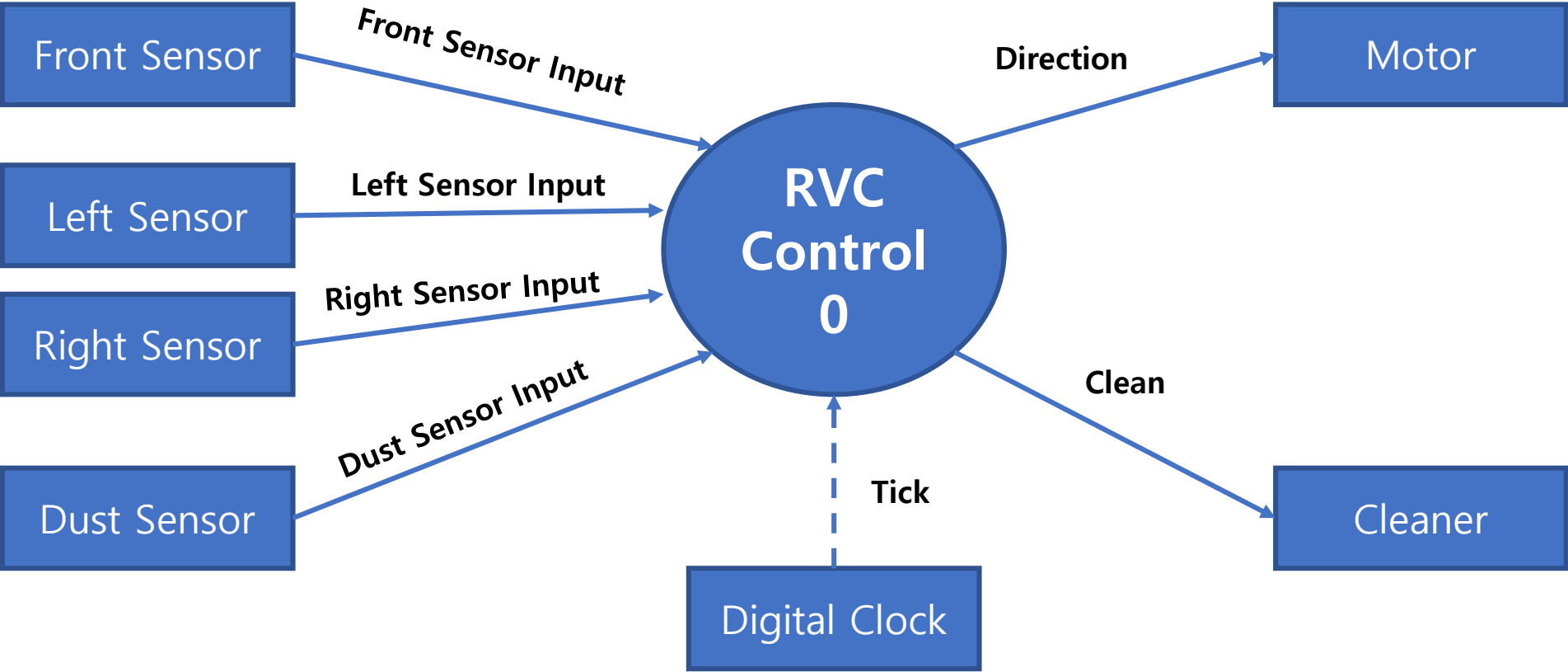


DFD - RVC

201211355 손지웅

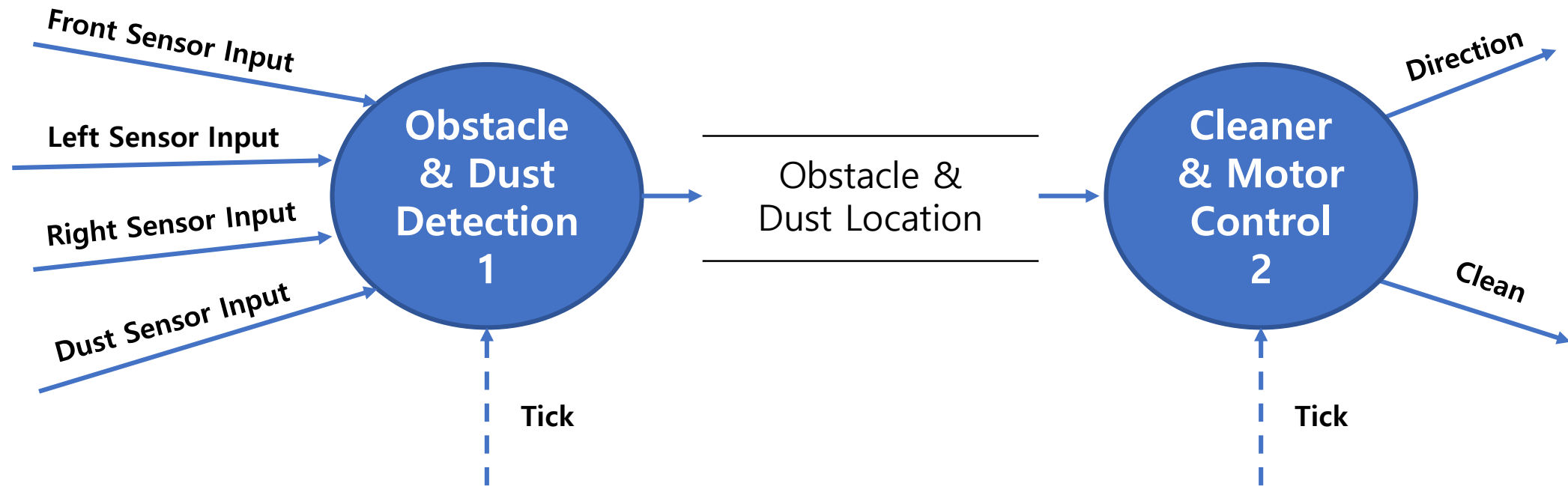
DFD Level 0 - RVC



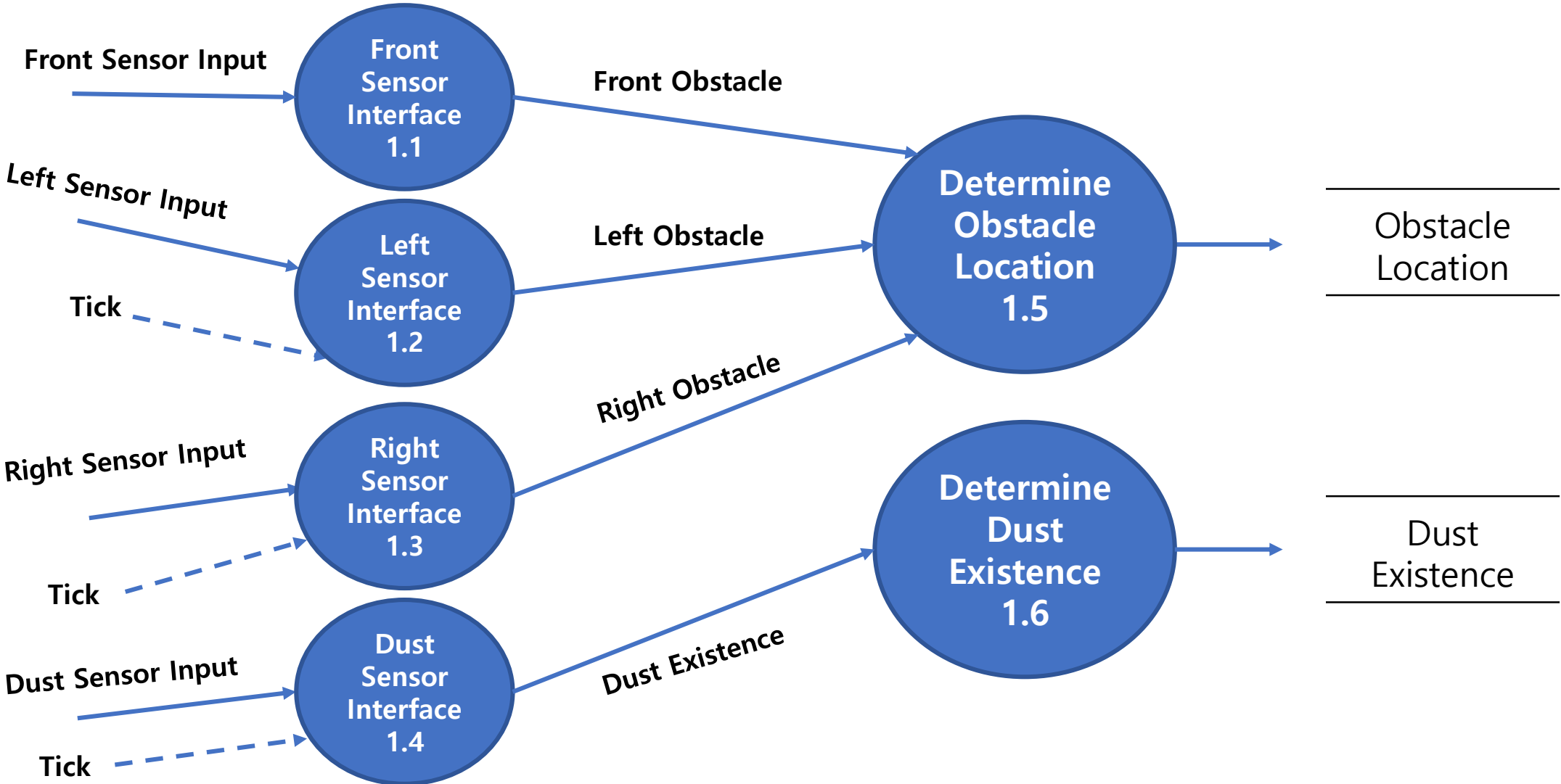
DFD Level 0 - RVC

Input / Output Event	Description	Format / Type
Front Sensor Input	Detects obstacle in front of the RVC	True/False, Interrupt
Left Sensor Input	Detects obstacle in the left side of the RVC periodically	True/False, Periodic
Right Sensor Input	Detects obstacle in the right side of the RVC periodically	True/False, Periodic
Dust Sensor Input	Detects dust on the floor periodically	True/False, Periodic
Direction	Direction commands to the motor (go forward / turn left with an angle / turn right with an angle/ turn right until turning half)	Forward/ Left/ Right/ Stop/ Rotate
Clean	Turn off / Turn on / Power-Up / Power-down	On/ Off/ Up/ Down

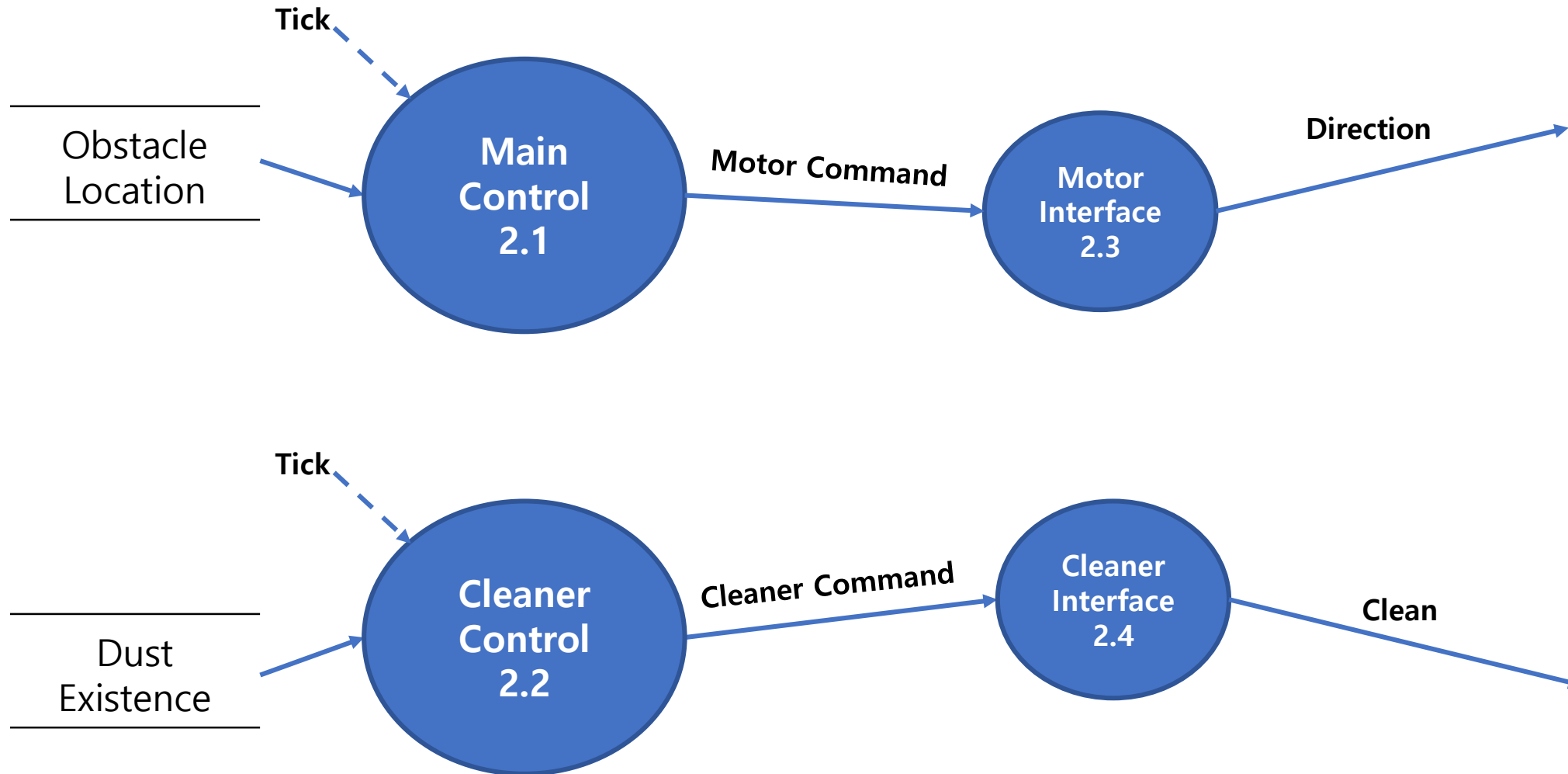
DFD Level 1 - RVC



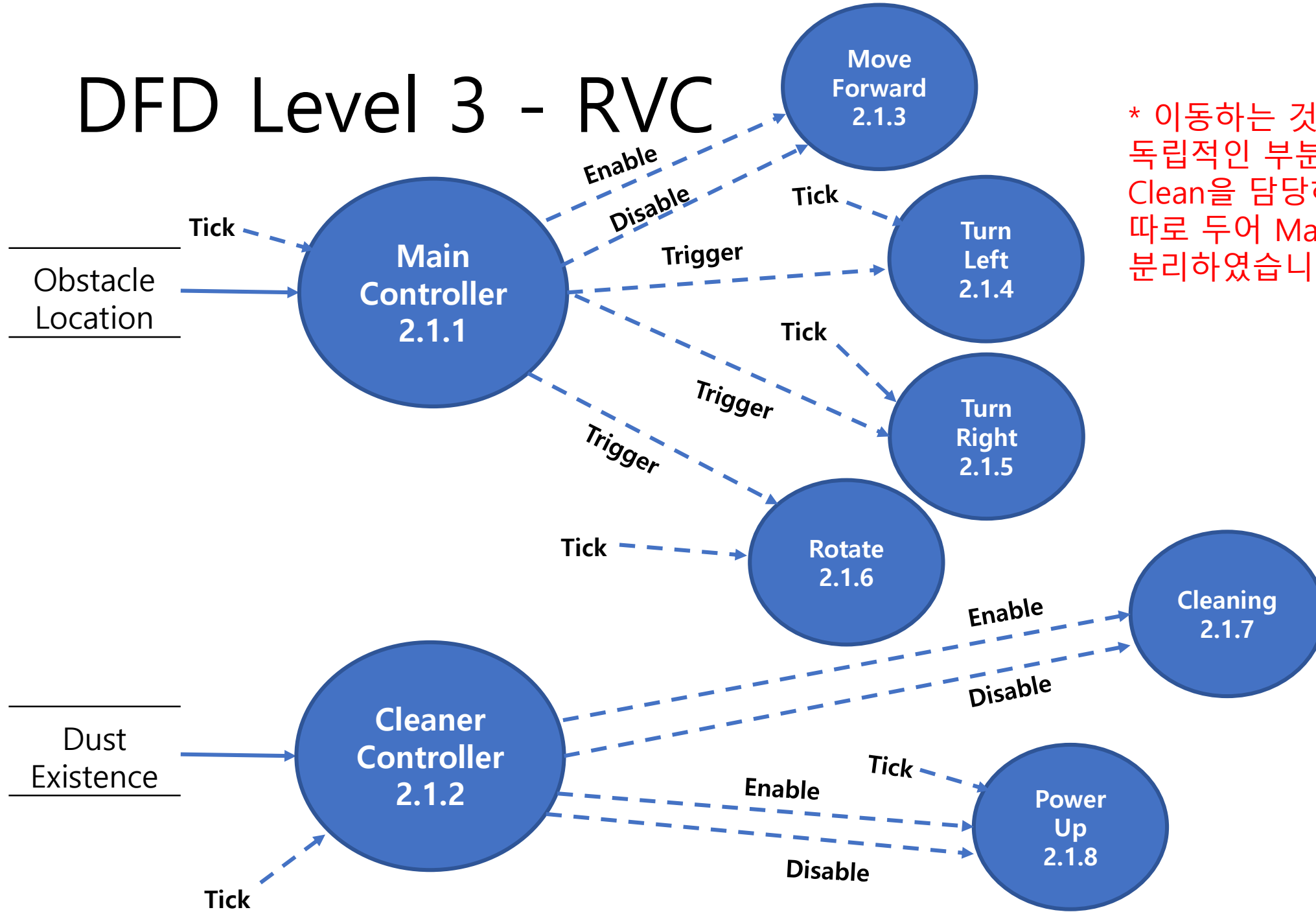
DFD Level 2 - RVC



DFD Level 2 - RVC



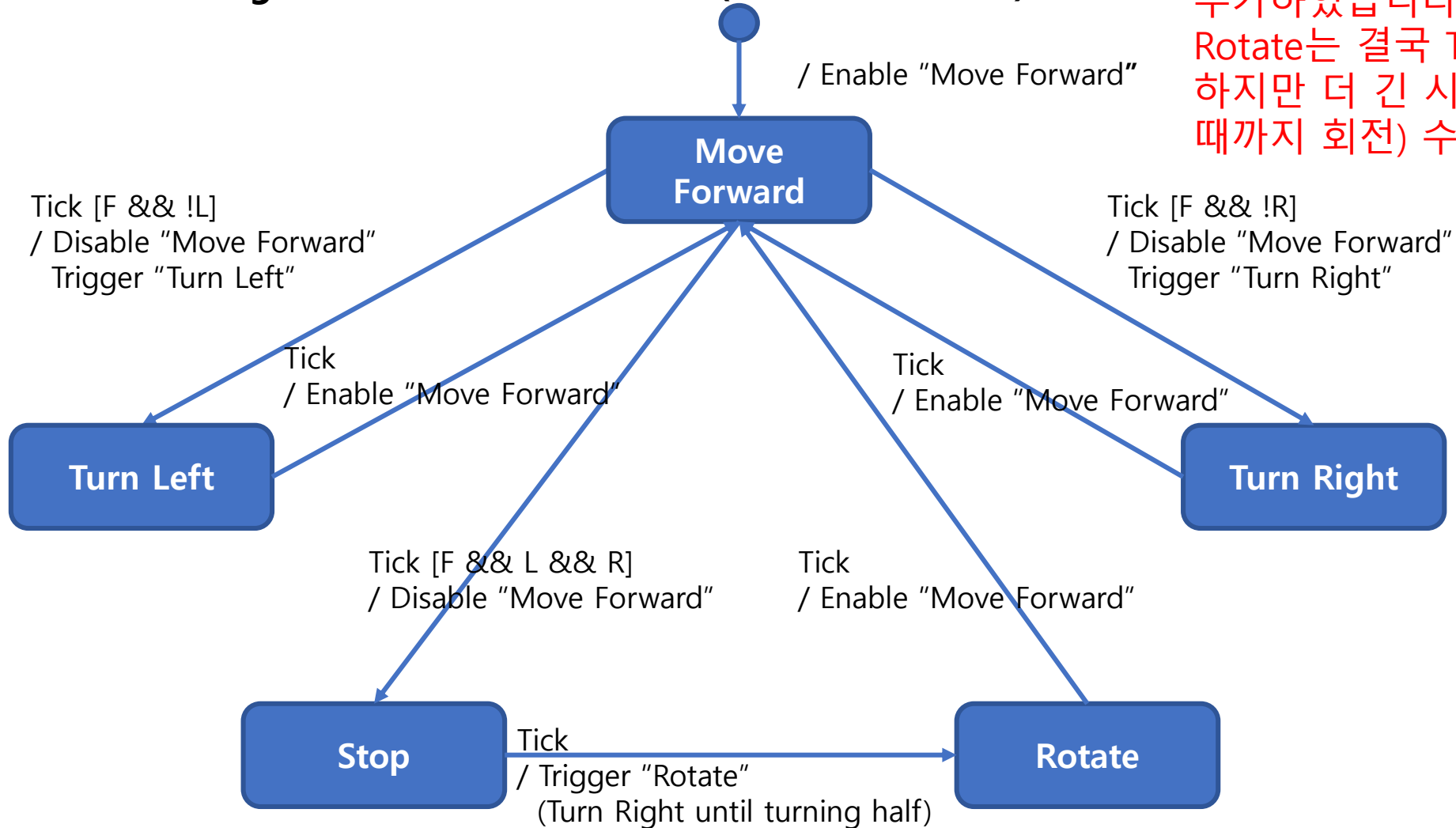
DFD Level 3 - RVC



* 이동하는 것과 청소하는 것이 독립적인 부분이라 생각되어 Clean을 담당하는 Controller를 따로 두어 Main Controller와 분리하였습니다.

DFD Level 4 - RVC

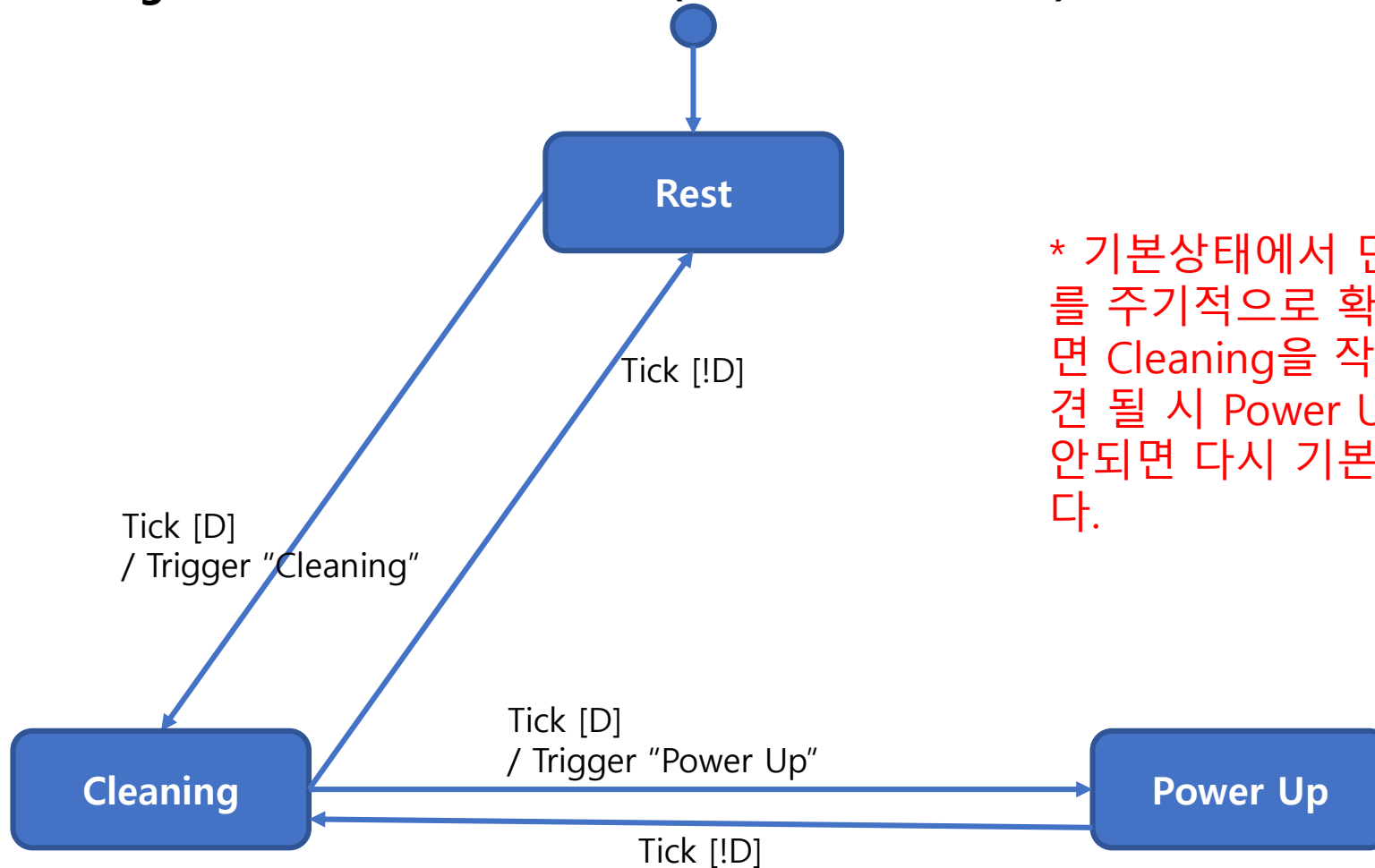
State Transition Diagram for Controller 2.1.1 (Main Controller)



- 앞 양 옆이 감지 되므로 이동할 수 없는 Stop상태가 되었을 때 방향을 바꿔야하므로 Rotate를 추가하였습니다. Rotate는 결국 Turn Right를 수행하지만 더 긴 시간(방향 전환 할 때까지 회전) 수행합니다.

DFD Level 4 - RVC

State Transition Diagram for Controller 2.1.2 (Cleaner Controller)



* 기본상태에서 먼지(D) 발견 유무를 주기적으로 확인 하고 존재 한다면 Cleaning을 작동합니다. 계속 발견 될 시 Power Up을 하고 발견이 안되면 다시 기본상태로 돌아갑니다.

DFD - RVC

