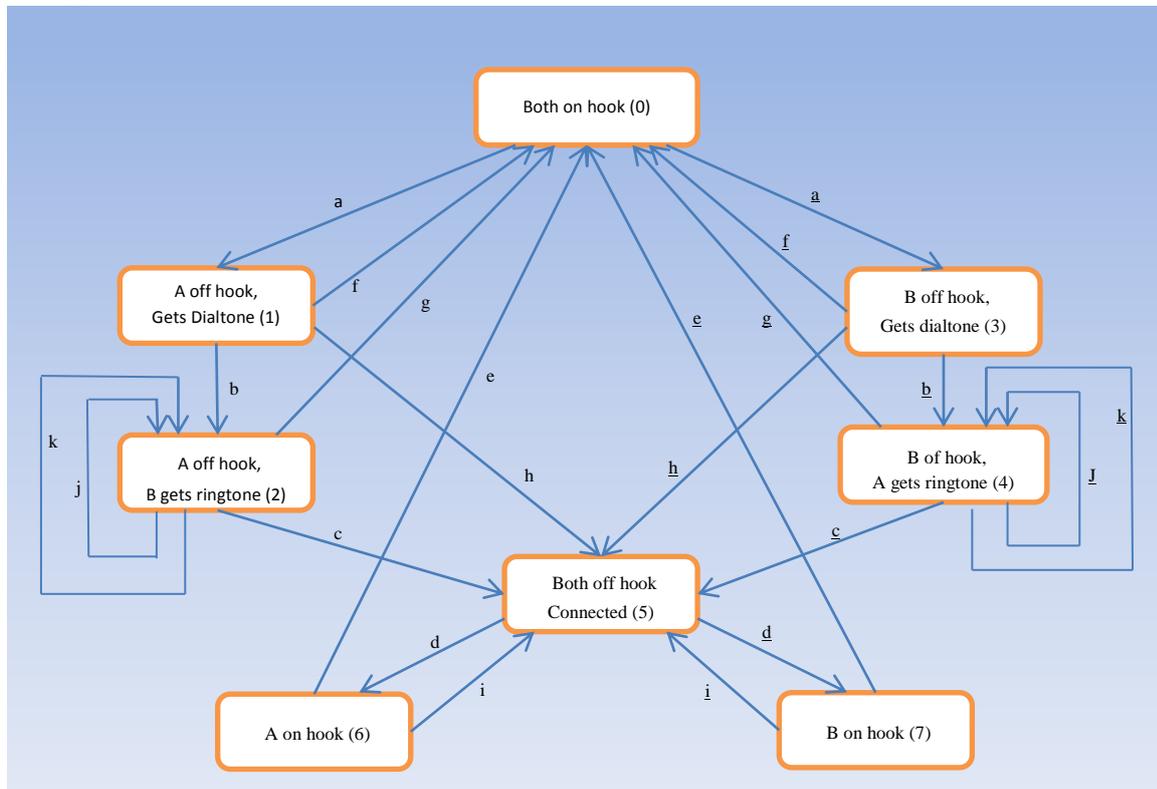


State Transition Diagram Telephone Exchange with 18F2550

Diagram



States

Number	Description	Name in code
0	Both A and B on hook (idle)	S BOTH ON HOOK
1	A is off hook, gets dialtone	S A OFF HOOK DT
2	A is off hook, B ringing	S A OFF HOOK CALLING
3	B is off hook, gets dialtone	S B OFF HOOK DT
4	B is off hook, A ringing	S B OFF HOOK CALLING
5	Both off hook, connected	S BOTH OFF HOOK
6	A on hook, B off hook	S A ON HOOK
7	A off hook, B on hook	S B ON HOOK

The list of Events and Actions can be found in the State Transition Table below.

State Transition Table

State Transition	Event causing it		Action on transition	
	Description	Name in code	Description	Name in code
a	A becomes off hook	E_A_OFF_HOOK	Switch on dialtone	A_a
b	3 secs elapsed since state1 was entered	E_DIALTIME_ELAPSED	Stop dialtone, Start ringing B	A_b
c	B becomes off hook (answers the call)	E_B_OFF_HOOK	Stop ringing B, Make connection between A and B	A_c
d	A is on hook again	E_A_ON_HOOK	Break connection between A and B	A_d
e	B is on hook again	E_B_ON_HOOK	none	A_e
f	A is on hook again	E_A_ON_HOOK	Stop dialtone	A_f
g	A is on hook again	E_A_ON_HOOK	Stop ringing B	A_g
h	B becomes off hook (answers the call)	E_B_OFF_HOOK	Stop dialtone, Make connection between A and B	A_h
i	A is off hook again	E_A_OFF_HOOK	Make connection between A and B	A_i
j	1 sec of ringing done	E_RING_1_SECS_ELAPSED	Mute ringing B	A_j
k	3 secs of silence done	E_RING_3_SECS_ELAPSED	Demute ringing B	A_k
<u>a</u>	B becomes off hook	E_B_OFF_HOOK	Switch on dialtone	A_a_
<u>b</u>	3 secs elapsed since state3 was entered	E_DIALTIME_ELAPSED	Stop dialtone, Start ringing A	A_b_
<u>c</u>	A becomes off hook (answers the call)	E_A_OFF_HOOK	Stop ringing A, Make connection between A and B	A_c_
<u>d</u>	B is on hook again	E_B_ON_HOOK	Break connection between A and B	A_d_
<u>e</u>	A is on hook again	E_A_ON_HOOK	none	A_e_
<u>f</u>	B is on hook again	E_B_ON_HOOK	Stop dialtone	A_f_
<u>g</u>	B is on hook again	E_B_ON_HOOK	Stop ringing A	A_g_
<u>h</u>	A becomes off hook (answers the call)	E_A_OFF_HOOK	Stop dialtone, Make connection between A and B	A_h_
<u>i</u>	B is off hook again	E_B_OFF_HOOK	Make connection between A and B	A_i_
<u>j</u>	1 sec of ringing done	E_RING_1_SECS_ELAPSED	Mute ringing A	A_j_
<u>k</u>	3 secs of silence done	E_RING_3_SECS_ELAPSED	Demute ringing A	A_k_