

# High Pressure Detector

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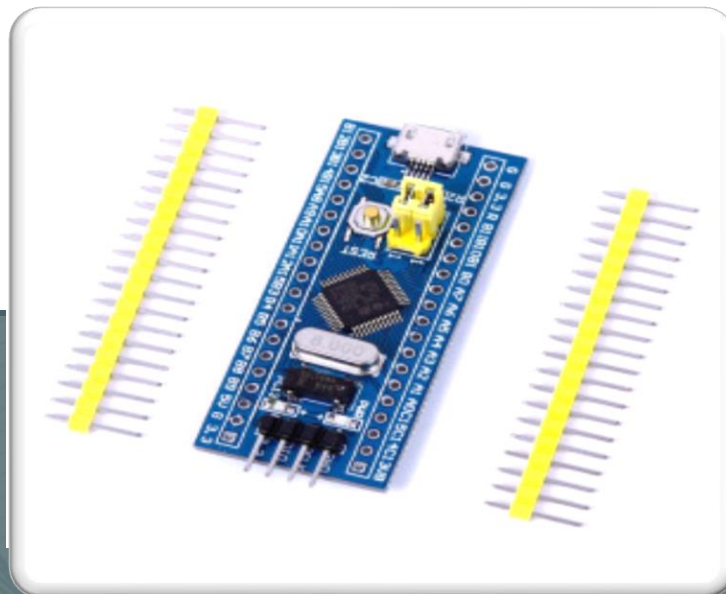
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## Case Study

We need to create a software that will run on stm32f103c6 that will have the following specifications:

- 1) Reading air pressure and detecting if the pressure is above a certain threshold.
- 2) Alarm will last for 60 seconds.
- 3) Save measured values on a flash memory.



## THE PROCESS

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### Assumptions

Certain assumptions will be made including the following:

- 1) controller set up and shutdown procedures are not modeled.
  - 2) maintenance is not modeled.
  - 3) sensor/alarm never fails.
  - 4) power never shuts down.
  - 5) threshold value cannot be changed.
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### Versioning

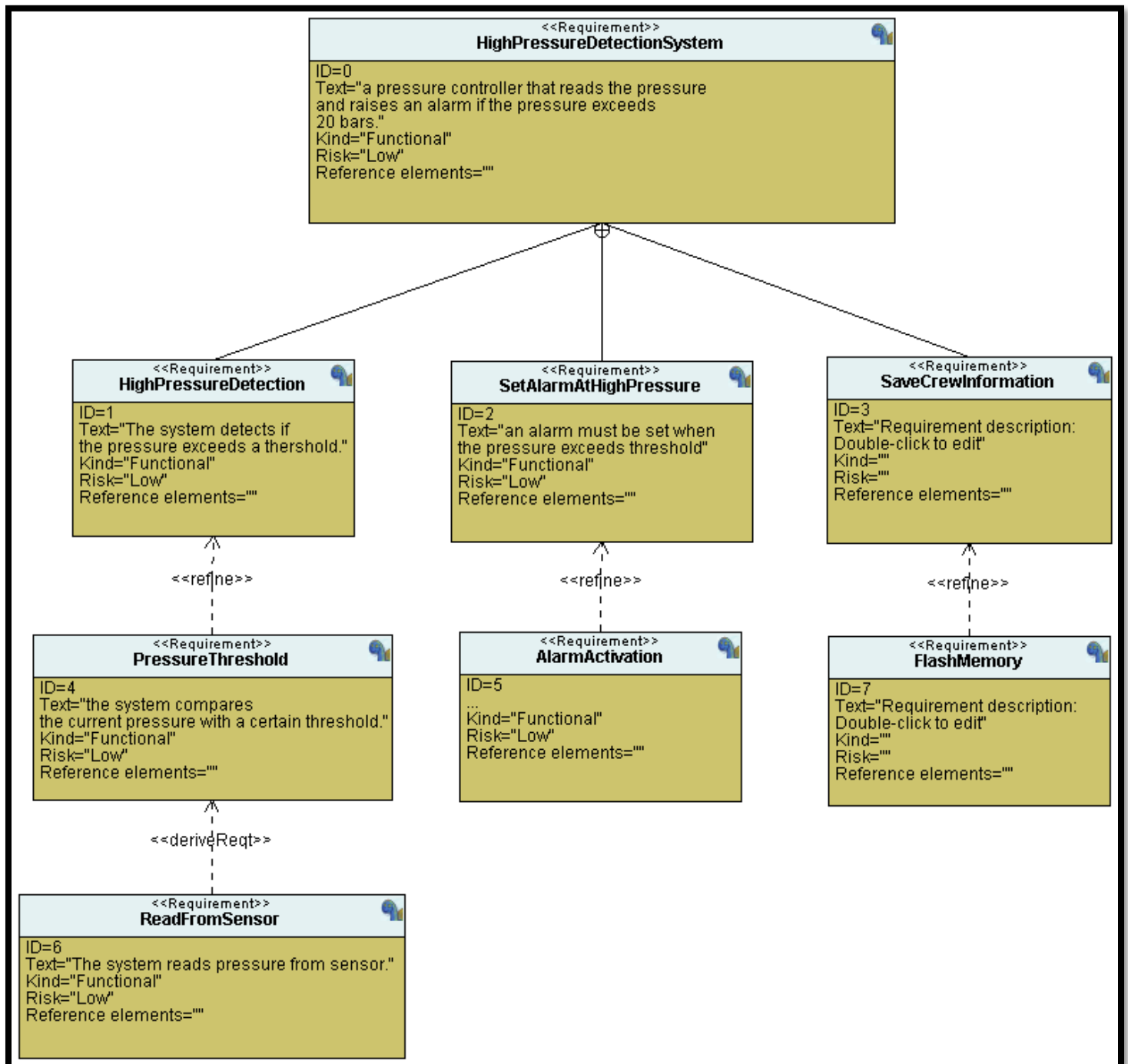
#### Version 1.0

- sensor reads value and compares it against threshold.
- LED will light up for 60 seconds if the alarm is above threshold.

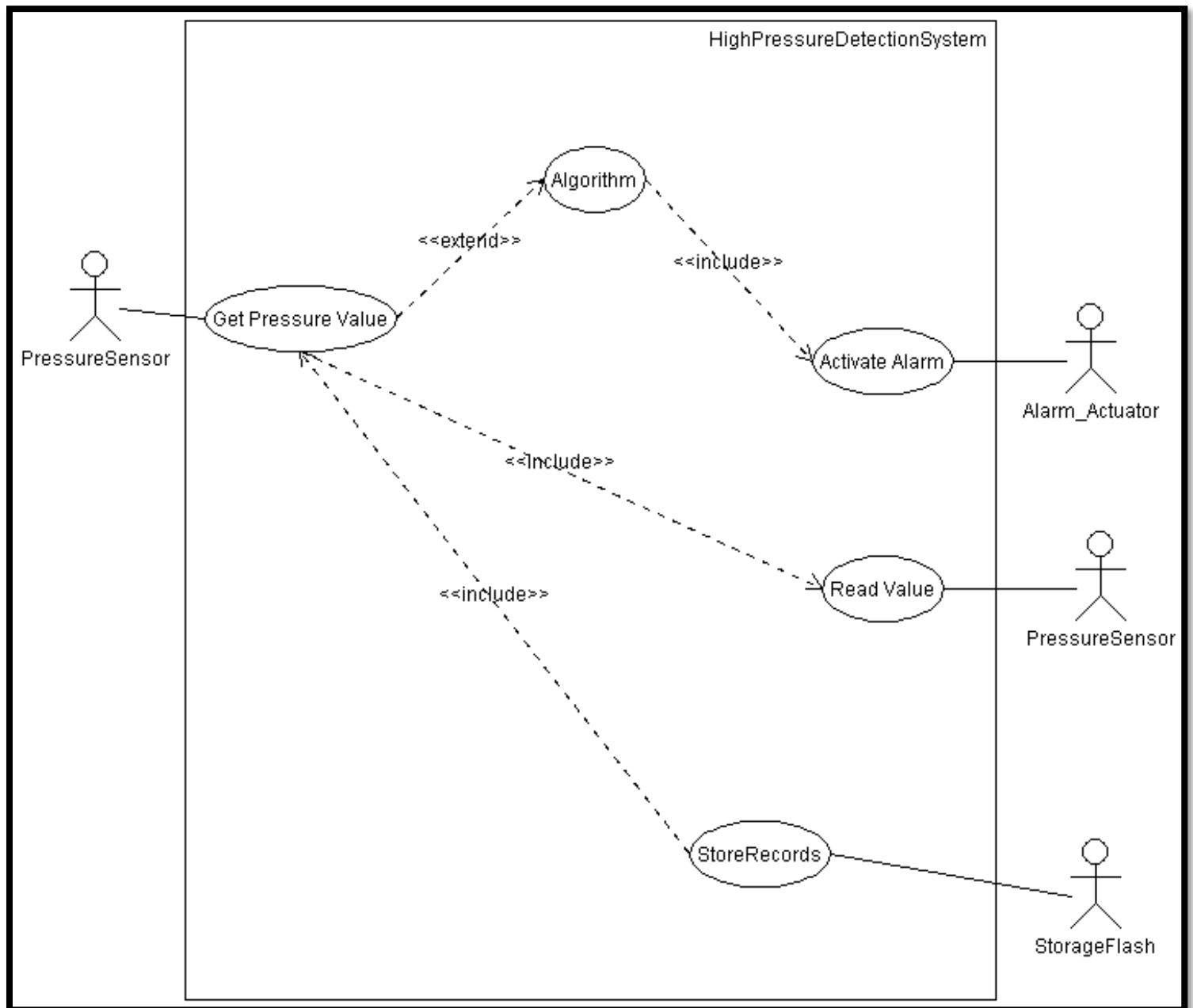
#### Version 2.0

- External flash memory is supported.
- Measured values can be saved on the flash memory.

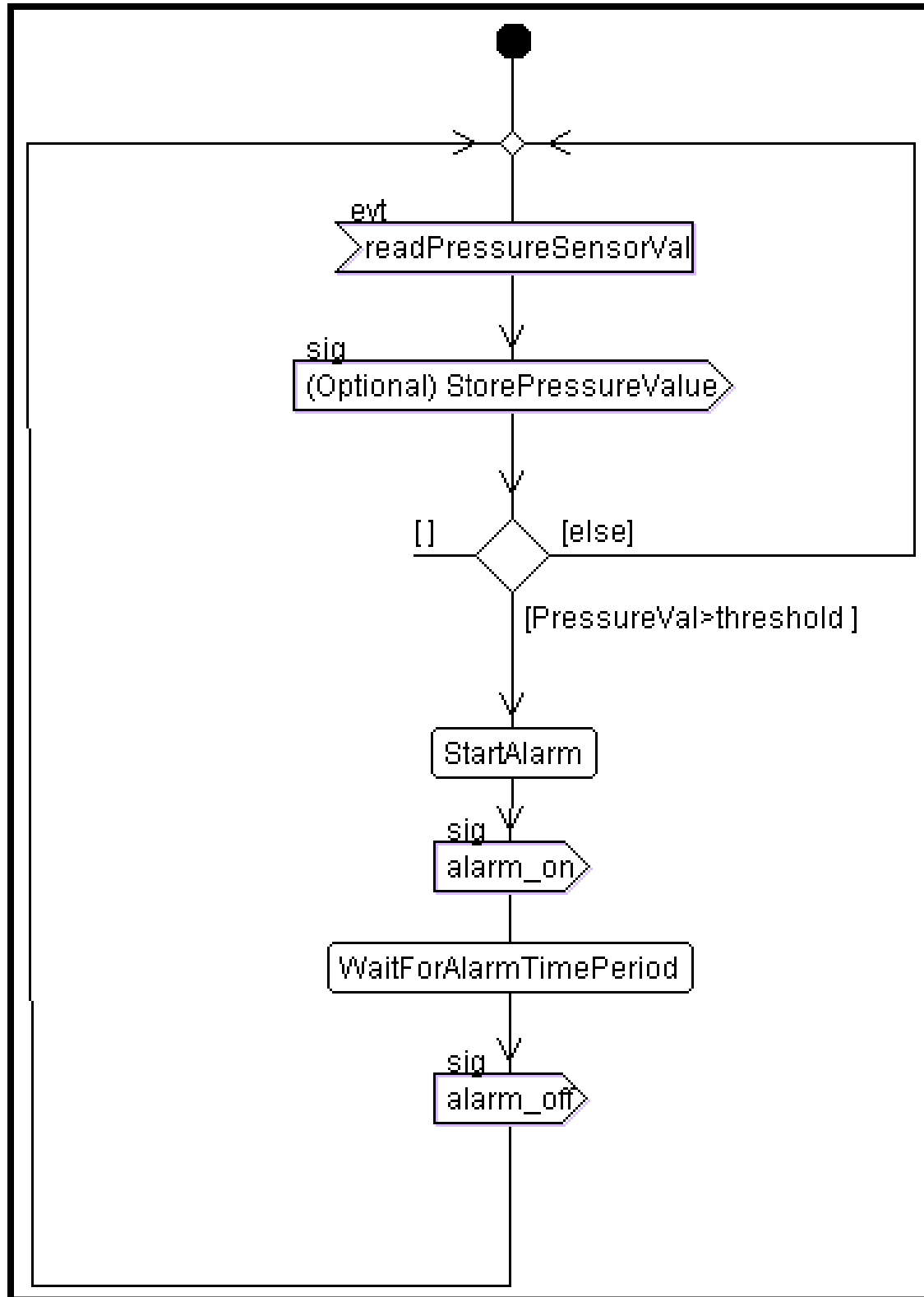
# Requirement Diagram



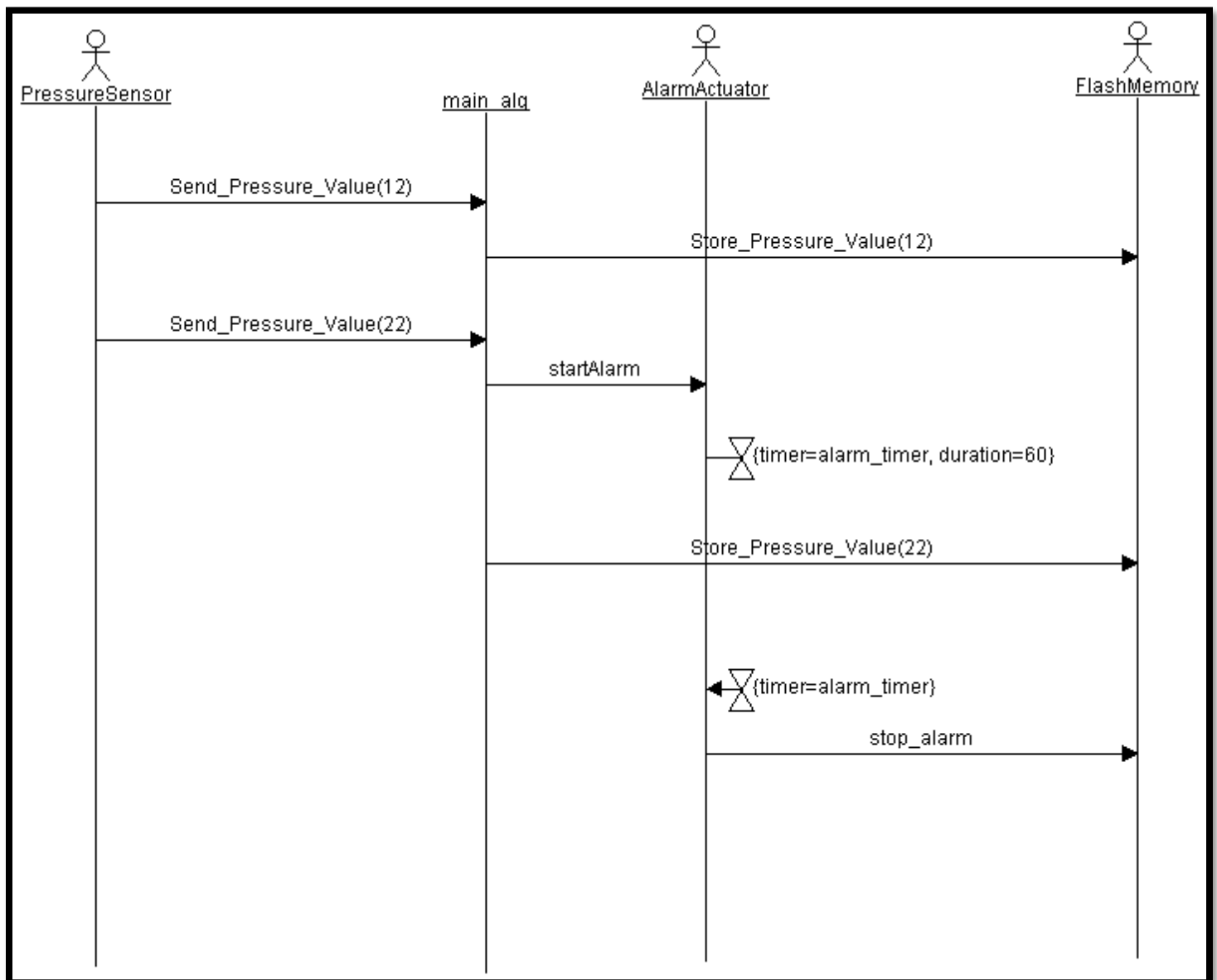
# Use Case Diagram



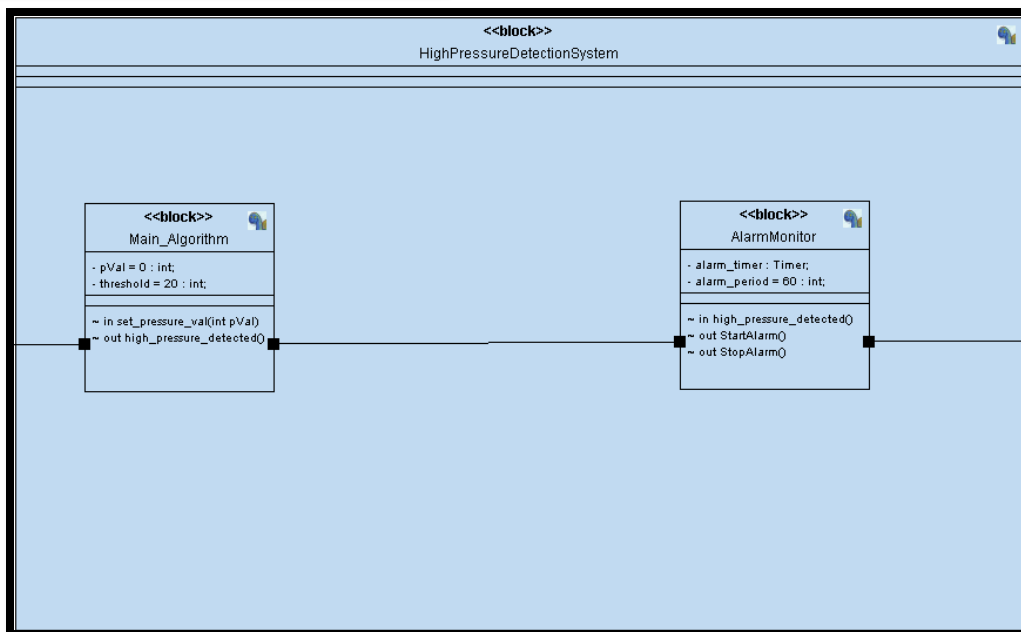
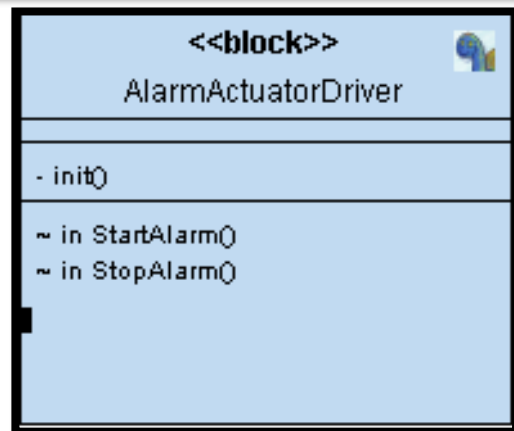
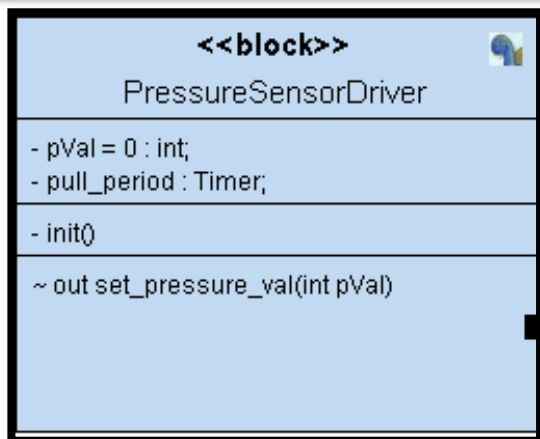
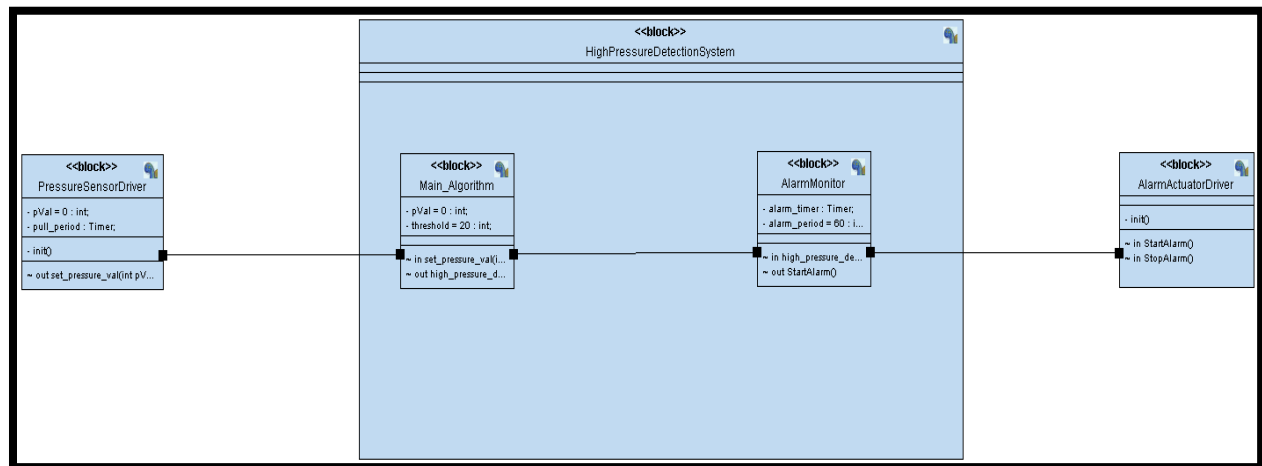
# Activity Diagram



# Sequence Diagram

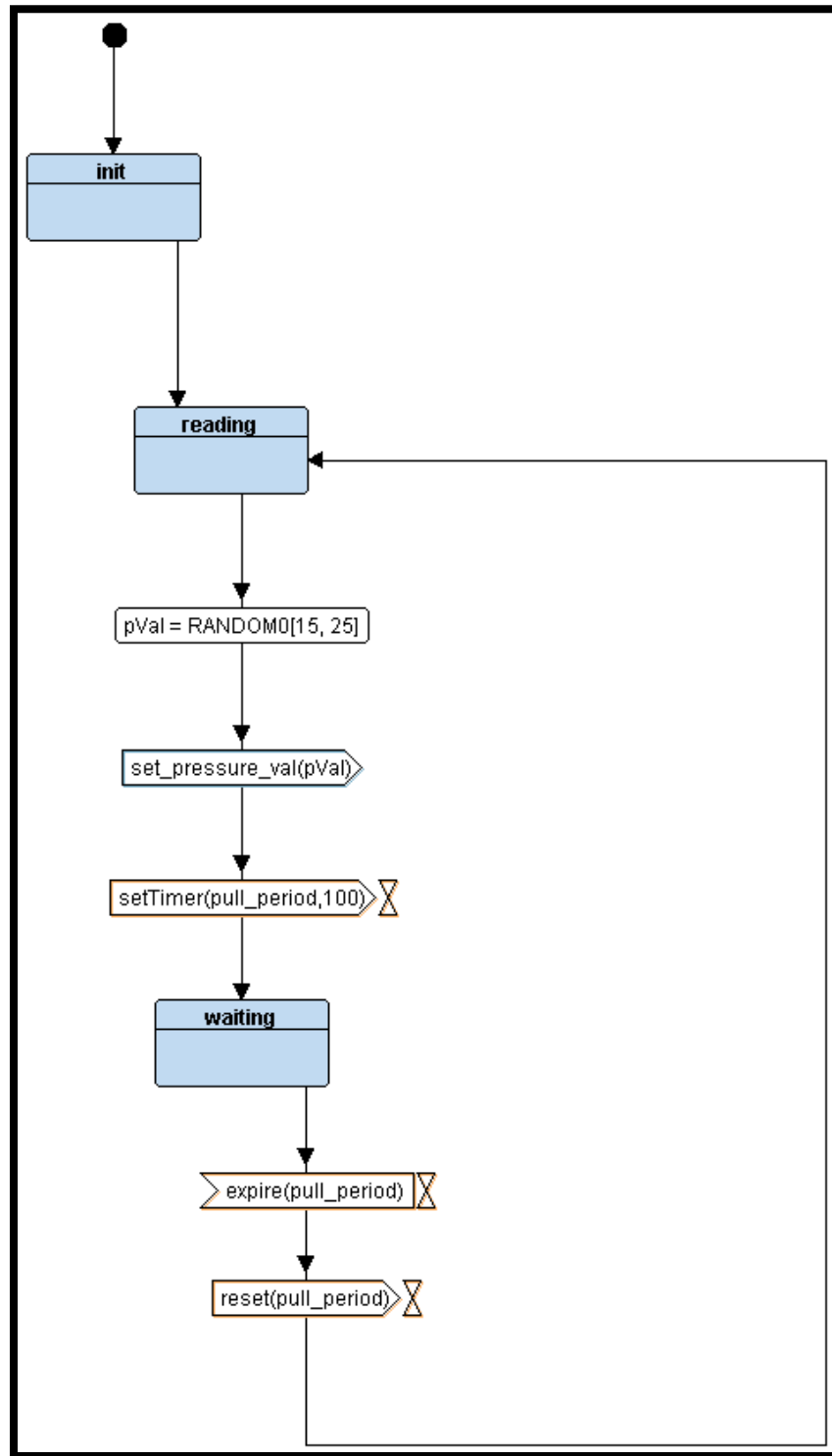


# Class Diagram

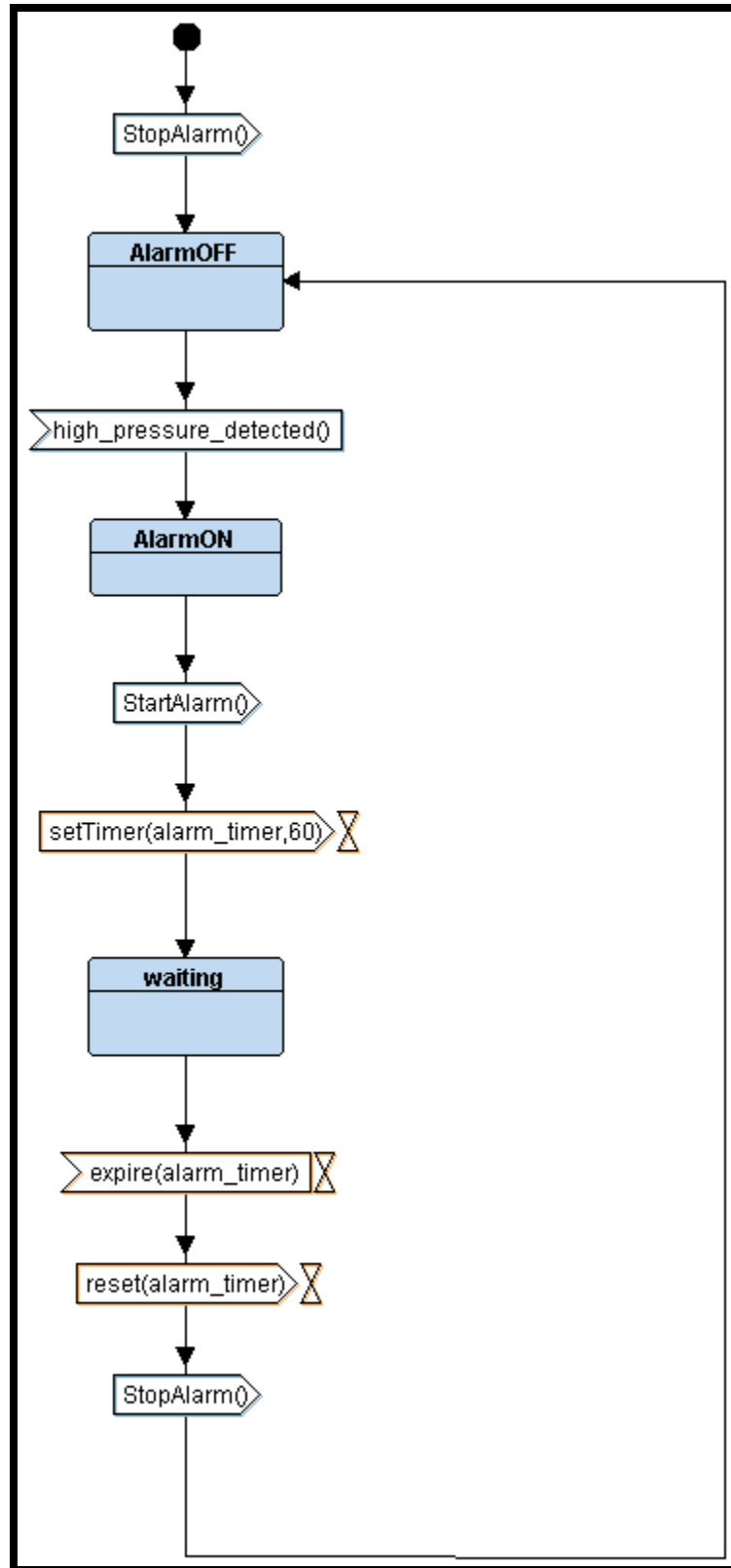




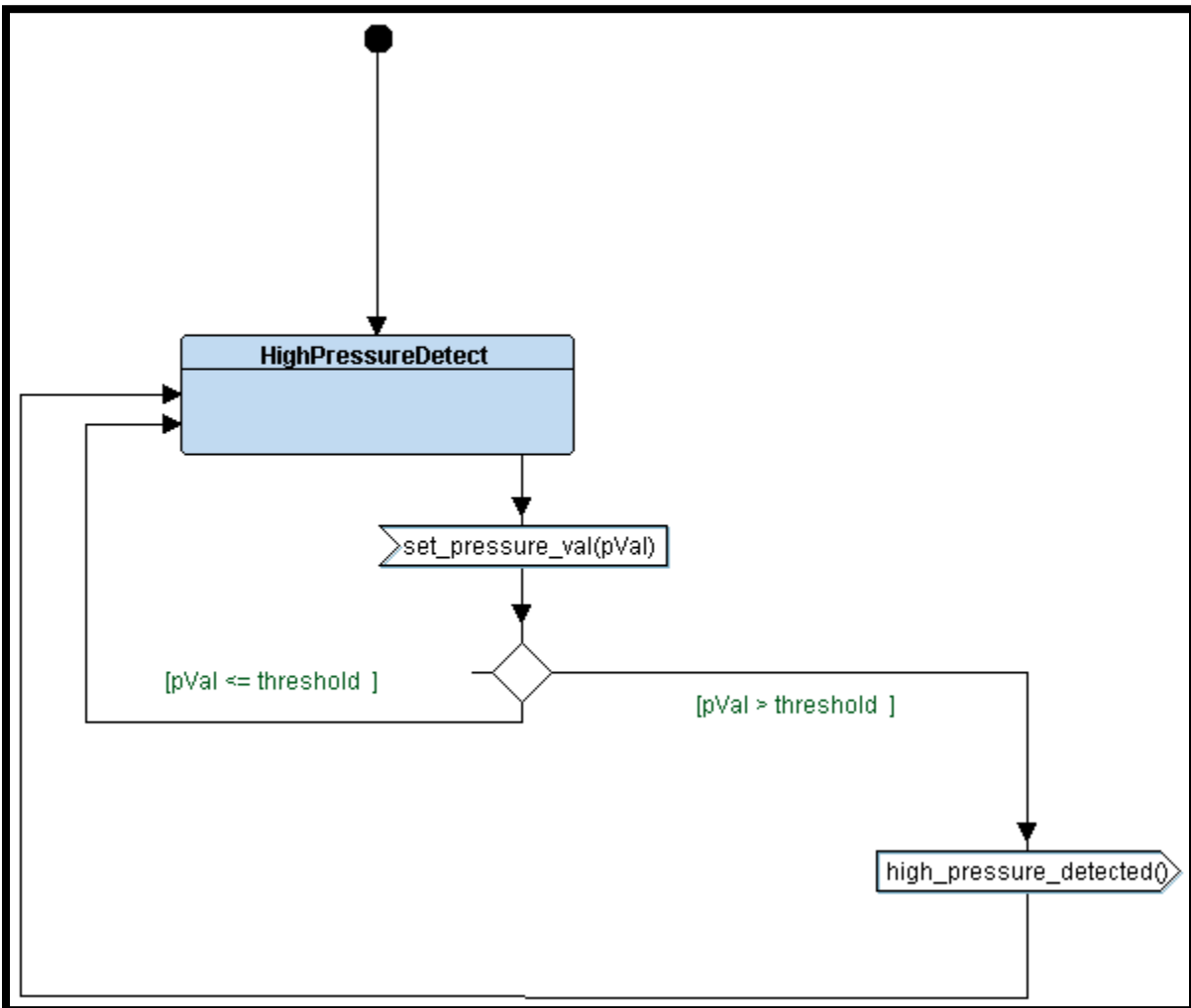
# PressureSensorDriver State Diagram



# AlarmActuatorDriver State Diagram



# MainAlgorithm State Diagram



# AlarmMonitor State Diagram

