Schmitt trigger Finite State machine

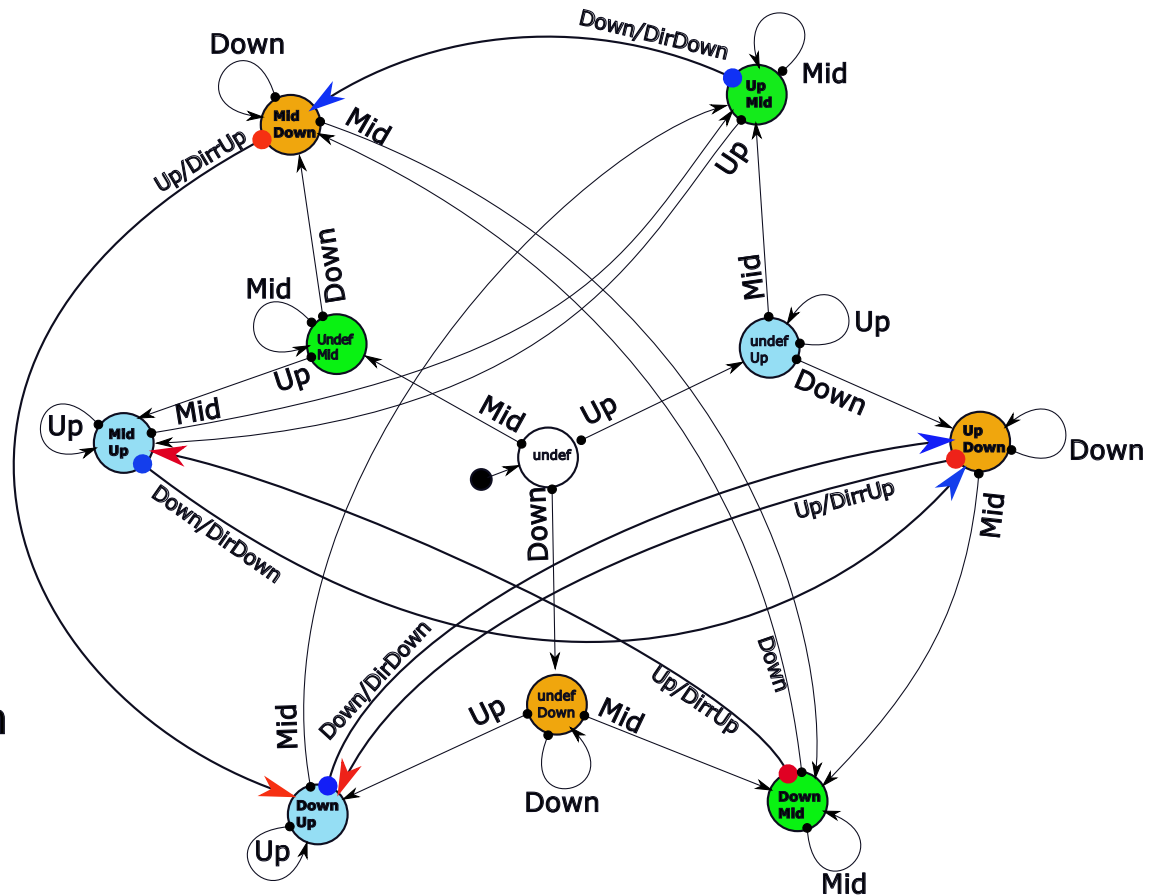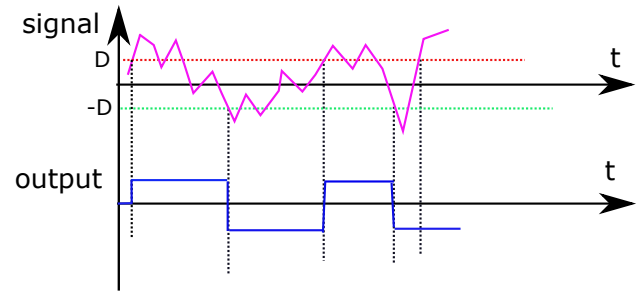**Input:**

D<signal   :   InPut=0 Up
|signal|<D :   InPut=1 Mid
signal<-D :   InPut=2 Down

OutPut:

1 DirrUp
-1 DirDown
None

States:

0, undefUp
1, MidUp
2, DownUp
3, UndefMid
4, UpMid
5, DownMid
6, undefDown
7, UpDown
8, MidDown
9, undef

state/action table		States									
		undefUp 0	**MidUp 1**	**DownUp 2**	UndefMid 3	**UpMid 4**	DownMid 5	undefDown 6	**UpDown 7**	**MidDown 8**	undef 9
inputs	Up	undefUp/ none	MidUp/ none	DownUp/ none	MidUp/ none	MidUp/ none	MidUp/ DirrUp	DownUp/ DirrUp	DownUp/ DirrUp	DownUp/ DirrUp	undefUp/ none
	Mid	UpMid/ none	UpMid/ none	UpMid/ none	UndefMid/ none	UpMid/ none	DownMid/ none	DownMid/ none	DownMid/ none	DownMid/ none	UndefMid/ none
	Down	UpDown/ DirDown	UpDown/ DirDown	UpDown/ DirDown	MidDown/ none	MidDown/ DirDown	MidDown/ none	undefDown/ none	UpDown/ none	MidDown/ none	undefDown/ none