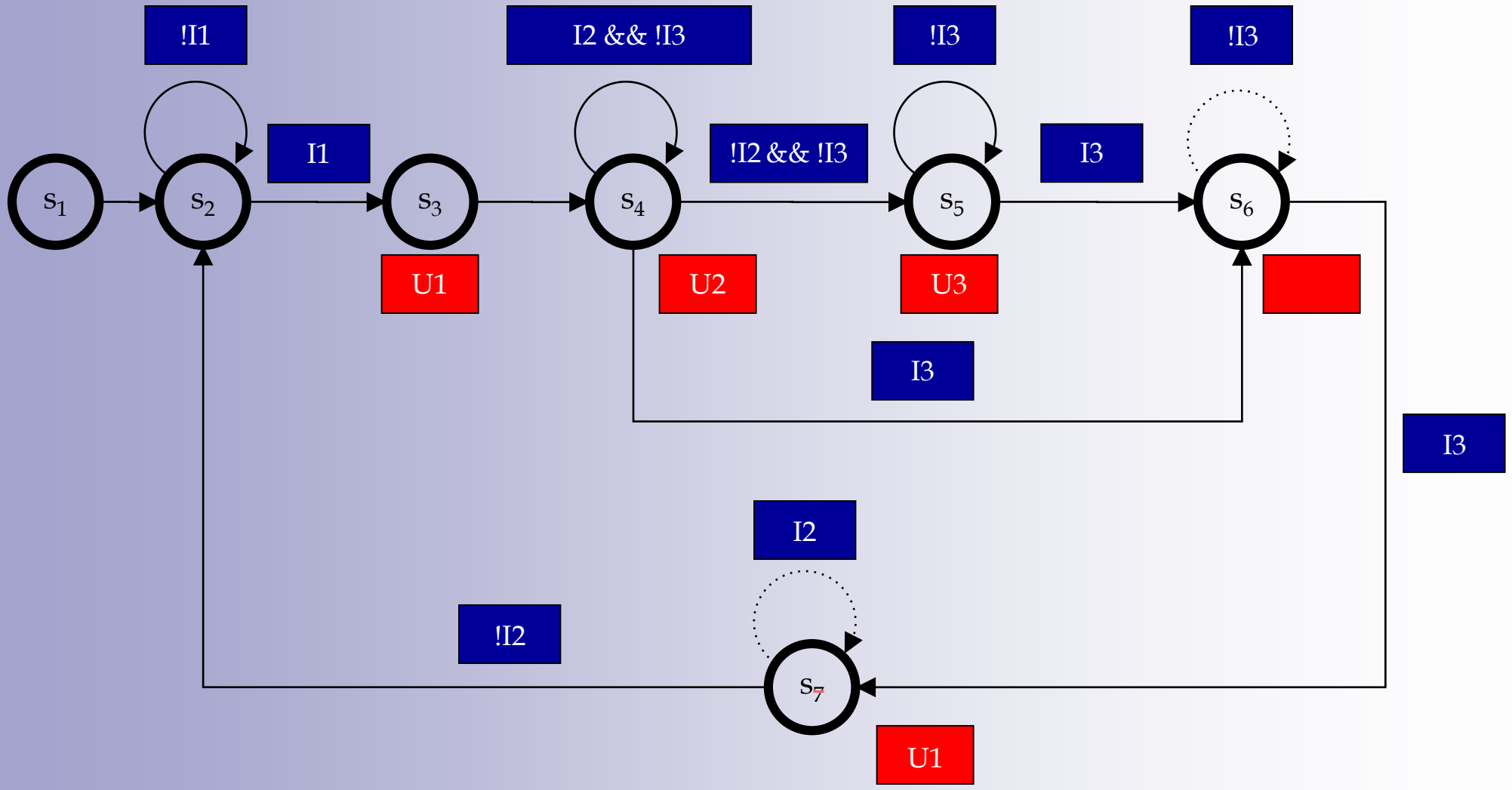
I1: Motion Detected
I2: Timer Running
I3: Authorized Access

U1: Start Timer
U2: Warning Buzz
U3: Alarm Buzz



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State (z)	I1	I2	I3	U1	U2	U3	Next State (z+1)
1	X	X	X	0	0	0	2
2	0	X	X	0	0	0	2
2	1	X	X	0	0	0	3
3	X	X	X	1	0	0	4
4	X	1	0	0	1	0	4
4	X	0	0	0	1	0	5
4	X	X	1	0	1	0	6
5	X	X	0	0	0	1	5
5	X	X	1	0	0	1	6
6	X	X	0	0	0	0	6
6	X	X	1	1	0	0	7
7	X	1	X	0	0	0	7
7	X	0	X	0	0	0	2

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```
if (mState == S1) nextState(S2,0,0,0);//R1-A

if (mState == S2 && mMotionDetected) nextState(S3,1,0,0);//R2-B

if (mState == S3) nextState(S4,0,1,0);//R3-C

if (mState == S4){//R4-B
    if (!mTimerRunning && !mAccess) nextState(S5,0,0,1);//R5-B
    if (mAccess) nextState(S6,0,1,0);//R6-C
}//R7-A

if (mState == S5 && mAccess) nextState(S6,1,0,0);//R8-C

if (mState == S6 && mAccess) nextState(S7,1,0,0);//R9-C

if (mState == S7 && !mTimerRunning) nextState(S2,0,0,0);//R10-C
```