Transition	SMT Formula
LC → DoorOpen	$(f = i) \land (l_i^u \lor l_i^d) \land C_i \quad (1)$
LC → $Level_i$	$\bigwedge_{i=1}^{n-1} (f = i) \land \left(\Big(((DIR = (UP \lor NA)) \land l_i^u) \lor ((DIR = (DOWN \lor NA)) \land l_i^d) \Big) \right) \quad (2)$
LC → SetMotionUp	$\bigvee_{i=0}^{n-1} (f = i) \land \left(\bigvee_{j=i+1}^{n-1} (l_j^u \lor l_j^d) \right) \land (DIR = (UP \lor NA)) \quad (3)$
LC → SetMotionDown	$\bigvee_{i=n-1}^{1} (f = i) \land \left(\bigvee_{j=0}^{i-1} (l_j^u \lor l_j^d) \right) \land (DIR = (DOWN \lor NA)) \quad (4)$
DoorClose → SetMotionUp	$(DIR = (UP \lor NA)) \land \left(\bigvee_{i=1}^{n-1} (f = i) \land \bigvee_{j=i+1}^{n-1} (c_j \lor l_j^u \lor l_j^d) \right) \land \neg\left(\bigvee_{j=0}^{i-1} (c_j \lor l_j^u \lor l_j^d) \right) \land \left(\bigvee_{j=i+1}^{n-1} (c_j \lor l_j^u \lor l_j^d) \right) \quad (5)$
DoorClose → SetMotionDown	$(DIR = (UP \lor NA)) \land \left(\bigvee_{i=1}^{n-1} (f = i) \land \neg \left(\bigvee_{j=i+1}^{n-1} (c_j \lor l_j^u \lor l_j^d) \right) \land \left(\bigvee_{j=0}^{i-1} (c_j \lor l_j^u \lor l_j^d) \right) \right)$ $\lor\, (DIR = (DOWN \lor NA)) \land \left(\bigvee_{i=1}^{n-1} (f = i) \land \bigvee_{j=0}^{i-1} (c_j \lor l_j^u \lor l_j^d) \right) \quad (6)$
DoorClose → Idle	$\bigvee_{i=0}^{n-1} \neg c_i \lor \bigvee_{i=0}^{n-1} (f = i) \land c_i \quad (7)$
Idle → $Level_i$	$(f = i) \land (c_i \lor l_i^u \lor l_i^d) \quad (8)$
MoveDown → $Level_i$	$(f = i) \land (l_i^d \land (DIR = DOWN) \lor c_i) \quad (9)$
MoveUp → $Level_i$	$(f = i) \land (l_i^u \land (DIR = UP) \lor c_i) \quad (10)$

Table 1: SMT Formulas for State Transitions