

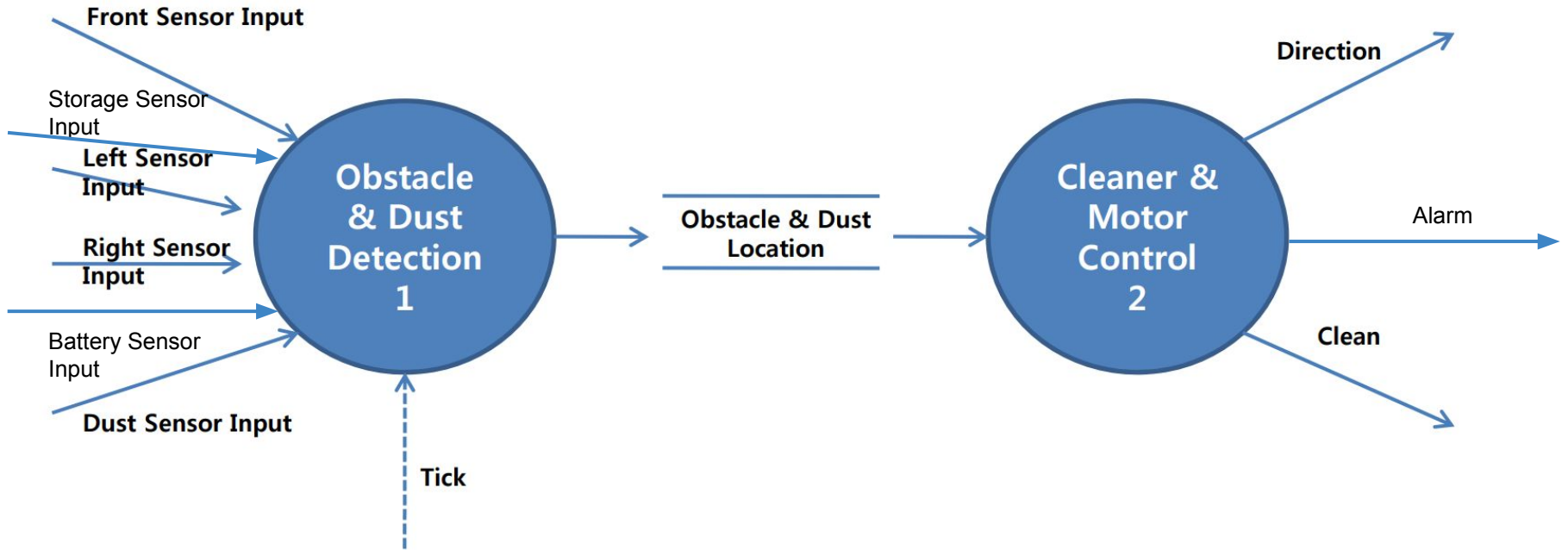
RVC DFD

201311283 송형선

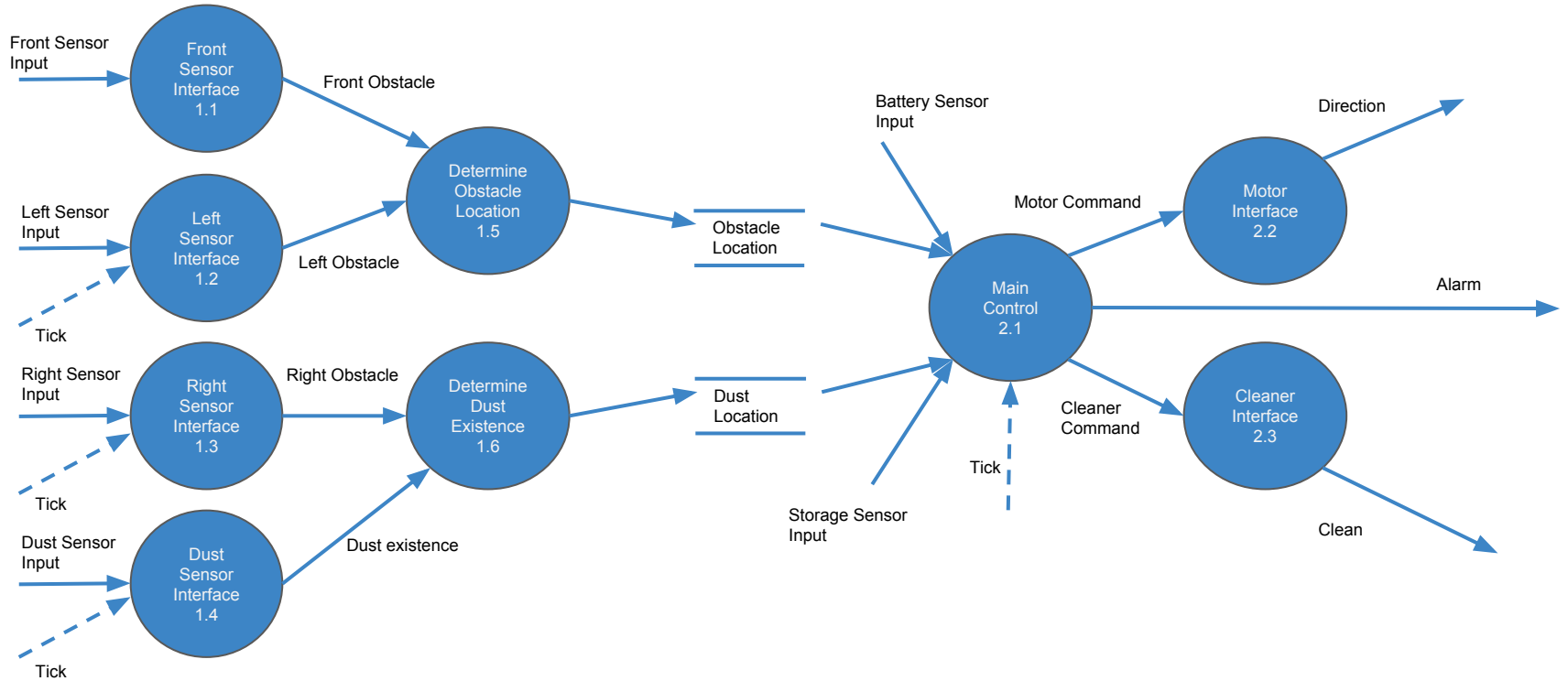
RVC DFD Level 0

Input / Output Event	Description	Format / Type
Front Sensor Input	Detects obstacles in front of the RVC	True / False , Interrupt
Left Sensor Input	Detects obstacles in the left side of the RVC periodically Detects obstacles in the left side of the RVC periodically	True / False , Periodic
Right Sensor Input	Detects obstacles in the right side of the RVC periodically	True / False , Periodic
Dust Sensor Input	Detects dust on the floor periodically	True / False , Periodic
Battery Sensor Input	Check Battery of the RVC	LOW / NO , Interrupt
Storage Sensor Input	Check Storage of the RVC	FULL , Interrupt
Direction	Direction commands to the motor (go forward / turn left with an angle / turn right with an angle)	Forward / Left / Right / Stop
Clean	Turn off / Turn on / Power-Up	On / Off / Up
Alarm	Low Battery Alarm / No Battery Alarm / Full Storage Alarm	LOW / NO / FULL

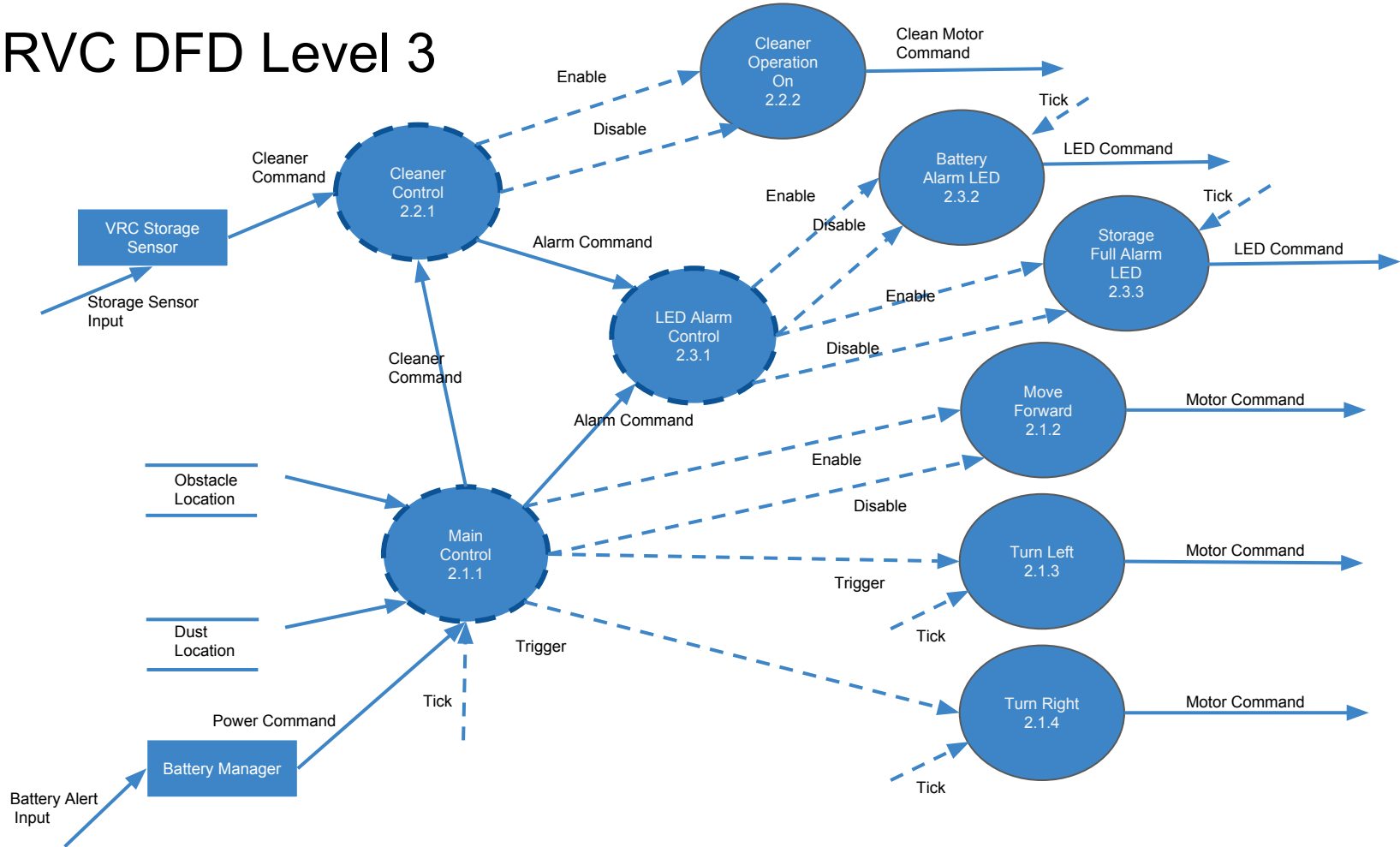
RVC DFD Level 1



RVC DFD Level 2

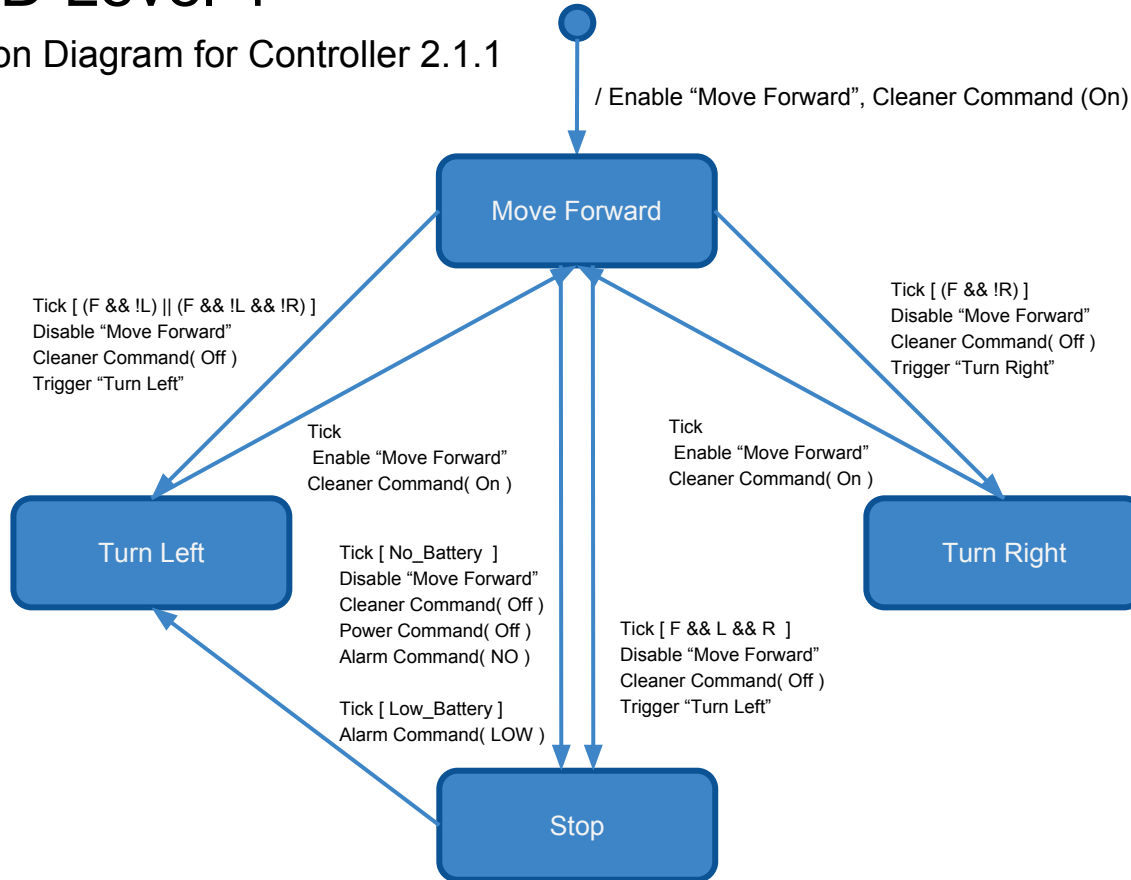


RVC DFD Level 3



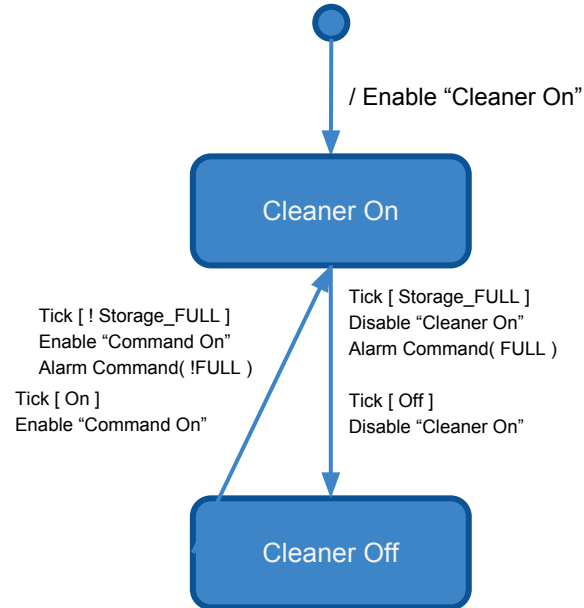
RVC DFD Level 4

State Transition Diagram for Controller 2.1.1



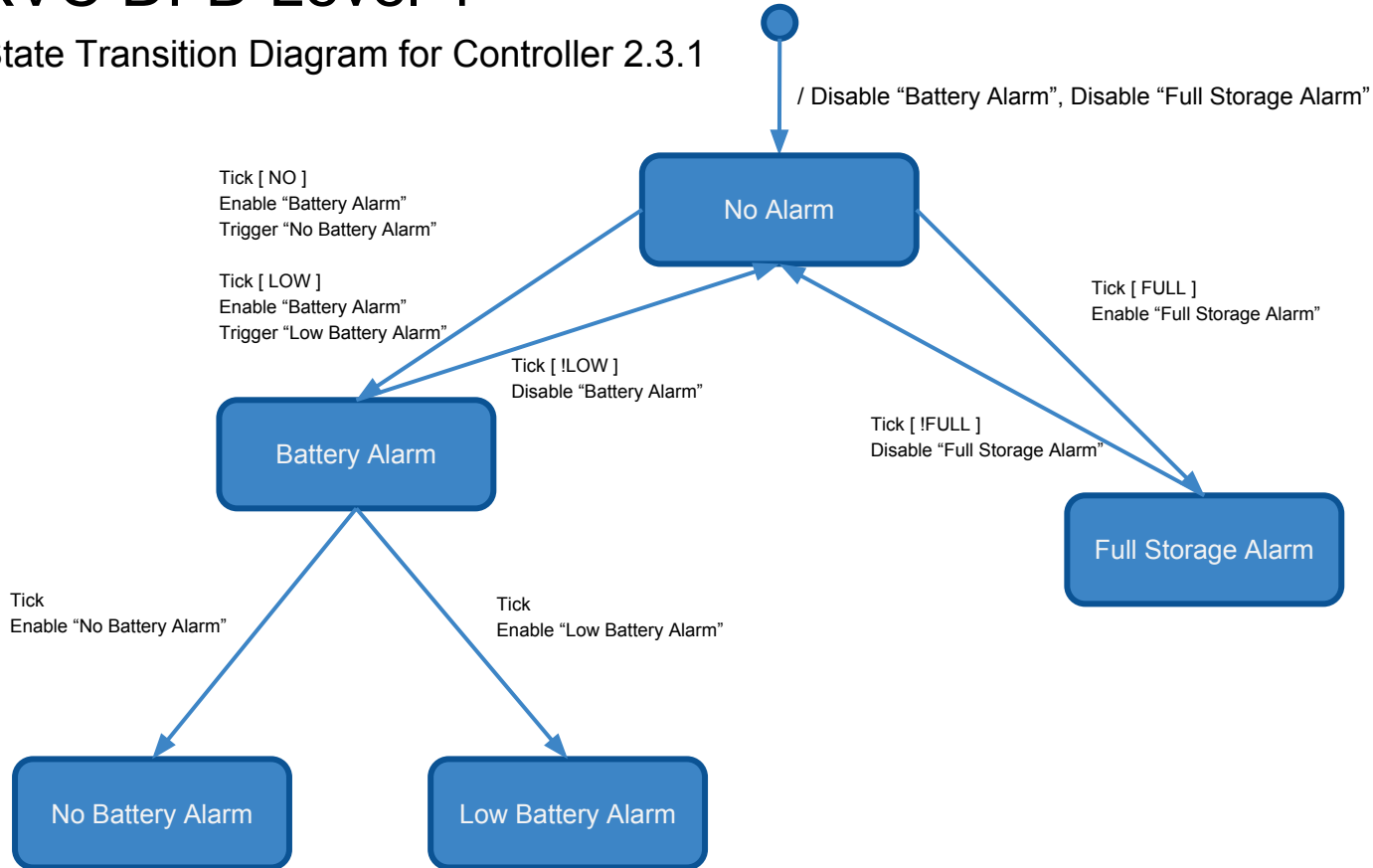
RVC DFD Level 4

State Transition Diagram for Controller 2.2.1



RVC DFD Level 4

State Transition Diagram for Controller 2.3.1



Explanation

1. **Storage** 용량 점검 센서를 추가하여 **Storage** 용량이 전부 채워질 경우 **LED**로 불빛이 들어오는 알람기능 추가.
2. 기존 **DFD**에서 **Clean Controller** 는 구현되지 않았던 문제 수정.
3. **Battery** 센서를 추가하여 전력이 공급되지 않을 경우 행동을 중단하도록 수정하고, 공급되는 전력의 양이 적을 경우 **LED**로 불빛이 들어오는 알람기능 추가
4. **LED Control**을 추가하여 **LED**와 관련한 **Command**를 **manage**. 알람을 위해 **LED**를 조작할 때 디지털 시간을 입력을 받아 보다 다양한 신호(현재 배터리가 **Low**상태인지, 혹은 아예 없는지)를 보낼 수 있도록 보강.
5. **Stop**인 경우 아예 **RVC**가 동작을 중지하는 문제를 해결하기 위해 우선 좌회전 정책으로 출구를 찾아 계속 동작할 수 있도록 함.