

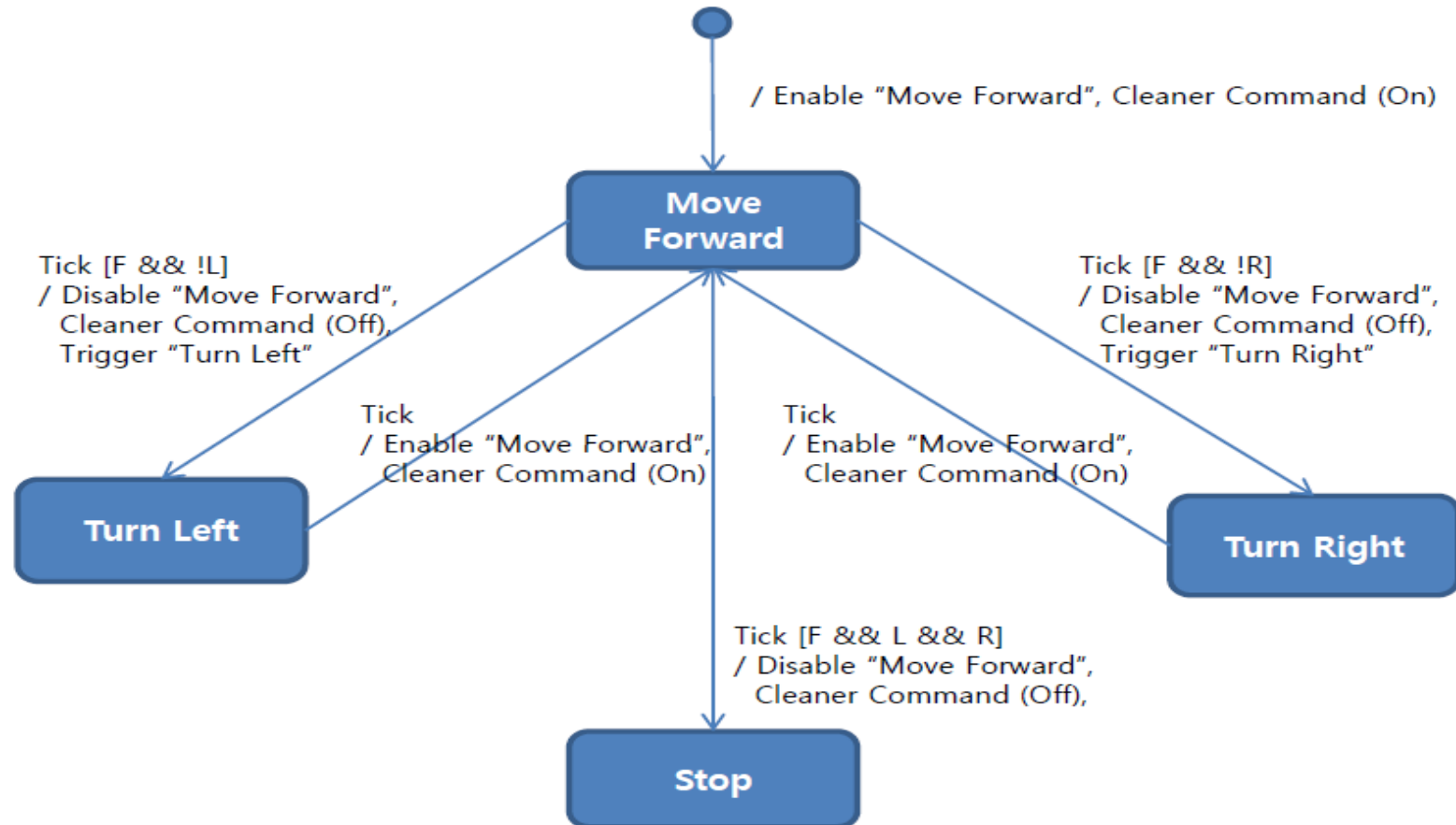
# Individual Assignment #1

Introduction to software engineering(Class A)  
Modification and Extension of Robot Vacuum Cleaner SASD

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# DFD in LAB Note

State Transition Diagram for Controller 2.1.1

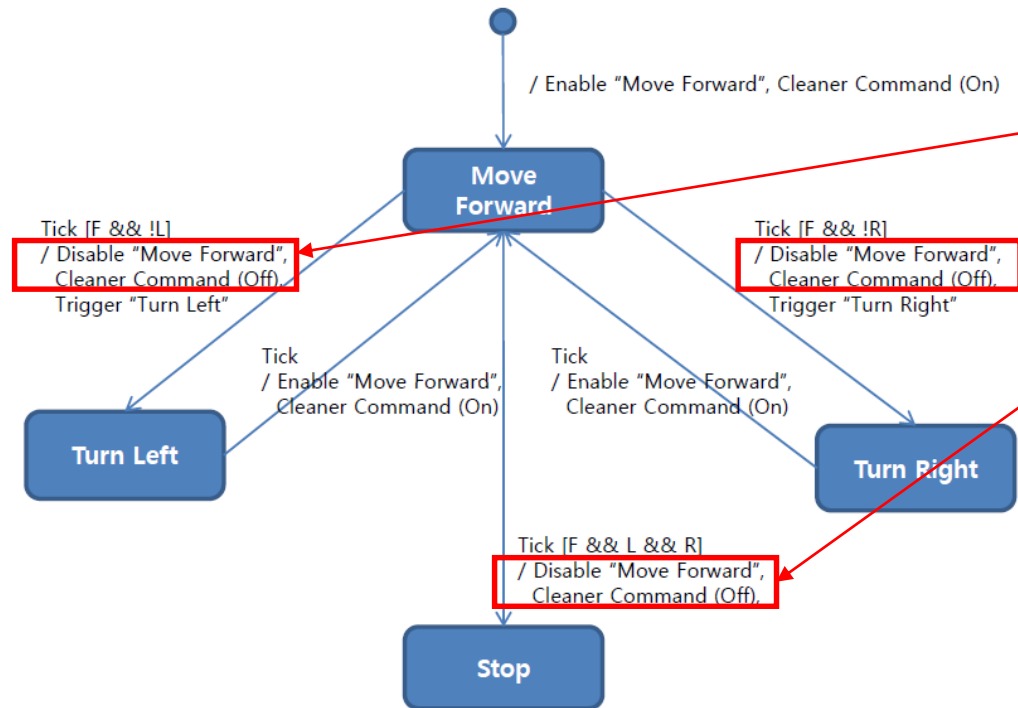


# Statement of purpose and Problems

- An RVC automatically cleans and mops household surface. **(accomplished)**
- It goes straight forward while cleaning. **(accomplished)**
- If its sensors found an obstacle, it stops cleaning, turn aside and goes forward with cleaning. **(not accomplished)**
- If it detects dust, power up the cleaning for a while **(not accomplished)**
- We do not consider the detail design and implementation on HW controls. **(accomplished)**
- We only focus on the automatic cleaning function. **(accomplished)**

# Problems

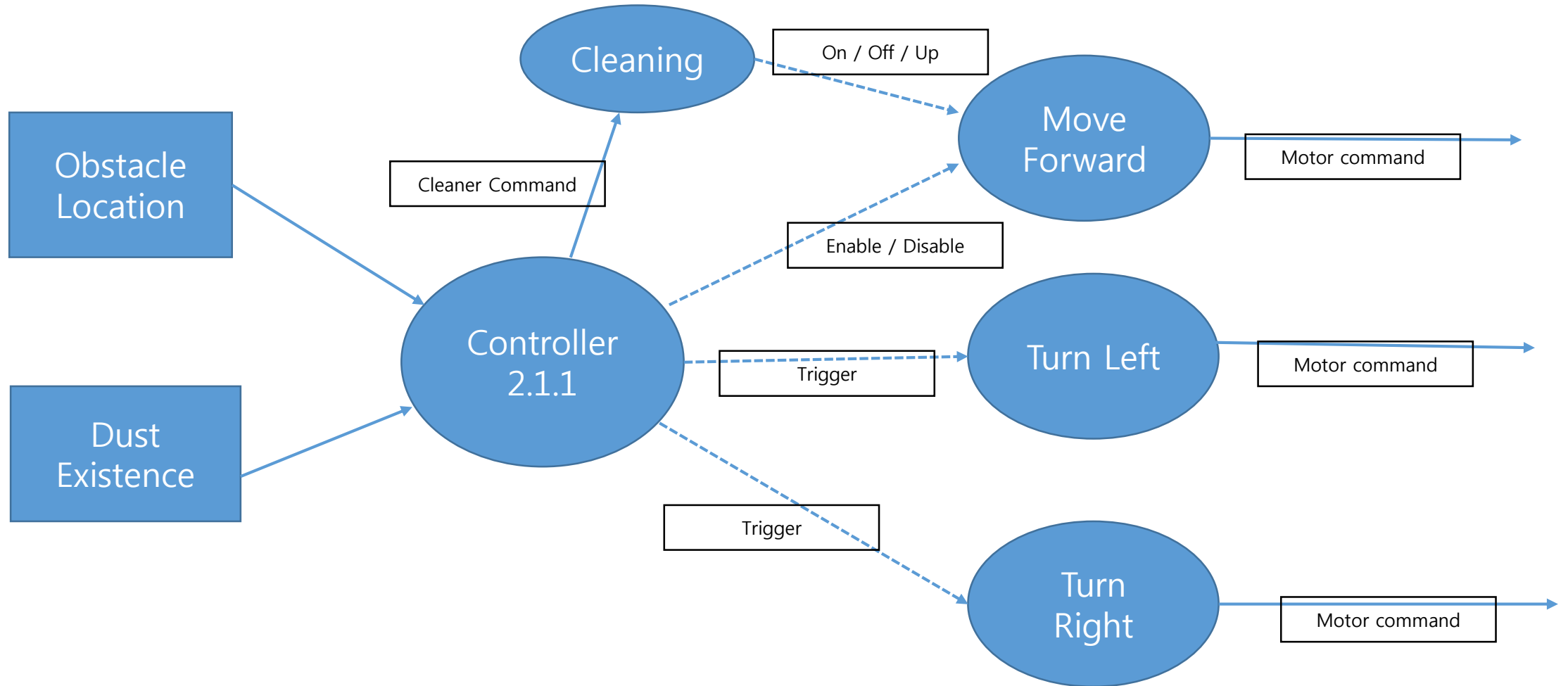
State Transition Diagram for Controller 2.1.1



Dust cleaner powered up dose not exist.  
It is seeming unstable.

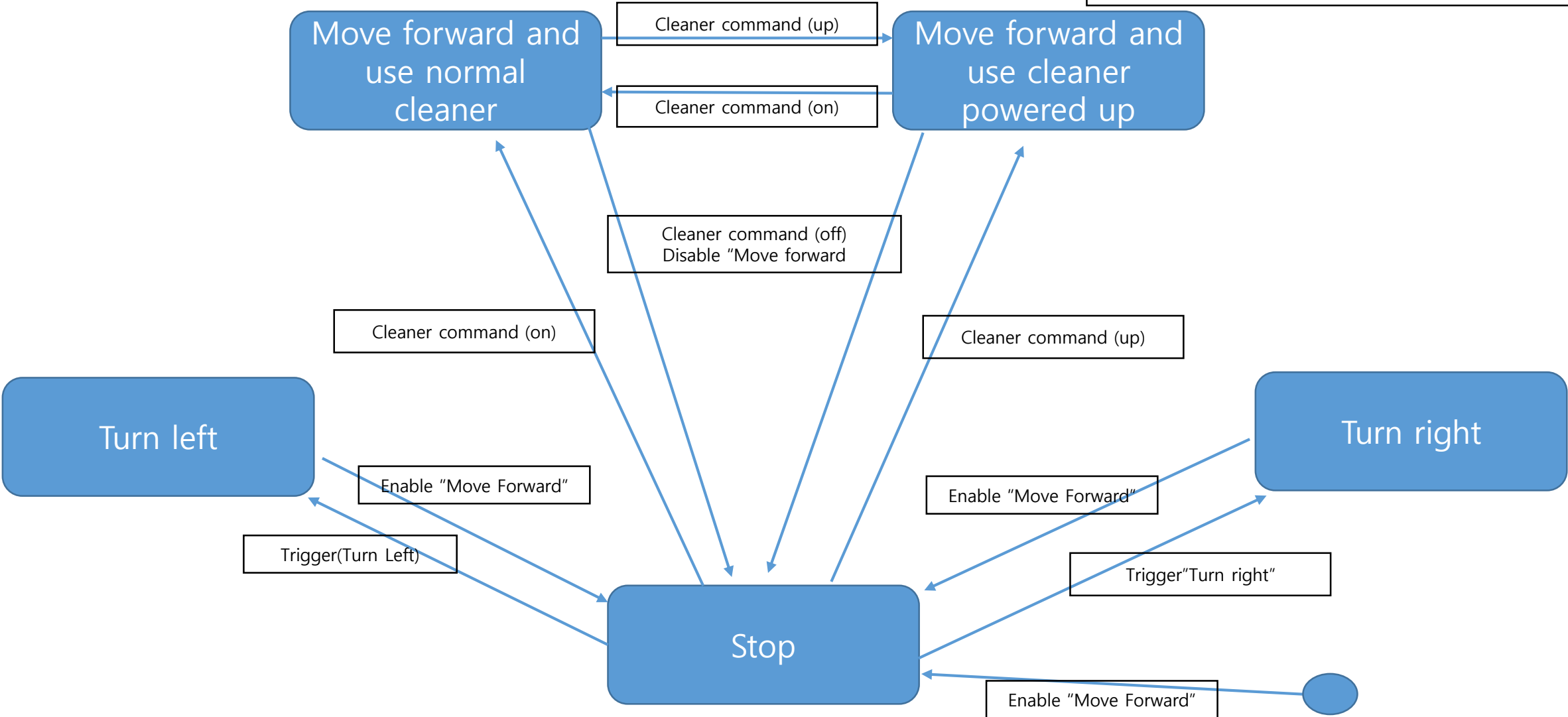
- Going forward and cleaning coincide or don't coincide
- Detecting dust, RVC still move forward.

# Modification DFD Level 3



# Modification DFD LEVEL 4

If Enable "Move forward" and cleaner command on / up, RVC move forward



## Summary

- 1. 청소기가 작동할 때 먼지 센서가 먼지를 감지 했을 때와 그렇지 않을 때로 나누었습니다.
- 2. RVC가 앞으로 전진할 수 없을 때 먼저 stop 상태로 전환하게끔 설계하였습니다.
- 3. RVC가 Enable "Move forward" 와 Cleaner command on 혹은 cleaner command up 이라는 제어 흐름이 동시에 작동할 때 청소를 시작하도록 하였습니다.