they have to look after their children due to closure of schools, or to look after their siblings who may be sick at home.

- 7 It is assumed that air traffic into Changi Airport will decrease as experienced during the SARS outbreak in 2003, but air traffic within the Flight Information Region may not decrease so significantly.

PREVENTIVE MEASURES

1. This section outlines the preventive measures to reduce the risk of influenza transmission in the workplace.

Symptoms of Influenza

2. Symptoms suggestive of influenza are fever of more than or equal to 38°C and/or cough, malaise, chills, headache, myalgia, etc. The unwell person may also have travelled to influenza affected countries within 10 days of onset of symptoms or have had close contact¹ with person(s) diagnosed or suspected to have influenza.

3. During a pandemic, updates will be provided on the MOH website at <http://www.moh.gov.sg/>.

REDUCING THE RISK OF INFLUENZA INFECTION IN THE WORKPLACE

(Communications materials are distributed by HR Division at alert Yellow.)

4. Watch managers / supervisors should:

- a) Advise their staff not to come to work when they are feeling unwell. Unwell staff should also be advised to see a doctor.
- b) Encourage their staff to practise good hygiene in the workplace.

WHAT TO DO IF A STAFF HAS SYMPTOMS SUGGESTIVE OF INFLUENZA

5. In the event watch managers / supervisors observe or receive a report of a staff that is unwell in the workplace with symptoms suggestive of influenza, the unwell staff should be:

- a) Isolated and moved to a room or area away from other staff/guests.
- b) Advised to use only the toilet facility designated for him/her (if possible).
- c) Provided with a surgical mask to wear in order to reduce the amount of droplets coughed into the air. Masks should be changed if they become wet, hard to breathe in, physically damaged or visibly soiled.
- d) Advised to cover his/her mouth and nose with tissues when coughing or sneezing if a surgical mask is not available.

6. In addition, watch managers / supervisors should:

- a) Keep the number of staff attending to the ill person to a minimum. Staff attending to the ill person should wear N95 masks and disposable gloves.

¹ Close contact means having lived with, or having come within 2m shared space with a person with influenza within 5 days of onset of symptoms.

- b) Call **993** to request for special transport provided by MOH to bring the ill person to the designated FLU Clinic for assessment.
- c) Take down the names and contact details (IC number, address, telephone number) of all persons who have come into contact with the staff when he/she had fever. If the ill staff is confirmed to have influenza, MOH officers will contact the organisation to trace all those who come into contact with him/her and advise on which staff would need to be quarantined (at Alert YELLOW and at Alert ORANGE as well, if operationally feasible) or put on phone surveillance (at Alert GREEN Level 1). At Alert GREEN (when there is a local case of novel virus infection in humans) and YELLOW, contacts will be given anti-virals as prophylaxis as a precaution. They are to be present at Tan Tock Seng Hospital Emergency Department to be prescribed and provided with the anti-virals.

CLEANING AND DISINFECTION OF WORK AREAS

- 7. When a suspected influenza case was in the premises, the watch manager/supervisor should seal (where possible) the areas where the suspected person has been and arrange for immediate cleaning and disinfection. There is no need for special cleaning or disinfection of other areas. Routine cleaning of these other areas can be carried out as usual with no special precautions such as masks, gloves or disinfectant use.
- 8. When cleaning areas where a suspected case has been, cleaners should:
 - a) Wear disposable gloves. Gloves should be removed and discarded if they become soiled or damaged and a new pair worn. Gloves should also be removed and discarded after cleaning activities are completed.
 - b) Wash their hands with soap and water immediately after the gloves are removed and when cleaning is completed.
- 9. Cleaning methods that might re-aerosolise infectious material, such as the use of compressed air, must not be used.
- 10. Frequently touched surfaces (e.g. arm rests, seatbacks, tables, chairs, door knobs, light and air controls, and adjacent walls and windows) and lavatory surfaces should be wiped down with chemical disinfectants and allowed to air dry.

CONTINGENCY MEASURES

General

1. Based on information from WHO and MOH, Influenza is spread through droplets infection or contact, either direct or indirect, with respiratory secretions. This requires close contact with persons diagnosed with influenza (i.e. having cared for, having lived with or having direct contact with respiratory secretions of a flu patient). The incubation period of influenza is typically 2 days, with a range of 1 – 4 days. After the incubation period, the patient exhibits flu symptoms, particularly the onset of high fever of more than or equal to 38°C and/or cough, malaise, chills, headache, myalgia, etc. Infected persons can be contagious one day before the onset of symptoms. Infected persons with minimal symptoms may still shed the virus and be infectious.
2. Survival of the influenza virus outside the body varies with temperature and humidity. It generally survives 24 - 48 hours on nonporous surfaces, 8 - 12 hours on porous surfaces, e.g. cloth/paper/tissue, and 5 minutes on hands. Survival of the virus is enhanced under conditions of low humidity and in the cold.
3. The following contingency measures shall to be implemented by ATS Division during an influenza pandemic:

Alert GREEN

- (a) Heighten health / hygiene awareness. Circulate / post MOH's advisory on personal hygiene measures to all staff with constant reminders through internal circulars, including publicising MOH hotline (Tel: 1800-3339999) for staff to call on any flu-related concerns and Tan Tock Seng Hospital's number to call for an ambulance (Tel: 993).
- (b) Brief staff on the Influenza Pandemic BCP.
- (c) Check / stockpile personal protection equipment (PPE) such as face masks, disposable gloves.
- (d) Identify ATS operational staff for contingency recall.

Alert YELLOW

- (e) Facilitate contact history tracing. Compile list of contractors working at operational units. (See [Appendix 3](#)). Record identities of all visitors (including repairmen and delivery men) and participants at meetings.
- (f) Increase frequency of cleaning and disinfecting of work areas. Increase frequency of air changes at units and opening of windows (for sunning and airing) where practicable.

- (g) Require mandatory daily health declaration and temperature checks routine to ensure:
 - (i) Staff do not have fever (temperature of above 37.5°C);
 - (ii) Staff do not have flu symptoms (eg cough, shortness of breath and breathing difficulties);
 - (iii) Staff have not travelled to flu-affected areas as listed in the World Health Organisation (WHO) website www.who.int/csr/disease/avian_influenza/en/ in the preceding 10 days;
 - (iv) Staff have not been in contact with anyone affected by flu;
 - (v) Staff of different shifts are symptom-free when they inter-mingle during shift changes, to minimise the chances of cross-infection between shifts. (See detailed procedures for staff in operational units at **Appendix 1, Parts A and B**).

- (h) Require mandatory daily health declaration and temperature checks by all visitors (internal and external) and contractors before entering operations room or tower cabin at units. (See detailed procedures for visitors and contractors at **Appendix 1, Parts C and D**).

Alert ORANGE

- (i) Require unit chiefs / watch managers / supervisors to look out for staff that appear sickly.

- (j) Require staff that are unwell not to come to work but to see a doctor immediately.

- (k) Restrict travels and official visits.
 - (i) Require staff to declare their travel history and plans to travel to flu-affected countries.
 - (ii) Require staff that have just returned from flu-affected countries to stay away from the office for 5 days (1 incubation period).
 - (iii) Postpone official visits to flu-affected countries (eg familiarisation flights).
 - (iv) Monitor closely the condition of staff who have fallen ill or are quarantined.

- (l) Reduce contact with public / visitors.
 - (i) Postpone official visits by persons from flu-affected countries.
 - (ii) Limit events to essential ones (eg postponing ATC open house, cancelling non-essential visits from external parties to ATC facilities).
 - (iii) Avoid physical contact with customers and visitors (no handshake) if possible.

- (iv) Increase public awareness of the availability of on-line services (eg, Internet AIS for filing of flight plans and retrieval of NOTAMs to reduce interaction with the public at AIS offices).
- (m) Minimise mixing of staff.
 - (i) Keep meetings small.
 - (ii) Plan duty roster such that there is minimal movement of staff across watches and units.
 - (iii) Reduce inter-mingling between HQ staff and unit staff eg through conference calls.
 - (iv) Require senior officers to bring home their Notebook PCs every day (including over the weekends) to enable working from home if required.
- (n) Require cleaning / disinfecting of work place when suspected / confirmed flu cases occur at the work place. (See procedures and contact numbers at [Appendix 2](#)).

Alert RED

- (o) ATS Division will implement telecommuting / shift-work arrangements involving all office-hour staff at HQ and ATS units when directed.
- (p) Require mandatory four times daily temperature check of all staff and contractors.
- (q) Implement ATC contingency plans for flu pandemic.
- (r) ATS Division will implement minimal staffing work arrangements for its office-hour staff at HQ and ATS units when directed.
- (s) Prohibit all overseas travel.
- (t) Cancel all public events

ATC CONTINGENCY PLANS

Scenarios

1. Under Alert RED, contingency plans have been drawn up for the following two scenarios and are elaborated below:

- (a) An entire shift has to be quarantined.
- (b) The premises / building is deemed unsafe.

An Entire Watch Has To Be Quarantined

2. Arising from a FLU case at the operational unit / tower cabin, MOH will contact CAAS to trace all those who had come into contact with the patient, and advise on who are the employees who need to be quarantined at home. (Hence, the importance of temperature taking before end of shift to minimise the need to quarantine more than a shift of staff.) These persons will be served with Home Quarantine Orders (HQO) under the Infectious Diseases Act for 5 days (1 incubation period). No HQO is required for discharged cases.

3. If an entire shift has to be quarantined, the following actions are to be taken to create a contingency shift of staff to ensure adequate manning of operational positions:

SATCC, Changi Tower and Seletar Tower

- (a) Cancel staff leave.
- (b) Draw on the pool of rated trainees and instructors at the Singapore Aviation Academy (SAA) to work in shifts.
- (c) Draw on controllers on projects (on office hours), Standards & Safety Controllers and planners to work in shifts. See details at [Appendix 4](#).
- (d) If absolutely necessary, Seletar would be closed so that Seletar Tower controllers can be rostered for Approach duties at SATCC.

Flight Services and AIS

- (a) Cancel staff leave.
- (b) Draw on office-hour staff to work in shifts.
- (c) AIS officers may be deployed to help out Flight Services unit, and vice versa.

The Premises / Building Is Deemed Unsafe

4. In extremis, the entire premises or building may be contaminated and declared off-limits, requiring operations to be temporarily relocated. Under such circumstance, it is imperative that the decontamination period be kept to a minimum.

5. Engineering Projects and Maintenance officers are to be activated to decontaminate the premises / building. Thorough decontamination is expected to be about six hours for SATCC and three hours for Changi / Seletar Towers and AIS. The contact list of relevant AM Division (Estate Management) officers and cleaning contractors are given in [Appendix 2](#).

6. The following actions are to be taken to activate the contingency site:

SATCC

- Activate SAA Backup System. (This is a degraded mode of service as capacity will be reduced. Delays would increase and flight diversions may take place especially during the peak hours.)

Changi Tower

- Activate standby towers at Terminals 2 and 3.

Seletar Tower

- Close Seletar Tower for three hours (as there is no standby facility for Seletar).

Changi AIS

- One AIS staff will operate from the AIS equipment room at T1. One staff will be deployed to SATCC to key departure flight plans into the LORADS II system.

7. If ATE contractors currently based at SATCC LORADS II building need to be vacated for decontamination in this scenario, the following actions are to be taken:

Fault Reporting Centre (FRC)

- Infotel will divert all calls at FRC to their main office at Tai Seng Drive which will take over as a call centre for the duration of the decontamination.
- Staff in the current shift will don masks and gloves and proceed to evacuate to a designated room.
- A new shift of FRC staff will be deployed after the decontamination is completed.

Aeronautical Fixed Telecommunications Network (AFTN) Centre

- Designated AFTN operator will don mask and gloves to continue AFTN operations until the Emergency AFTN operations centre is set up at LSR building.
- Once set up, the existing AFTN Centre will be evacuated.
- A new shift of AFTN staff will be deployed after the decontamination is completed.

ST Offices

- All ST staff will be evacuated to contingency office (Changi Airport Terminal 2, Room No. 037-024) to be on standby for corrective maintenance.
- A new shift of ST staff will be deployed after the decontamination is completed.

NCS Offices

- All NCS staff will be evacuated to contingency office (Changi Airport Terminal 2, Room No. 047-023) to be on standby for corrective maintenance.
- A new shift of NCS staff will be deployed after the decontamination is completed.

HEALTH DECLARATION AND TEMPERATURE SCREENING PROCEDURES AT OPERATIONAL UNITS

A. Health declaration and temperature check for operational staff

- 1 Health check station is established at each operational unit, away from the operations room².
 - (a) Staff are required to fill in a **Health Declaration Form** (see **Annex A**) and measure their body temperature when reporting for duty.
 - (b) If a staff has a temperature of 37.5⁰ C and above, he shall rest and retake his temperature after 15 minutes. For greater accuracy, the second temperature measurement should be taken with a mouth thermometer instead of the ear thermometer.
 - (c) If the staff has answered “No” to all the questions in the Health Declaration Form, he shall submit the completed form to the WM / supervisor. The WM / supervisor will sign the form to acknowledge. In the case of Changi and Seletar Towers, staff are required to display the Health Declaration Form before the security surveillance camera before the WM will grant him entry into the tower cabin. In the case of FSOs and OSOs at SATCC, their Health Declaration Forms should be submitted to the FSO Watch Supervisor.
 - (d) Prior to the end of the shift, staff shall take another temperature check. This needs to be completed before coming into contact with the incoming shift. Therefore, staff shall take their temperature before taking over the last duty slot at the control position, or not later than 30 minutes prior to the end of shift. (Note: For Alert ORANGE and above, additional temperature checks will be required in the midst of the shift.)
 - (e) After taking the last temperature check, staff shall retrieve their Health Declaration Form and complete it as appropriate and submit to the WM / supervisor for his signature. In the case of FSOs and OSOs at SATCC, the FSO Watch Supervisor is to submit their completed forms Health Declaration Forms to the SATCC WM prior to the end of the shift.
 - (f) The outgoing WM / supervisor shall file the completed Health Declaration Forms.

- 2 If a staff answers “Yes” to any of the questions in the Health Declaration Form, the following actions will be initiated:

² The locations of the health check stations are as follows: (a) outside the SATCC operations room; (b) at the base of Changi Tower; (c) outside Seletar Tower cabin; and (d) at the entrance of the Changi AIS office.

- (a) He shall not be allowed to enter the operations room / tower cabin.
- (b) He shall call the WM / Supervisor and provide the necessary details.
- (c) WM / Supervisor will:
 - (i) Ask staff who has been to -affected areas to go on self-quarantine for ten days using his annual leave; or
 - (ii) Ask staff who has been in contact with patient to see a doctor³ immediately (and he will most likely be quarantined at home under the Infectious Disease Act); or
 - (iii) Ask staff who has a fever (but did not go to a -affected area nor contacted any patient) to see a doctor.
 - (iv) Ask staff who has a fever (and had been to a -affected area or contact with patient) to don a surgical mask and proceed to a designated isolation room⁴, while the WM / Supervisor calls for a TTSH⁵ ambulance (Tel: 993).
- (d) The staff shall inform the WM / supervisor on the outcome of his visit to the doctor / TTSH to close the loop. If it is confirmed that he had, WM / supervisor will hold back the current watch while cleaning and disinfection take place (see para 4 below). The next watch will only be allowed to take over after cleaning and disinfection have been completed, and at least three hours have passed since the suspected case left the operations area.
- (e) If the medical doctor / TTSH confirms that the staff does not have but is unwell for work, he is to ask for a medical certificate to be issued to him, and to rest at home. On the other hand, if he is not sick, he is to ask for the doctor's memo to certify him fit for work and return to work. For the purpose of medical claim, staff that is fit for work shall fill in a **CAAS Temperature Screening Declaration and Claim Form (Annex B)** and send it back to HR Division together with his doctor's memo.

3 If staff already on duty but becomes unwell with high temperature or symptoms, the following actions will be taken:

³ For staff at Changi Airport, they should proceed to the Raffles Medical Group clinic at the basement of Terminal 2.

⁴ The designated isolation rooms are as follows: (a) SATCC – (container office); (b) Changi Tower – meeting room on ground floor; (c) Seletar Tower – empty room at toilet level; (d) Changi AIS – printing room no 041-13-02.

⁵ For SATCC, WM to notify CS/DCS/SATCPO(BCP/Security), who will inform the CISCO Security guard at the guardroom to direct the ambulance to SATCC LORADS II building. For Changi Tower, the designated ambulance pick-up point is at Car Park A. For Changi AIS, the designated ambulance pick-up point is at the basement level of Terminal 1. For Seletar Tower, WM to notify Head (Seletar AM) who will inform AETOS Security to escort the ambulance to the tower.

- (a) The WM / supervisor will ask him to reconfirm whether he had recently been to -affected areas or contacted patients. If answer is “no”, he will be asked to see a doctor. If “yes” (eg he suddenly realises or admits that he had been in contact with patients), he will be deemed a suspect case. WM / supervisor will call for a TTSH ambulance (Tel: 993) to send him to TTSH. In the meantime, he will be asked to don a surgical mask, and to proceed to a designated isolation room. He will not be allowed to mingle with other staff.
- (b) The staff shall inform the WM / supervisor on the outcome of his visit to the doctor / TTSH to close the loop. If it is confirmed that he has, WM / supervisor shall hold back the current watch for at least three hours since the infected staff had left, before the next watch takes over duty.

4 WM / supervisor is to activate the cleaning contactor (see contact list at [Appendix 2](#)) to clean the work area.

5 WM / supervisor may have to recall staff to cover any shortfall of staff.

6 WM / supervisor shall keep the Unit Chief informed. The Unit Chief shall keep Division Head, Section Head and HR Division (Attn: 1SHRM, at 6541 2610) informed.

B. Health declaration and temperature checks for office hours staff

7 Office-hour staff at ATS HQ, SATCC, Changi Tower, Seletar Tower and AIS shall monitor their own temperature twice daily (once in the morning before the start of work and once in the afternoon), and fill in the Temperature Log as shown in [Annex C](#).

8 Staff should display their Temperature Log prominently to facilitate checking by their supervisor.

9 If a staff has a temperature of 37.5⁰ C and above after two separate readings that were at least 15 minutes apart, the following actions should be taken:

- (a) Staff shall inform his supervisor.
- (b) The supervisor will ask him to reconfirm whether he had recently been to -affected areas or contacted patients. If answer is “no”, he will be asked to see a doctor. If “yes” (eg he suddenly realises or admits that he had been in contact with patients), or he shows other symptoms (eg coughing, shortness of breath), he will be deemed a suspect case. The supervisor will call for a TTSH ambulance (Tel: 993) to send him to TTSH. In the meantime, he will be asked to don a surgical mask, and to proceed to a designated isolation room. He will not be allowed to mingle with other staff.
- (c) The staff shall inform the supervisor on the outcome of his visit to the doctor / TTSH to close the loop.

- (d) If the medical doctor / TTSH confirms that he does not have but is unwell for work, he is to ask for a medical certificate to be issued to him, and to rest at home. On the other hand, if he is not sick, he is to ask for the doctor's memo to certify him fit for work and return to work. For the purpose of medical claim, staff that is fit for work shall fill in a **CAAS Temperature Screening Declaration and Claim Form (Annex B)** and send it back to HR Division together with his doctor's memo.

10 As an added precaution and for peace of mind of the other staff, the supervisor is to activate the cleaning contactor (see contact list at [Appendix 2](#)) to clean the work area.

C. Health declaration and temperature checks for visitors

11 Visitors to operational units shall be required to fill in the Health Declaration Form available at the health check points and submit their forms to the WM / supervisor or General Office, whichever is applicable.

12 Any visitor who answered "Yes" to any of the questions in the Health Declaration Form shall not be allowed into the operations room / tower cabin.

13 In the case of ATS Division HQ, external visitors have to fill in a Health Declaration Form and have their temperature taken at the CAAS Reception Counter before they can exchange for a pass to enter the restricted CAAS offices. They will also be issued with coloured stickers (with dates) to be stuck on their clothing. CAAS staff are to ensure that their visitors bear the coloured stickers.

D. Health declaration and temperature checks for contractors

14 All contractors operating at ATC units are required to implement the health declaration and temperature checks procedures similar to that for CAAS ATS staff (see [Part A](#) above). At the start of their duty, they shall sign the Health Declaration Form (similar to the one at [Annex A](#)) and to take their body temperature at their respective offices.

15 The contractor supervisors shall check the Health Declaration Forms and ensure their staff had not answered "Yes" to any of the questions in the Health Declaration Form, and do not exhibit symptoms or appear unwell. In addition, the following procedures specific for ATC units shall be adhered to:

SATCC

- ST, NCS, Infotel, Indeco, ISS, CISCO Security, MPA and the canteen operator are required to submit their health declarations to the SATCC General Office.

Changi Tower

- All contractors are to carry the duly completed Health Declaration Form with them at all times. This is to be displayed to the security surveillance camera when requesting WM for permission to enter the tower cabin.

Seletar Tower

- Supervisor of the cleaning contractor shall fax the duly completed Health Declaration Form to Seletar tower cabin.
- Alternatively, contractors may carry the duly completed Health Declaration Form with them at all times. This is to be displayed to the security surveillance camera when requesting WM for permission to enter the tower cabin.

16 All contractors shall take their temperature again before the end of their shift, prior to mingling with the incoming shift, and record it in the Health Declaration Form.

17 The contractor supervisors shall ensure that any staff who is a suspected / confirmed case (eg having fever of above 37.5⁰ C, showing symptoms and / or have recent close contact with patient) don a surgical mask and be isolated. In the case of ATE maintenance contractors at SATCC, the isolation room is at a container office, which will be acquired for such purpose. The contractor supervisors shall arrange for TTSH ambulance service (Tel: 993) to send the suspected / confirmed case to TTSH, and keep the respective Unit Head informed.

Annex A to Appendix 1

**SATCC / CHANGI TOWER / SELETAR TOWER / AIS
HEALTH DECLARATION FORM**

Date: _____

Name: _____

REPORTING FOR DUTY

Do you have a fever (temperature of above 37.5° C)? *YES / NO

Please indicate your body temperature. Time: _____ Temp: _____ ° C

If your initial temperature is high and you need to take subsequent readings, please indicate your temperature below:

Time: _____ Temp: _____ ° C

Time: _____ Temp: _____ ° C

Time: _____ Temp: _____ ° C

Do you have respiratory symptoms including cough, shortness of breath or breathing difficulty? *YES / NO

Have you travelled to FLU-affected areas in the preceding 10 days? If YES, please specify: _____ *YES / NO

Have you been in contact with anyone affected by FLU? *YES / NO

Signature / Time

WM / Supervisor's signature / Time

This declaration is necessary to prevent the outbreak at the workplace. If you answered 'No' to all the questions above, you can enter Operations Room / Tower Cabin and submit this declaration form to the Watch Manager / Supervisor. **If your answer to any of the questions is YES, do not enter Operations Room / Tower Cabin. You are to contact the Watch Manager / Supervisor via phone for further instructions.**

PRIOR TO END OF DUTY (Not applicable to visitors)

As an added precaution and to reduce the likelihood of infecting the incoming shift staff, the outgoing shift staff shall take their body temperature using the thermometer placed with the Watch Manager / Supervisor or their personal thermometer to check if they have a fever (above 37.5 ° C) prior to contact with any incoming shift staff.

Do you have a fever (temperature of above 37.5° C)? *YES / NO

Please indicate your body temperature. Time: _____ Temp: _____ ° C

Signature / Time

WM / Supervisor's signature / Time

* Please circle where applicable.

Annex B to Appendix 1

To: HRE

CAAS TEMPERATURE SCREENING DECLARATION AND CLAIM FORM

Employee Name:

Clinic Consulted:

NRIC Number:

Date of Consultation:

Division:

Contact Number:

Declaration by Staff

I, _____, NRIC No. _____, do hereby declare that I have sought medical consultation at one of the clinics on CAAS' approved panel of clinics after speaking with my supervisor as my temperature as taken on _____ had exceeded 37.5⁰ Celsius at 2 separate temperature readings that were at least 15 minutes apart. I was subsequently found to be fit to work after consultation with a doctor. I hereby attach the required doctor's statement.

Signature/Date

Verification by Supervisor

Signature/Date

Name/Designation

- (b) FMC will contact Crisis Management Centre which will activate Chye Thiam, Mr Kelvin Boo at HP: 90288717 and in consultation with CAIS / DC(AIS) assess the extent of cleaning, i.e.
- localised cleaning of the affected areas or
 - the entire Changi AIS office.

CONTACT LIST OF CONTRACTORS AND OTHER AGENCIES AT OPERATIONAL UNITS

SATCC

Company	Function	Contact Person	Contact No.	CAAS Contact	Contact No.
MPA	Sembawang Control Cabin	Capt Lim Cheng Hai	Office: 63252453 HP: 96702428	Raymond Seah	Office: 65412665 Pg: 94938493
RSAF	203 SQN	MAJ Lim Chai	Office: 65402302 HP: 98353104	Raymond Seah	Office: 65412665 Pg: 94938493
Cisco Security	Security	ASP Ismail	Office: 65080720 HP:96262606	Raymond Seah	Office: 65412665 Pg: 94938493
Canteen	Canteen Operator	Rahimah	HP: 97105422	Raymond Seah	Office: 65412665 Pg: 94938493
NCS	Lorads II maintenance	Chu Yew Chung	Office: 65411891 HP: 96164633	Yeo Cheng Nam	Office:65412442 Pg: 98010078
		Ong Pang Chuan	Office: 65411835 PG: 95751644	Melisa Wee	Office: 65412458 Pg: 92919572
				Ho Wee Sin	Office: 65411930 HP: 96340615
ST	IVCS maintenance	William Yap	Office: 65456855 HP: 96391997	Chua Kim Hee	Office: 65412989 Pg: 92938266
		Chin Swee Pheng	Office: 65456855 HP: 91094277		
	ASR2	Sim Leong Toh	Office: 68494488 HP: 97516775	Yeo Cheng Nam	Office:65412442 Pg: 98010078
		Awyong Tian Seng	Office: 65462097 HP: 93631608	Ng Mei Chin	Office:65412402 Pg: 92931539

Company	Function	Contact Person	Contact No.	CAAS Contact	Contact No.
INFOTEL	Fault Reporting Centre manning	Wilson Koh	Office: 65807793 HP: 90112572	Victor Lee	Office:65412409 Pg: 98010067
		Thomas Yiap	Office: 65456909 HP: 97967452		
Indeco (IEPL)	M & E services	Honorato	Office: 65412699 Pg: 96748362	Seow Yin Khoi	Office:67864131 Pg: 95782734
Carrier Singapore Pte Ltd	Indeco subcontractor for air-con servicing	Francis Lim	Office: 64100296 Pg: 92221390		
Sigma Elevator Singapore Pte Ltd	Indeco subcontractor for lift servicing	Zairi	Office: 63237361		
		Anthony Tan	Office: 63237361 Pg: 98025356		
CST Cleaning & Trading Pte Ltd	Cleaning services	Mike Lee	Office: 66652213 HP: 97520068	Ong Wee Heng	Office: 65412248 HP: 94372248

Changi Tower

Company	Function	Contact Person	Contact No.	CAAS Contact	Contact No.
NCS	Lorads II maintenance	Chu Yew Chung	Office: 65411891 HP: 96164633	Yeo Cheng Nam	Office:65412442 Pg: 98010078
				Melisa Wee	Office: 65412458 Pg: 92919572
				Ho Wee Sin	Office: 65411930 HP: 96340615
ST	CACS	Jason Lee	Office: 65467975 HP: 97692641	Chua Kim Hee	Office: 65412989 Pg: 92938266

Company	Function	Contact Person	Contact No.	CAAS Contact	Contact No.
	ASDE	Sim Leong Toh	Office: 68494488 HP: 97516775	Yeo Cheng Nam	Office:65412442 Pg: 98010078
		Awyong Tian Seng	Office: 65462097 HP: 93631608	Ng Mei Chin	Office:65412402 Pg: 92931539
	Airfield Lighting Control & Monitoring system	Adam Bin Ahmad	HP: 91875600	Rahim Majid	Office: 65412149 HP: 91477054
ATT Systems (S) Pte Ltd	Crash Alarm / Crash Display System	Ang Joo Hin	HP: 96940566		
AMEC Group Singapore Pte Ltd	M & E services	Kaiser Ng	Office: 65462215 HP: 98504149	Mak Kah Pok	Office: 65412695 HP: 81252788
Hitachi	Maintenance of Lifts	Tay Kah Cheng	Office: 65420022 Pg: 91771452		
		Lee Kok Wee Alfred	Office: 64161872 HP: 96870628		
Chye Thiam Maintenance Pte Ltd	Cleaning services	Clarence Seah Chong Ming	HP: 97195296	Ng Poo Kwee	Office: 65412113 HP: 97186866

Seletar Tower

Company	Function	Contact Person	Contact No.	CAAS Contact	Contact No.
NCS	VHF Radio	Albert Tan	Office: 64812328 Pg: 95047594	Victor Lee	Office: 65412409 Pg: 98010067
		Soon Hong Cheng	Office: 64812328 Home: 67822611	Dennis Chan	Office: 65412895 Pg: 94969507

Company	Function	Contact Person	Contact No.	CAAS Contact	Contact No.
	Seletar Wind	Chan Siew Yuen	HP: 96891407	Lo Weng Kee	Office: 65412445 Pg: 98010076
				Tan Ho Seng	Office: 65412979 HP: 81279332
Indeco (IEPL)	M & E services	Ng Chong Son	Office: 64823249 Pg: 92918059	Khairil Anuar	Office: 64812243 Pg: 98014227
Chye Thiam	Cleaning services	Eddy	HP: 96171504	Ignatius Ng	Office: 64810017 Hp: 96606788

Changi AIS

Company	Function	Contact Person	Contact No.	CAAS Contact	Contact No.
ST	AAIS	Yeo Lin Peng	HP: 90883147	Melisa Wee	Office: 65412458 Pg: 92919572
		Tiffany Yow	HP: 97888987		
NCS	Lorads II maintenance	Chu Yew Chung	Office: 65411891 HP: 96164633	Melisa Wee	Office: 65412458 Pg: 92919572
	FCS maintenance		Office: 65411798	Ho Wee Sin	Office: 65411930 HP: 96340615
	AMS maintenance	Yeo Hock Lye	Office: 65411808 HP: 97872122	Victor Lee	Office: 65412409 Pg: 98010067
Chye Thiam Maintenance Pte Ltd (for Changi AIS Office)	Cleaning services	Kelvin Boo	Office: 65450945 HP: 90288717		
		Kerene Lim	Office: 65450945 HP: 94504608		

**POOL OF ATC /AIS STAFF THAT CAN BE DRAWN UPON FOR CONTINGENCY
SHIFT DEPLOYMENT**

(As at 10 April 2013)

ATC

HQ (Office Hours)

1. Kuah Kong Beng (Area Stream)
2. Rosly Saad (Approach Stream)
3. Victor Tan (Approach Stream)
4. Loke Chee Yong (Area Stream)
5. Tan Yean Guan (Area Stream)
6. Peter Rabot (Approach Stream)
7. Hermizan Jumari (Area Stream)
8. Harrison Lim (Area Stream)
9. Michael Shee (Area Stream)
10. Ying Weng Kit (Area Stream)
11. Valerie Sim (Approach Stream)
12. Khartirvelu (Area Stream)
13. Kwek Chin Lin (Approach Stream)
14. Joe Chua (Area Stream)

SAA (Office Hours)

1. Simon Koh (Approach Stream)
2. Chan Hwee Tuan (Approach Stream)
3. Catherine Ho (Approach Stream)
4. Mohd Aljuhari (Approach Stream)
5. Thomas Yeo (Approach Stream)
6. Winston Au (Area Stream)
7. Goh Seng Peng (Area Stream)
8. Lim Lay See (Area Stream)
9. Agnes Chua (Area Stream)
10. Johnson Oh (Approach Stream)
11. Chow Chee Kiang (Approach Stream)

Standards & Safety Unit (Office Hours)

1. Tay Siah Heng (Area Stream)
2. Ngui Le Chen (Approach Stream)
3. Thomas Teh (Area Stream)
4. Lim Seng Bock (Approach Stream)
5. Balbir Singh (Area Stream)

SATCC (Office Hours)

- | | | |
|---|---------------|-------------------|
| 1 | Andrew Wee | (Approach Stream) |
| 2 | Andrew Bheem | (Approach Stream) |
| 3 | Edmund Heng | (Area Stream) |
| 4 | Tai Kit | (Area Stream) |
| 5 | Tay Chin Heng | (Area Stream) |

Seletar Tower

- | | |
|---|--------------|
| 1 | Vincent Hwa |
| 2 | Naresh Kumar |

AIS

(On Office Hours)

1. Wong Liang Fen
2. Charn Kaur
3. Anne Lau
4. Veronica Ong

**SATCC MANPOWER DEPLOYMENT
INFLUENZA PANDEMIC BCP**

SATCC AREA CONTROL MINIMUM MANNING REQUIREMENT

NORMAL OPERATIONS

All control positions open

PSN	C5A	C5P	C4P	C4R	C1R	C1P	C2R	C2P	C3R	C3P	C6R	C6P
Duty	1	1	1	1	1	1	1	1	1	1	1	1
Relief	1				1				1			

Watch Manager (WM) = 1

Control Positions = 12

ATCOs required = 15

SCENARIO A

Staff available = 70% - 80%

Air traffic volume = 100%

All control positions open

PSN	C5A	C5P	C4P	C4R	C1R	C1P	C2R	C2P	C3R	C3P	C6R	C6P
Duty	1	1	1	1	1	1	1	1	1	1	1	1
Relief	1				1				1			

- Without reduction in traffic volume, all control positions will need to be manned.
- As 1 WM and 15 ATCOs are required per shift, there is a shortage of 5 ATCOs.
- To fill the shortage, ATCOs from SAA, Standards Unit and HQ will be rostered.
- All leaves will be curtailed or cancelled.
- All overseas meetings will be curtailed or cancelled.
- If necessary, ATC courses may be suspended and ATCOs attending the courses will be deployed to operational duties.

SCENARIO B

Staff available = 70% - 80%

Air traffic volume = 70%

4 control positions collapsed

PSN	C5A	C5P	C4P	C4R	C1R	C1P	C2R	C2P	C3R	C3P	C6R	C6P
Duty	1	1		1	1		1		1	1		1
Relief		1			1					1		

- With reduction in traffic volume to 70%, some control positions can be collapsed.
- 1 WM and 11 ATCOs are required per shift.
- ATCOs from SAA, Standards Unit and HQ will be on standby.
- All leaves will be curtailed or cancelled.
- All overseas meetings will be curtailed or cancelled.
- If necessary, ATC courses may be suspended and ATCOs attending the courses will be deployed to operational duties.

SCENARIO C

Staff available = 50%

Air traffic volume = 50%

8 control positions collapsed

PSN	C5A	C5P	C4P	C4R	C1R	C1P	C2R	C2P	C3R	C3P	C6R	C6P
Duty		2			1		1			2		
Relief		1			1					1		

- With reduction in traffic volume to 50%, more control positions can be collapsed.
- As 1 WM and 9 ATCOs are required per shift, there is a shortage of 2 ATCOs.
- To fill the shortage, ATCOs from SAA, Standards Unit and HQ will be rostered.
- All leaves will be curtailed or cancelled.
- All overseas meetings will be curtailed or cancelled.
- If necessary, ATC courses may be suspended and ATCOs attending the courses will be deployed to operational duties.

SATCC APPROACH CONTROL MINIMUM MANNING REQUIREMENT

NORMAL OPERATIONS

All control positions open

Position	FLOW	APPROACH	COORDINATOR	ARRIVAL
Duty ATCO	1	1	1	1
Relief ATCO	1		1	

Assistant Watch Manager (AWM) = 1

Control Positions = 4

ATCOs required = 6

(Additional 4 ATCOs for Runway 3 operations.)

SCENARIO A

Staff available = 70% - 80%

Air traffic volume = 100%

All control positions open

Position	FLOW	APPROACH	COORDINATOR	ARRIVAL
Duty ATCO	1	1	1	1
Relief ATCO	1		1	

- Without reduction in traffic volume, all control positions will need to be manned.
- As 1 AWM and 6 ATCOs are required per shift, there is a shortage of 2 ATCOs.
- To fill the shortage, ATCOs from SAA, Standards Unit and HQ will be rostered.
- All leaves will be curtailed or cancelled.
- All overseas meetings will be curtailed or cancelled.

If necessary, ATC courses may be suspended and ATCOs attending the courses will be deployed to operational duties.

SCENARIO B

Staff available = 70% - 80%

Air traffic volume = 70%

1 control position collapsed

Position	FLOW	APPROACH	COORDINATOR	ARRIVAL
Duty ATCO	1		1	1
Relief ATCO	1			

- With reduction in traffic volume to 70%, one control position can be collapsed.
- 1 WM and 4 ATCOs are required per shift.
- ATCOs from SAA, Standards Unit and HQ will be on standby.
- All leaves will be curtailed or cancelled.
- All overseas meetings will be curtailed or cancelled.
- If necessary, ATC courses may be suspended and ATCOs attending the courses will be deployed to operational duties.
- (Runway 3 operations reduced to dependent mode with 2 ATCOs.)

SCENARIO C

Staff available = 50%

Air traffic volume = 50%

1 control position collapsed

Position	FLOW	APPROACH	COORDINATOR	ARRIVAL
Duty ATCO	1		1	1
Relief ATCO	1			

- Same as scenario B.
- With reduction in traffic volume to 50%, one control position can be collapsed.
- 1 WM and 4 ATCOs are required per shift.
- ATCOs from SAA, Standards Unit and HQ will be on standby.
- All leaves will be curtailed or cancelled.
- All overseas meetings will be curtailed or cancelled.
- If necessary, ATC courses may be suspended and ATCOs attending the courses will be deployed to operational duties.
- (Runway 3 operations reduced to dependent mode with 2 ATCOs.)

**CHANGI TOWER MANPOWER DEPLOYMENT
INFLUENZA PANDEMIC BCP**

CHANGI TOWER MINIMUM MANNING REQUIREMENT

NORMAL OPERATIONS

All control positions open

Position	RWY1	RWY2	GMC1	GMC2	GMP
Duty	1	1	1	1	1
Relief (0800-2400)	1		1		

Watch Manager (WM) = 1

Control Positions = 5

ATCOs required = 7 (From 2400 to 0800 hrs only 6 ATCOs are required)

SCENARIO A

Staff available = 80%

Air traffic volume = 100%

All control positions open

Position	RWY1	RWY2	GMC1	GMC2	GMP
Duty	1	1	1	1	1
Relief (0800-2400)	1		1		

- Without reduction in traffic volume, all control positions will need to be manned.
- As 1 WM and 7 ATCOs are required per shift, there is a shortage of 2 ATCOs.
- To fill the shortage, Changi Tower rated ATCOs from SAA, Standards Unit and HQ will be rostered.
- All leaves will be curtailed or cancelled.
- All overseas meetings will be curtailed or cancelled.
- If necessary, ATC courses may be suspended and ATCOs attending the courses will be deployed to operational duties.

SCENARIO B

Staff available = 50%

Air traffic volume = 100%

- **GMC2 and GMP will be collapsed into 1 control position when traffic permits**
- **Relief ATCO reduced to 1**

Position	RWY1	RWY2	GMC1	GMC2	GMP
Duty	1	1	1	1	1
Relief (0800-2400)	1				

- Changi Tower rated ATCOs from SAA, Standards Unit and HQ will be rostered.
- All leaves will be curtailed or cancelled.
- All overseas meetings will be curtailed or cancelled.
- If necessary, ATC courses may be suspended and ATCOs attending the courses will be deployed to operational duties.

SCENARIO C

Staff available = 50%

Air traffic volume = 50%

- **GMC2 and GMP will be collapsed into 1 control position when traffic permits**
- **Relief ATCO reduced to 1**
- **RWC1 control position will be closed**

Position	RWY1	RWY2	GMC1	GMC2	GMP
Duty	0	1	1	1	1
Relief (0800-2400)	1				

- Changi Tower rated ATCOs from SAA, Standards Unit and HQ will be rostered.
- All leaves will be curtailed or cancelled.
- All overseas meetings will be curtailed or cancelled.
- If necessary, ATC courses may be suspended and ATCOs attending the courses will be deployed to operational duties.

ATS' ESSENTIAL FIRMS - COORDINATION / COMMUNICATIONS PLAN

1 ATS Division has the following essential firms (EFs) providing ATC systems maintenance services:

- a) Singapore Technologies Electronics Ltd
- b) NCS Communication Engineering Pte Ltd
- c) Infotel Technologies (Pte) Ltd

2 To ensure that the EFs make the necessary preparations to ensure continued provision of their services to ATS during an influenza pandemic, the EFs have been asked to submit their business continuity plans to ATS. The BCPs of the three EFs are at [Annex 1](#), [Annex 2](#) and [Annex 3](#).

3 2E(C) is the ATS coordinator with ATS' EFs on matters relating to influenza pandemic and shall activate ATS' EFs in the event of an influenza pandemic as stipulated in the ATS Division Activation Plan. The contact persons for the EFs are as follows:

- a) Singapore Technologies Electronics Ltd
 - 1) Mr Soh Chee Hiang
Tel:6413 1910
Email: sohch@stee.stengg.com
 - 2) Mr Sim Leong Toh
Tel: 6849 4488
Email: simlt@stee.stengg.com
- b) NCS Communication Engineering Pte Ltd
 - 1) Mr Liau Lock Kee
Tel: 6541 1766
HP: 9665 2377
Email: llke@ncs.com.sg
 - 2) Mr Wong Liang Chang
Tel: 6541 1666
HP: 9764 6716
Email: wlcg@ncs.com.sg
- c) Infotel Technologies (Pte) Ltd
 - 1) Mr. James Han
Tel : 6580 7791
HP : 9817 1821
Email: jameshan@infotel.com.sg

- 2) Ms Bok Lai Chan
Tel: 6580 7812
HP: 9698 8132
Email: boklc@infotel.com.sg

**NCS COMMUNICATIONS
ENGINEERING PTE. LTD.**

INFLUENZA PANDEMIC

BUSINESS CONTINUITY PLAN

CONTENTS

Part 1: Situation, Key Considerations and Planning Assumptions

Part 2: Objective

Part 3: Execution

Part 4: Command & Control

PART 1

SITUATION, KEY CONSIDERATIONS AND PLANNING ASSUMPTIONS

- 1 The Business Continuity Plan (BCP) outlines the principles how NCS Communications Engineering (NCS CE) will operate during a flu pandemic.
- 2 NCS CE operating in the airports would develop their respective SOPs to ensure continuity of their respective businesses during an outbreak of the virus.

Key Considerations

- 3 Difficult to differentiate from common flu: The symptoms of a novel flu virus range from typical influenza flu symptoms such as fever, cough, sore throats and muscle ache to eye infections, pneumonia and shortness of breath. This makes it difficult for staff to differentiate it from the common flu.
- 4 Short warning period: The warning period will be relatively short should a novel flu virus emerge that is capable of efficient human transmission. The virus is likely to spread quickly resulting in high morbidity and/ or mortality. It may take several days to confirm that the novel virus is a new flu strain. The infection could be present in Singapore through imported human cases within days to weeks after it emerges in another part of the world.
- 5 Spread in waves: A pandemic usually spreads in two or more waves, either in the same year or in successive influenza seasons. The second wave may occur within 3 to 9 months of the initial outbreak and may cause more serious illness and deaths than the first. The length of each wave is estimated to be up to 6 weeks.
- 6 Supply of vaccines: There will not be any vaccine initially. The development of the vaccine will take at least 4 to 6 months. When the vaccines are developed, the supply would be limited initially.

Planning Assumptions

- 7 Spread of virus: The infection of one staff in any essential functional area would immobilize the whole group. To prevent a cessation in the provision of essential services, there needs to be a separation of staff to ensure minimal contact. In addition, back-up or alternate officers have to be identified should the usual staff are not able to function.
- 8 Strain on frontline resources: The flu pandemic will severely strain the frontline resources such as increase in demand for services, staff absenteeism, low staff morale, etc.
- 9 Provision of vaccines: The Ministry of Health would be providing vaccines when available. The Ministry will be directing and coordinating mass vaccination exercise.

PART 2

OBJECTIVE

- 1 The objective of NCS CE is to ensure uninterrupted delivery of essential services to airlines and passengers in a flu pandemic. This would be achieved through support by partner firms.

PART 3

EXECUTION

- 1 NCS CE will continue to operate as close to normal operations as possible. This means that NCS CE will work with their partners to maintain normal airport operations wherever possible and where manpower and resources permit.

Tasks

- 2 NCS CE provides Consultancy and Facilities Management services to CAAS. Other services are provided by organizations contracted by NCS CE. These organizations are listed as below:

Changi Airport

No	Service	Organization
1	NCS corporate services	NCS Pte. Ltd
2	General Office cleaning services	Hock Services (Pte) Ltd
3	Safety Consultancy Services	Bond International Consultants Pte Ltd
3	PABX maintenance services	Radiance Communications
4	Office Card Access services	ELID Technology International Pte Ltd

Seletar Airport

No	Service	Organization
1	NA	

- 3 NCS CE and the partner firms are to develop their individual SOPs to ensure business continuity based on the guidelines outlined in this BCP.

Elaboration of Plans

- 4 Preventive Measures (Individual level)
 - a) In the event of an outbreak, all staff would be constantly reminded to monitor their health and watch out for flu-like symptoms. They would be advised to adopt good hygiene practices to minimize the risk of being infected with the virus. This should be done through various internal communication channels. Those with flu-like symptoms would be asked to see a doctor immediately.
 - b) Advisory would also be issued to discourage staff from traveling to affected areas. Application for leave to such areas would only be approved based on need-to-basis. The staff's supervisor would monitor the status of the staff closely and ensure that he/ she had undergone a medical checkup before reporting back to work.
 - c) Any staff who visited a doctor for flu-like symptoms is required to inform his/ her supervisor of the consultation and report the outcome as soon as possible.
 - d) If the doctors assess that the staff has not contracted the virus, the staff is to take the doctor's advice and remain at home until he/ she is well. However, if the doctors assess that the staff is suspected of contracting the virus, he/ she would be quarantined at home.
 - d) All staff are to cooperate with the relevant authorities who may carry out contact tracing of the infected staff.

5 Preventive Measures (Organization level)

- a) NCS CE would organize series of briefings by NCS corporate and /or medical clinic operator for the airport staff. These briefings are intended to dispel any myths or misconceptions held by the staff in general, and to assuage their fears about being exposed to the flu pandemic due to them working in the airport. Professional advice would be given during these briefings.
- b) NCS CE would also organize regular briefings with partner firms such as contractors. These briefings are intended to ensure that the partner firms are well-informed of the situation and have taken all necessary precautions, enabling the airport to maintain appropriate manpower levels to maintain normal operations.
- c) An institutional vaccination center may be prepared at the Airports. When activated, the center would vaccinate the first responders at Changi and Seletar Airports.
- d) NCS CE and the partner firms would introduce alternate team deployment to minimize cross-contamination and stockpile relevant personal protective equipment. They would also launch internal staff communication programs to manage any physical and mental fatigue which may set in due to increase in workload and loss or suffering of loved ones.
- e) Respective organizations would plan for continuity of respective operations and corporate activities. As far as possible, attendance at external meetings should be kept on a need-to-basis and communication should be via telephone, fax, email or tele-conferencing.

PART 4

COMMAND AND CONTROL

- 1 NCS CE would retain its structure in the event of an outbreak. Designated alternates to key officers would take over the management if the principle officers are unable to carry out their duties due to the infection of the virus.
- 2 The partner firms at Changi Airport and Seletar Airport would also maintain their structures with designated alternates to take over where necessary.
- 3 The alternate key appointment holders would be identified in the early stages of the disease by the respective Divisions / Human Resource Departments of the respective organizations.

ST Electronics Ltd
(Airport Maintenance Operation)

INFLUENZA PANDEMIC

BUSINESS CONTINUITY PLAN

CONTENTS

Part 1: Situation, Key Considerations and Planning Assumptions

Part 2: Objective

Part 3: Execution

Part 4: Command & Control

PART 1

SITUATION, KEY CONSIDERATIONS AND PLANNING ASSUMPTIONS

- 1 The Business Continuity Plan (BCP) outlines the principles how ST Electronics' Airport Maintenance Operation will operate during a flu pandemic.
- 2 ST Electronics operating in the airports would develop its own policy / SOPs to ensure continuity of their respective businesses during an outbreak of the virus. The details of this policy are already stipulated in the 'ST Electronics Bird Flu Prevention Policy'.

Key Considerations

- 3 Difficult to differentiate from common flu: The symptoms of a novel flu virus range from typical influenza flu symptoms such as fever, cough, sore throats and muscle ache to eye infections, pneumonia and shortness of breath. This makes it difficult for staff to differentiate it from the common flu.
- 4 Short warning period: The warning period will be relatively short should a novel flu virus emerge that is capable of efficient human transmission. The virus is likely to spread quickly resulting in high morbidity and/ or mortality. It may take several days to confirm that the novel virus is a new flu strain. The infection could be present in Singapore through imported human cases within days to weeks after it emerges in another part of the world.
- 5 Spread in waves: A pandemic usually spreads in two or more waves, either in the same year or in successive influenza seasons. The second wave may occur within 3 to 9 months of the initial outbreak and may cause more serious illness and deaths than the first. The length of each wave is estimated to be up to 6 weeks.
- 6 Supply of vaccines: There will not be any vaccine initially. The development of the vaccine will take at least 4 to 6 months. When the vaccines are developed, the supply would be limited initially.

Planning Assumptions

- 7 Spread of virus: The infection of one staff in any essential functional area would immobilize the whole group. To prevent a cessation in the provision of essential services, there needs to be a separation of staff to ensure minimal contact. In addition, back-up or alternate officers have to be identified should the usual staff are not able to function.
- 8 Strain on frontline resources: The flu pandemic will severely strain the frontline resources such as increase in demand for services, staff absenteeism, low staff morale, etc.
- 9 Provision of vaccines: The Ministry of Health would be providing vaccines when available. The Ministry will be directing and coordinating mass vaccination exercise.

PART 2

OBJECTIVE

- 1 The objective of this Business Continuity Plan (for Avian Flu) is to ensure uninterrupted delivery of essential services to the key airport infrastructure maintained by ST Electronics in a flu pandemic. This would be achieved through support by partner firms.

PART 3

EXECUTION

- 1 ST Electronics will continue to operate as close to normal operations as possible. This means that ST Electronics will work with their partners to maintain normal airport operations wherever possible and where manpower and resources permit.

Tasks

- 2 ST Electronics provides maintenance and operation services for a number of aeronautical telecommunication systems at Changi Airport and Seletar Airport. These systems are listed as follows:

Changi Airport

No	Systems	Organization
1	Automated Airport Information System (AAIS)	ST Electronics
2	Airport Surface Detection Equipment (ASDE)	ST Electronics
3	Approach Surveillance Radar 2 (ASR2)	ST Electronics
4	Changi Airport Communication System (CACS)	ST Electronics
5	Integration Voice Communication System (IVCS)	ST Electronics
6	Radio Direction Finder (RDF)	ST Electronics
7	Computerized Automatic Terminal Information System (CATIS)	ST Electronics
8	COSPAS-SARSAT Reception System (COSARS)	ST Electronics

Seletar Airport

No	Service	Organization
1	Seletar Wind Monitoring System (SWMS)	ST Electronics

- 3 ST Electronics and the partner firms are to develop their individual SOPs to ensure business continuity based on the guidelines outlined in this BCP.

Elaboration of Plans

- 4 Preventive Measures (Individual level)
 - a) In the event of an outbreak, all staff would be constantly reminded to monitor their health and watch out for flu-like symptoms. They would be advised to adopt good hygiene practices to minimize the risk of being infected with the virus. This should be done through various internal communication channels. Those with flu-like symptoms would be asked to see a doctor immediately.
 - b) Advisory would also be issued to discourage staff from travelling to affected areas. Application for leave to such areas would only be approved based on need-to-basis. The staff's supervisor would monitor the status of the staff closely and ensure that he/ she had undergone a medical check-up before reporting back to work.
 - c) Any staff who visited a doctor for flu-like symptoms is required to inform his/ her supervisor of the consultation and report the outcome as soon as possible.
 - d) If the doctors assess that the staff has not contracted the virus, the staff is to take the doctor's advice and remain at home until he/ she is well. However, if the doctors assess that the staff is suspected of contracting the virus, he/ she would be quarantined at home.
 - e) All staff are required to cooperate with the relevant authorities who may carry out contact tracing of the infected staff.

5 Preventive Measures (Organization level)

- a) ST Electronics would organize series of internal briefings by our Corporate HR, MOH or other medical clinic operator for its entire staff, including the airport staff, as and when appropriate. These briefings are intended to dispel any myths or misconceptions held by the staff in general, and to assuage their fears about being exposed to the flu pandemic due to them working in the airport. Professional advice would be given during these briefings.
- b) ST Electronics would also organize regular briefings with partner firms such as contractors. These briefings are intended to ensure that the partner firms are well-informed of the situation and have taken all necessary precautions, enabling the airport to maintain appropriate manpower levels to maintain normal operations.
- c) An institutional vaccination centre may be prepared at the Airports. When activated, the centre would vaccinate the first responders at Changi and Seletar Airports.
- d) ST Electronics and the partner firms would introduce alternate team deployment to minimize cross-contamination and stockpile relevant personal protective equipment. They would also launch internal staff communication programs to manage any physical and mental fatigue which may set in due to increase in workload and loss or suffering of loved ones.
- e) Respective organizations would plan for continuity of respective operations and corporate activities. As far as possible, attendance at external meetings should be kept on a need-to-basis and communication should be via telephone, fax, email or tele-conferencing.

PART 4

COMMAND AND CONTROL

- 1 ST Electronics would retain its structure in the event of an outbreak. Designated alternates to key officers would take over the management if the principle officers are unable to carry out their duties due to the infection of the virus.
- 2 The partner firms at Changi Airport and Seletar Airport would also maintain their structures with designated alternates to take over where necessary.
- 3 The alternate key appointment holders would be identified in the early stages of the disease by the respective Divisions / Human Resource Departments of the respective organizations.

Infotel Technologies (Pte) Ltd
Influenza Pandemic Business Continuity Plan(BCP)

OBJECTIVE

The objective of this Plan is to prepare the Company in case of an impending Influenza Pandemic on how to minimize infection to our staff and to continue to provide the necessary services required by our customers.

BACKGROUND

- The current threats of avian bird flu caused by H5N1 virus has spread to many countries in Asia and the western hemisphere. It is expected to spread even wider as birds migrate from the cold northern hemisphere to the warmer southern hemisphere in the coming weeks and months as winter sets in. In 2004/2005 more than 100 cases have been reported and more than 60 deaths.
- Many varieties of bird flu have been discovered in the past. While H5N1 affects mostly birds it has shown to spread to humans (HongKong Flu 1997). It is not evident at this stage to have human-to-human infection but as it mutates it is likely to cause human-to-human infections and hence the WHO has warned of a possible Pandemic.
- This virus is more contagious and deadly than SARS as it can spread even before symptoms show up and by indirect contact with contaminated surfaces. This virus is known to have survived between 24 to 48 hrs on solid surfaces. It also has a shorter incubation period (1-4 days) as compared to SARS (up to 10 days). The mortality is high and based on report cases so far in 2004/2005 is more than 50%.
- Once human-to-human infection occurs this is very serious as it will cause widespread deaths and world economy will grind to a halt. The more prepared we are in a global sense we have better chance to contain the situation. This requires the effort and cooperation of every individual, companies, organizations and governments.
- The avian bird flu can spread by direct contact with body fluids caused by coughing, sneezing, etc. and the disease is airborne.
- No effective vaccine to prevent and treat infection. Effectiveness of Tamiflu is limited and may take 6 months or more to develop first vaccine after pandemic. Supply of Tamiflu in short supply until end 2006 and may not be sufficient if outbreak occurs in the next few months. Therefore best strategy is prevention.
- Difficult to differentiate from normal common flu as symptoms such as high fever, cough, sore throat, muscle ache, shortness of breath, rhinitis, diarrhoea etc.

KEY STRATEGIES(“Prevention is better than cure”)

- Education on personal and environment hygiene
- Minimize human to human contacts (Social distance)
- Good surveillance/quarantine practices

PLANNING ASSUMPTIONS

- As the H5N1 virus is very contagious the warning period will be relatively short.
- While H5N1 strain is referred herein frequently the probability of another strain is quite high and any reference made to H5N1 strain also applies to any new strain (herein referred as the 'Virus')
- No vaccine against the Virus is currently and a vaccine may take about 6 months to develop upon on the onset
- Takes few days to confirm cases
- High mortality and high morbidity
 - Red Alert 70% staffing
- Each wave will last about 6 weeks. A pandemic usually comes in two or more waves with the second wave occurring within 3 to 9 months. First wave is the most serious.

CASE DEFINITION

- Probable Case – High fever more than 38 degree Celsius (except people age above 60 years old) and non-productive cough and have been to infected areas or come in contact with infected persons. People above 60 years old may not have fever but will show other symptoms such as malaise, chills, headache or myalgia
- Confirmed Case – When lab test confirms the infection.

PUBLIC ALERT SYSTEM

GREEN – Level

- No novel flu virus outbreak anywhere in the world and no public health threat to Singapore

WHO warns of possible novel virus outbreak as a result of isolated external or local cases of animal to human transmission. Threat of human to human cases low.

YELLOW

- Cases of human to human transmission caused by novel virus outside Singapore. Human to human transmission is inefficient. Threat of global pandemic is high and risk to Singapore is high.

ORANGE

- Pandemic underway with human to human transmission. WHO has confirmed the novel virus causing several outbreaks in one country and spreading to other countries. Mortality and morbidity is serious. Singapore experienced local cases but not yet spread to community.

RED

- Virus spread to community and mortality and morbidity increases. Healthcare system overwhelmed. Mortality and morbidity exceedingly high. Healthcare and social system overwhelmed. Economic activities severely disrupted and wide scale panic.

- PREPAREDNESS & RESPONSES

Alert GREEN

- Monitor the influenza situation globally
- Educate staff on good personal and environmental hygiene based on the guidelines provided by MOH at home and at work
- Encourage high risk group for seasonal flu vaccination
- Stock up of critical items
 - Qty 5 surgical masks for each staff
 - Qty 5 N95 masks for each staff
 - Qty 20 disposable gloves for each staff
 - Qty 5 disposable gowns for each staff
 - Qty 4 bottles of sodium hypochlorite 1%
 - Qty 4 bottles of ethyl alcohol (60%) or isopropyl (70%)
 - Qty 40 personal thermometer (1 for each staff)
 - Qty 3 ear thermometer with disposable ear covers
- Preparation of Company Business Continuity Plan
- Education on Influenza and Business Continuity Plan(BCP)
 - Presentations by Company on Influenza & BCP by HRE
 - Encourage staff to visit www.flu.gov.sg for more information
- Conduct exercises on temp checks, use of PPE, contact tracing, personal & environmental hygiene etc
- Should a local case be reported temperature checks for staff and visitors and visitor registration will be activated. Company will reinforce the importance and practice of personal and environmental hygiene.
- Encourage high risk group for seasonal flu vaccination to reduce the incidence of acute respiratory infections due to seasonal flu viruses.
- Take heed of travel & flu advisory and updates from MOH. Avoid live poultry and birds when overseas

Alert Yellow

- All measures for Alert GREEN
- Encourage social distancing per attached guidelines
- MOH will impose home quarantine for infected persons and their contacts
- Temperature checks increased to twice daily at home or work. Issue of personal thermometer
- Travellers to affected countries will be given Health Alert Notices and monitored for one incubation period which is currently 4 days
- Company operation staff will be split into two groups and isolated from each while at the same time maintain social distance within each group as far as possible including FRC. Office premises demarkated into two distinct work areas each serves by separate lift.
- Increase the company stockpile of critical items
- Avoid live poultry, birds, pet shops and farms all together (overseas & local). Eat only completely cooked poultry products include eggs.

Alert ORANGE

- All measures of Alert Yellow
- Increase frequency of environmental cleaning & disinfection
- Increase the frequency of personal hand washing
- Inform staff of where the Flu Clinics are located, opening hours
- Continue to emphasize the importance of good personal and environmental hygiene, social behaviour, discourage social events, social distancing etc
- Staff is encouraged to stay at home and avoid personal contact while at work
- Office premises physically separated into two distinct work areas each serves by separate lift, entrance and toilets.

Alert RED

- All measures in Alert ORANGE
- Impose more stringent measures including closing all social events, sales calls, operations, person-to-person contacts including family members.
- Reduced operational capability due to staff absenteeism and infection, economic & social disruption,
- May be necessary to split teams into three small grouping and more isolation between groups i.e. FRC shift to be meant by 1 staff instead of 2 currently
- Discontinue home quarantine and contact tracing as the numbers are too large to handle
- Heed measures per MOH latest advisory

COMMAND & CONTROL

Crisis Management Team (CMT) will consist of the CEO, HR Executive and Senior Manager, Service Operations. CMT will consult with MOH or other government bodies if needed.

Their contacts are as follows;

James Han, CEO	Tel(O):65807791	Tel(H): 64822835	H/P:98171821
George Fong, SM	Tel(O):65807779	Tel(H):	H/P:96247725
Bok Lai Chan HRE	Tel(O):65807812	Tel(H):	H/P:96988132

TEMPORARY WAIVER ON COMPANY POLICIES

Due the seriousness of the Influenza Pandemic the Company will consider temporarily changing the following policies;

- Those with flu like symptoms will not be required to turn for work and should seek medical attention as soon as possible
- The Company will lift the maximum annual limit for medical leave
- Those who travel to infected countries on personal basis under Alert Yellow & above should exercise voluntary home quarantine based on the guidelines issued by MOH at the expense of his annual leave entitlement or no-pay leave

SPECIFIC CONTINGENCY PLAN

CAAS FRC

- The FRC team of 2 persons at each shift is to be isolated. One person located at main FRC while the other to be located at VHMS Equipment Room (“alternate FRC”). This alternate FRC location must be sufficiently equipped to function as alternate FRC. These persons must use different toilets, different routes, etc to achieve total isolation as far as possible with no or minimum contact with others.
- During Alert RED it might necessary to reduce the shift team from 2 persons to 1 as mortality is expected to be high. There might be some reduction in our responsiveness because of reduced staffing.

Office @ Geo-Tele Centre

- Will split the physical office into two wings; East & West Wing (each using its own entrance, toilet and lift) with a “no-man zone” of at least 1 meter wide between them. Staff from each Wing is not allowed to cross to the other Wing. With this we hope to physically separate the two groups.
- In case of Alert ORANGE or RED it might be necessary to split the Company into 3 groups with one group working from their homes.