High Pressure Detector

Mark Ashraf William

Learn-in-depth.com

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01220674770

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Mark2001rko2001@gmail.com

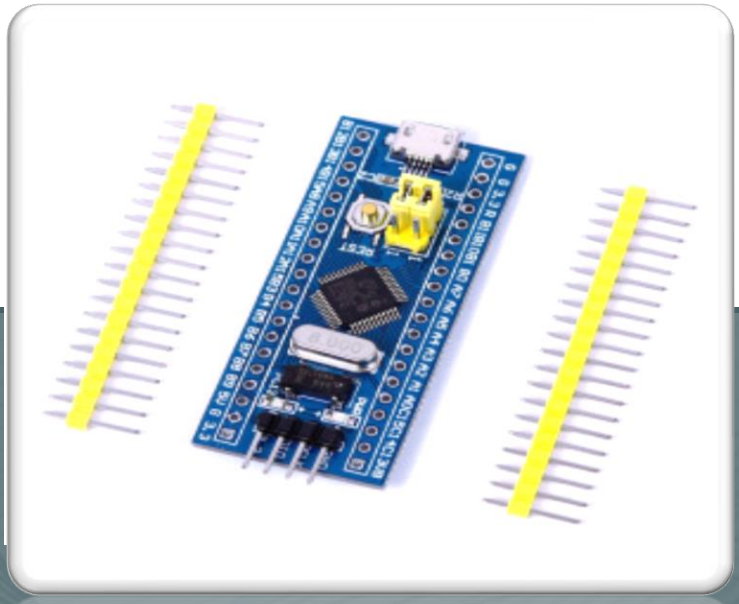
Case Study

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

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.

Versioning

Version 1.0

- sensor reads value and compares it against threshold.

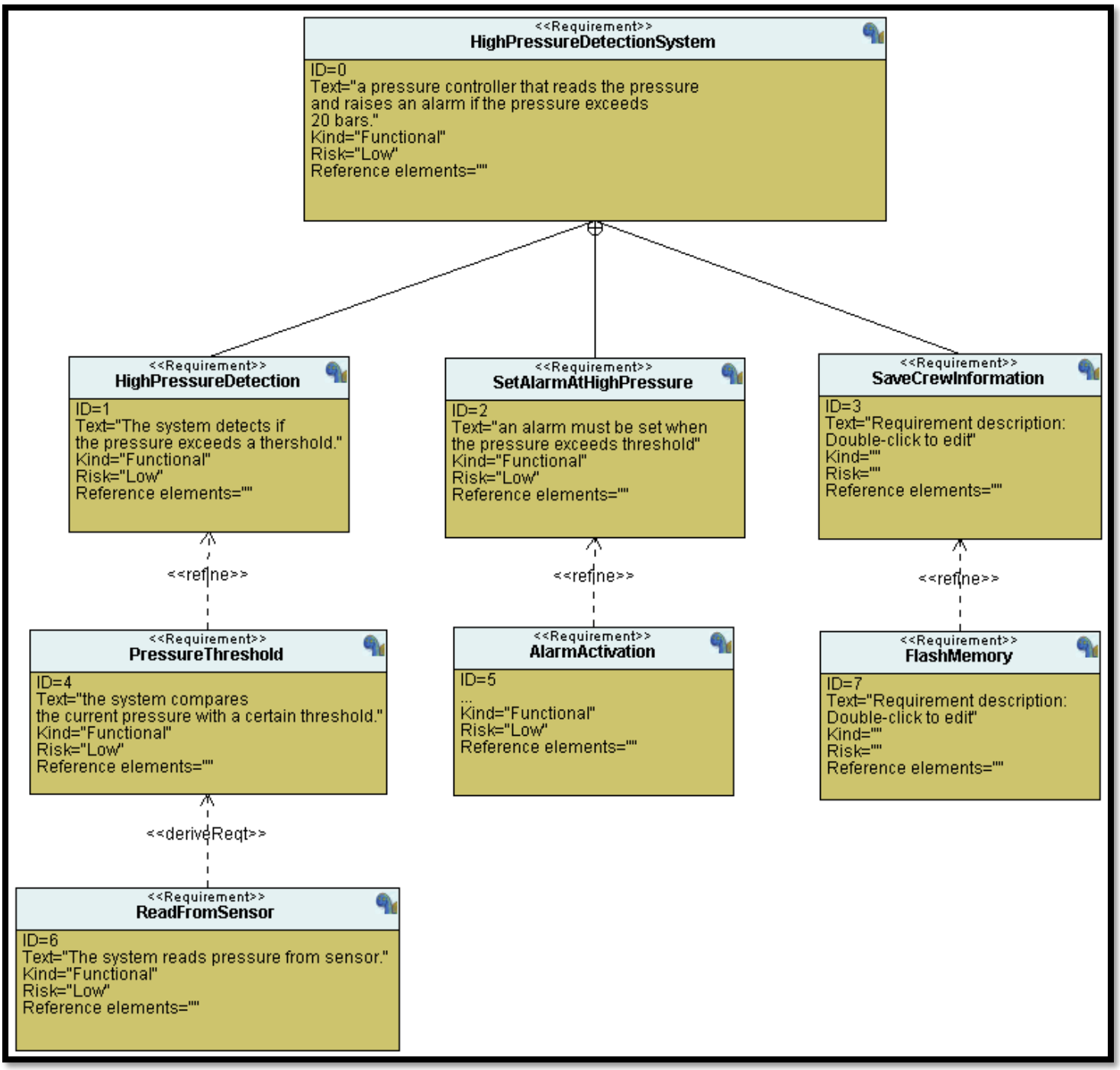
- LED will light up for 60 seconds if the alarm is above threshold.

Version 2.0

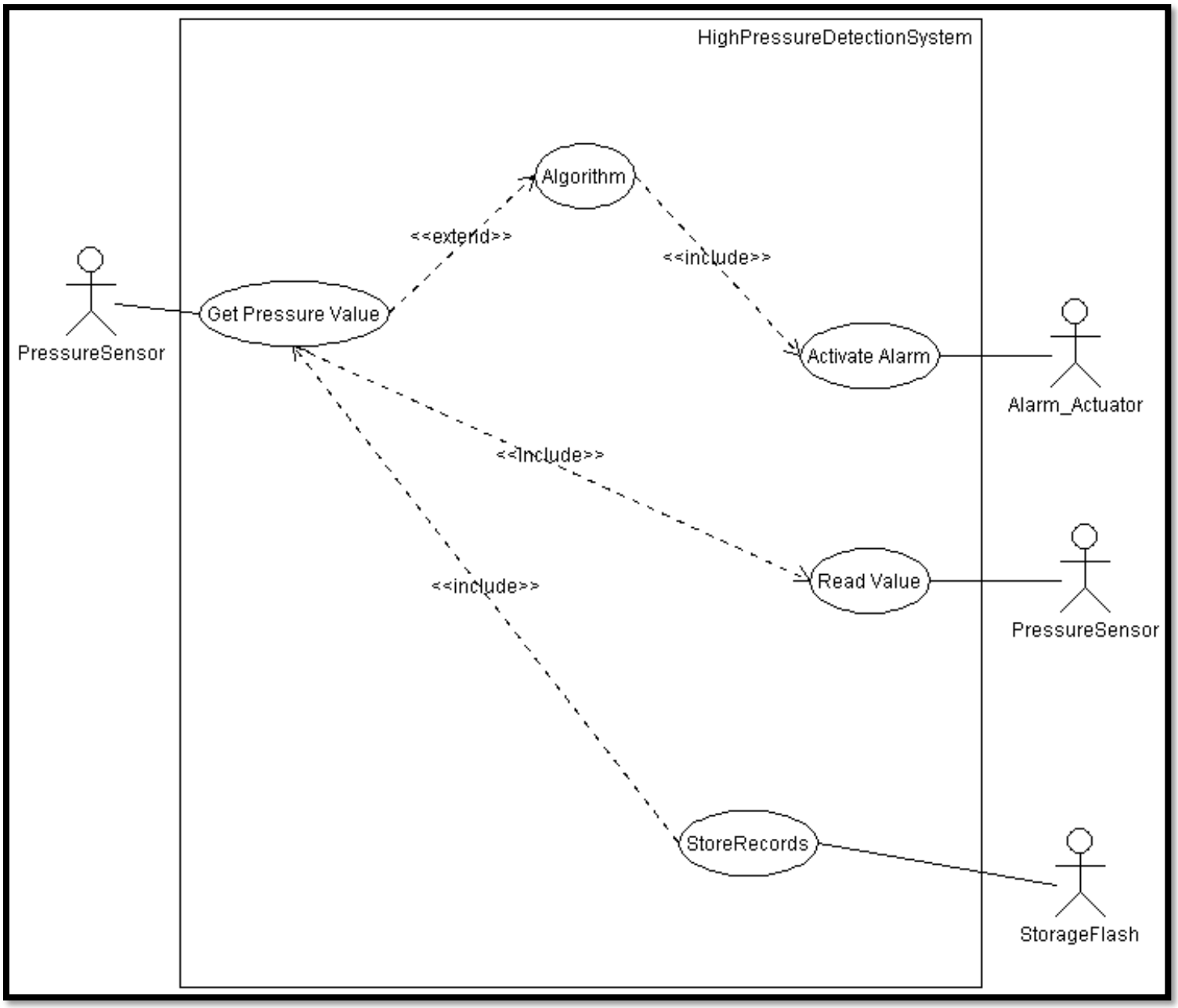
- External flash memory is supported.

- Measured values can be saved on the flash memory.

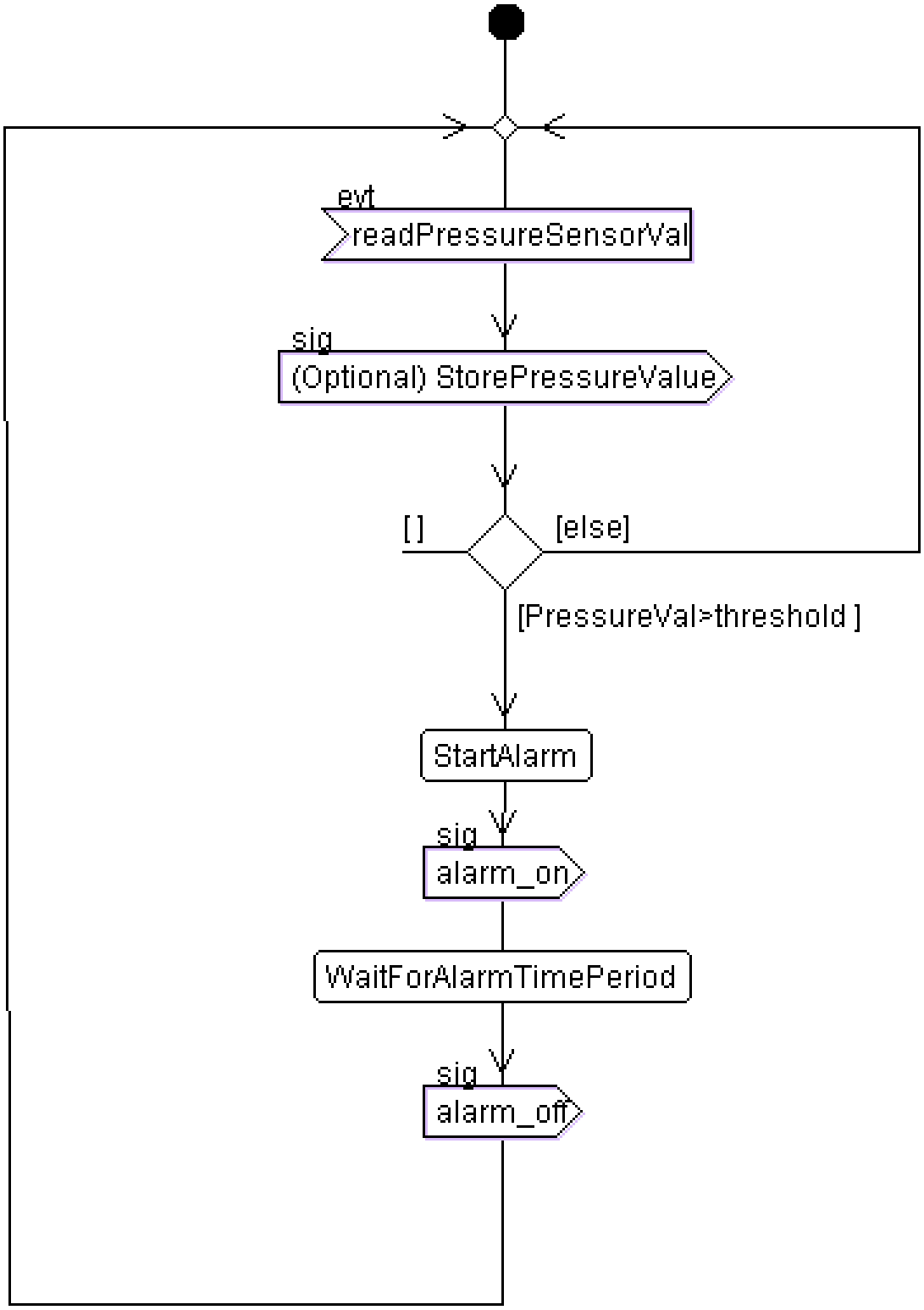
Requirement Diagram



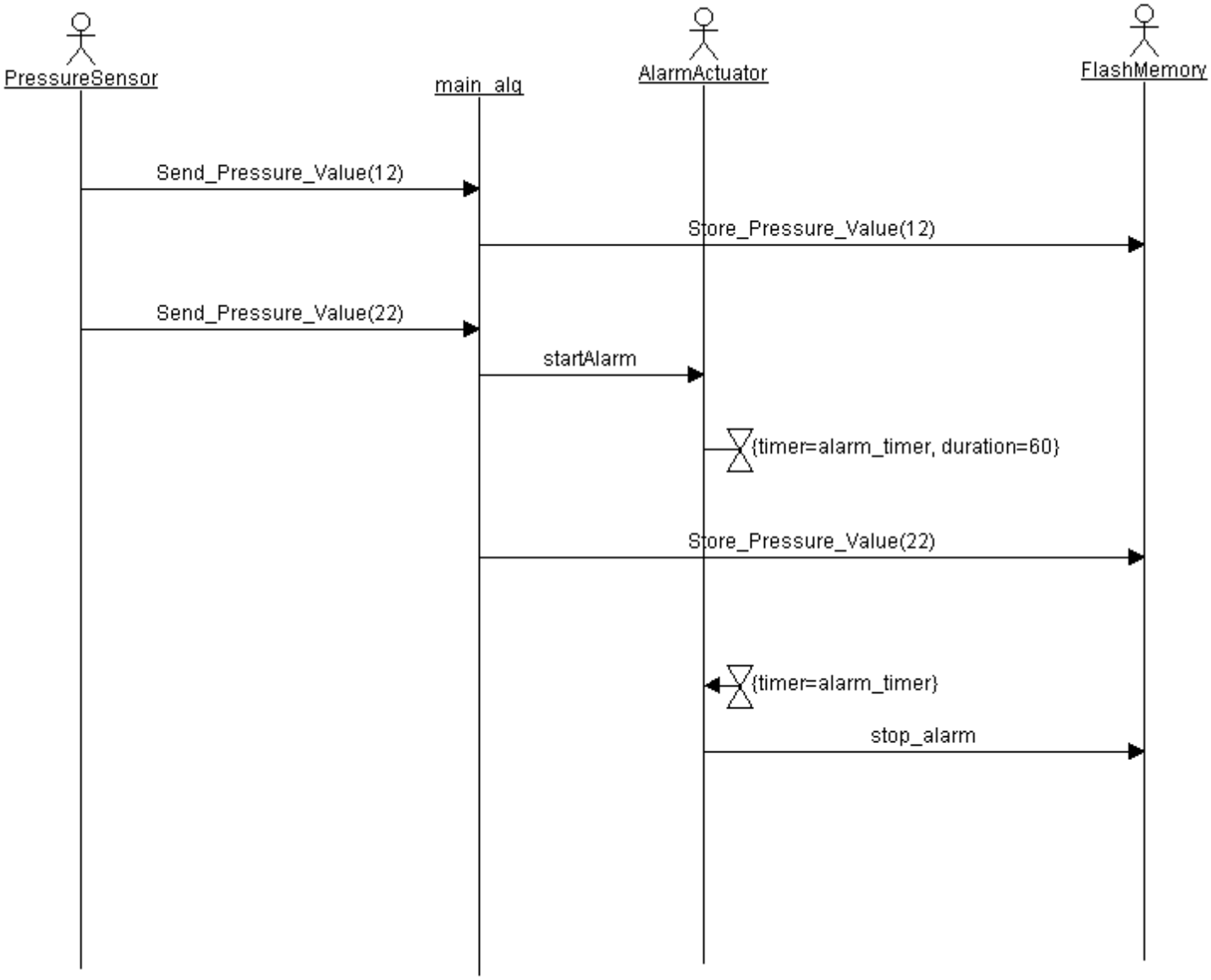
Use Case Diagram



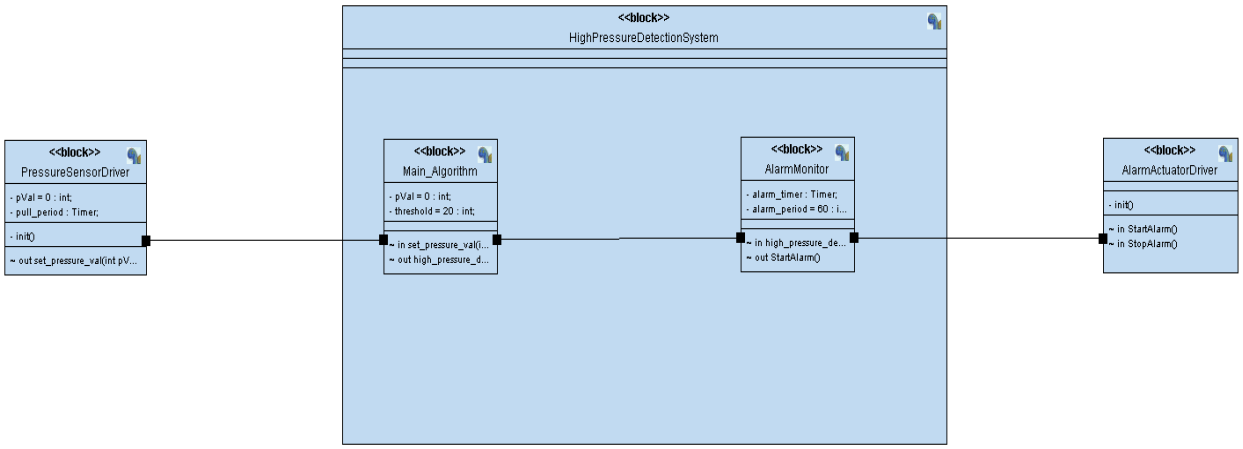
Activity Diagram

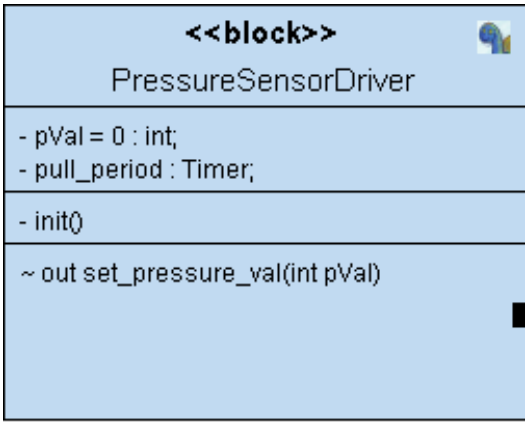


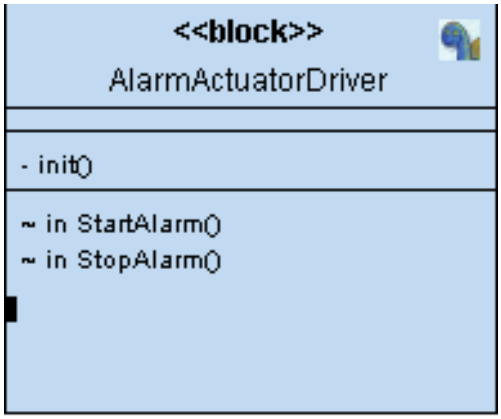
Sequence Diagram

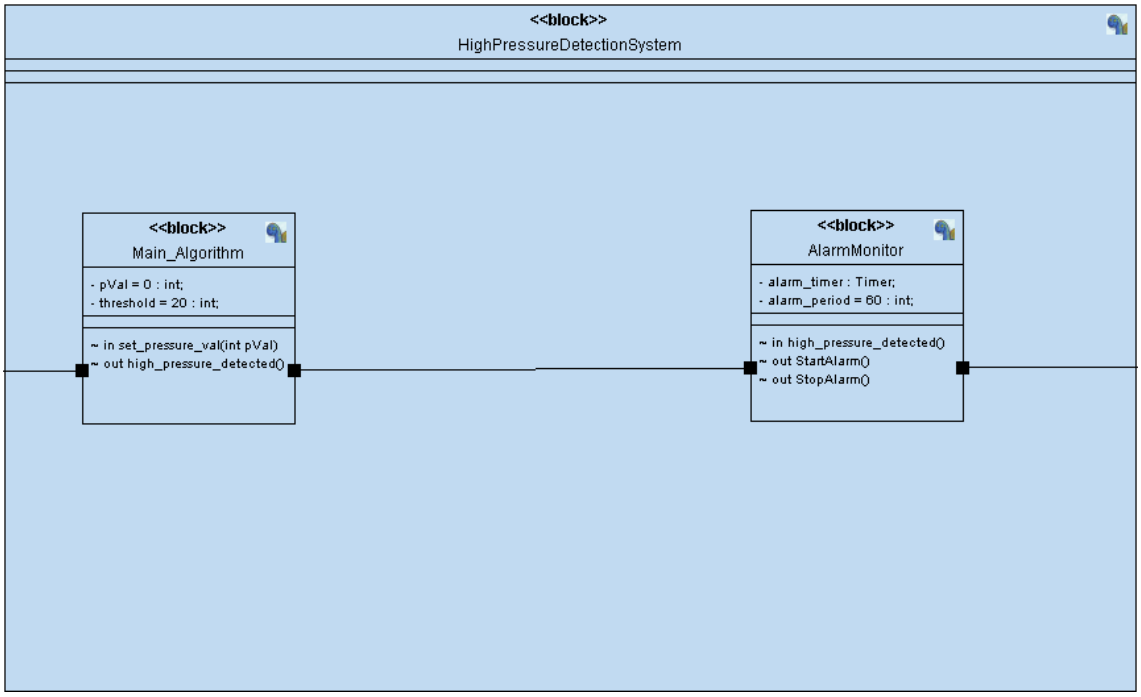


Class Diagram

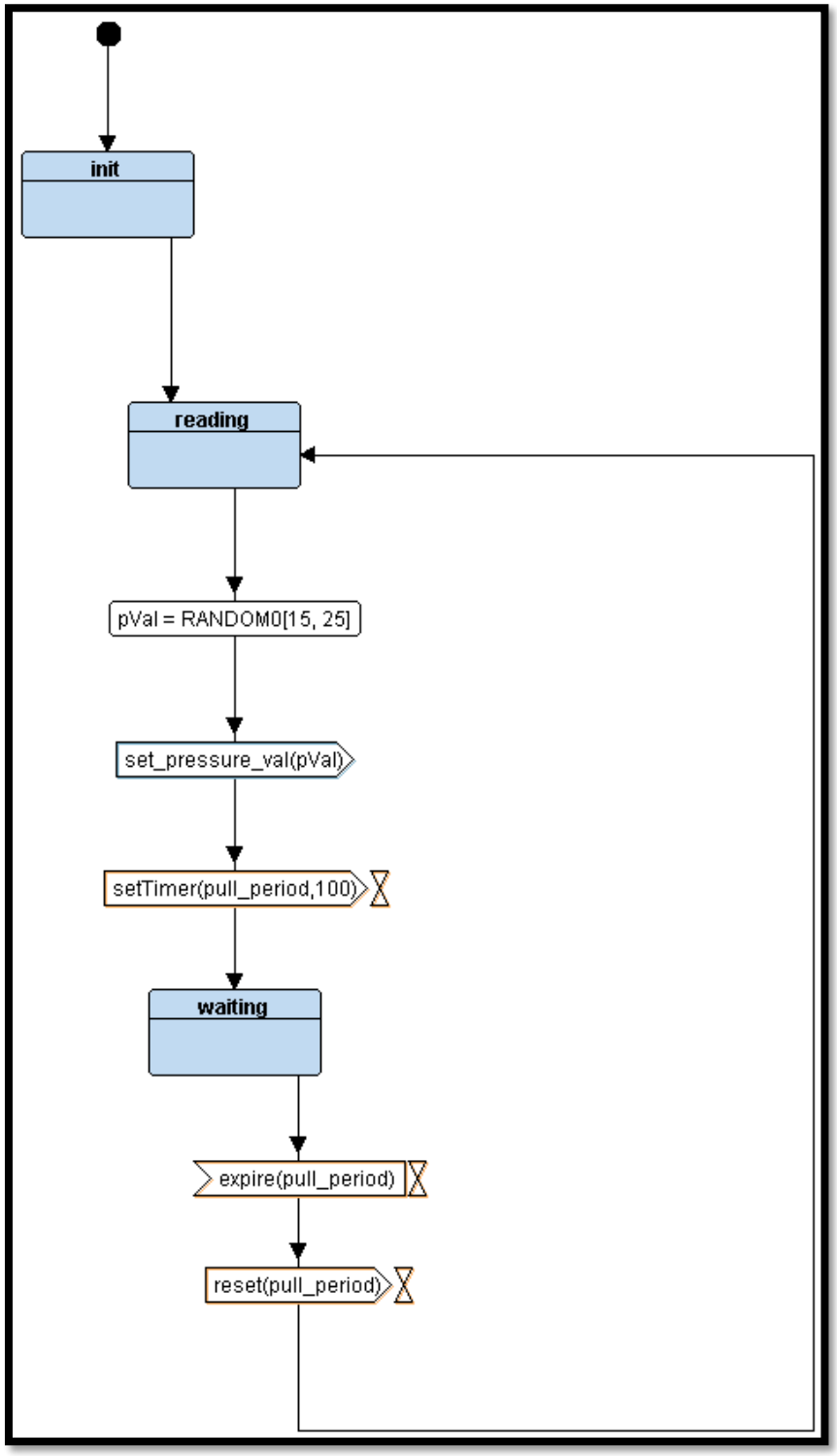




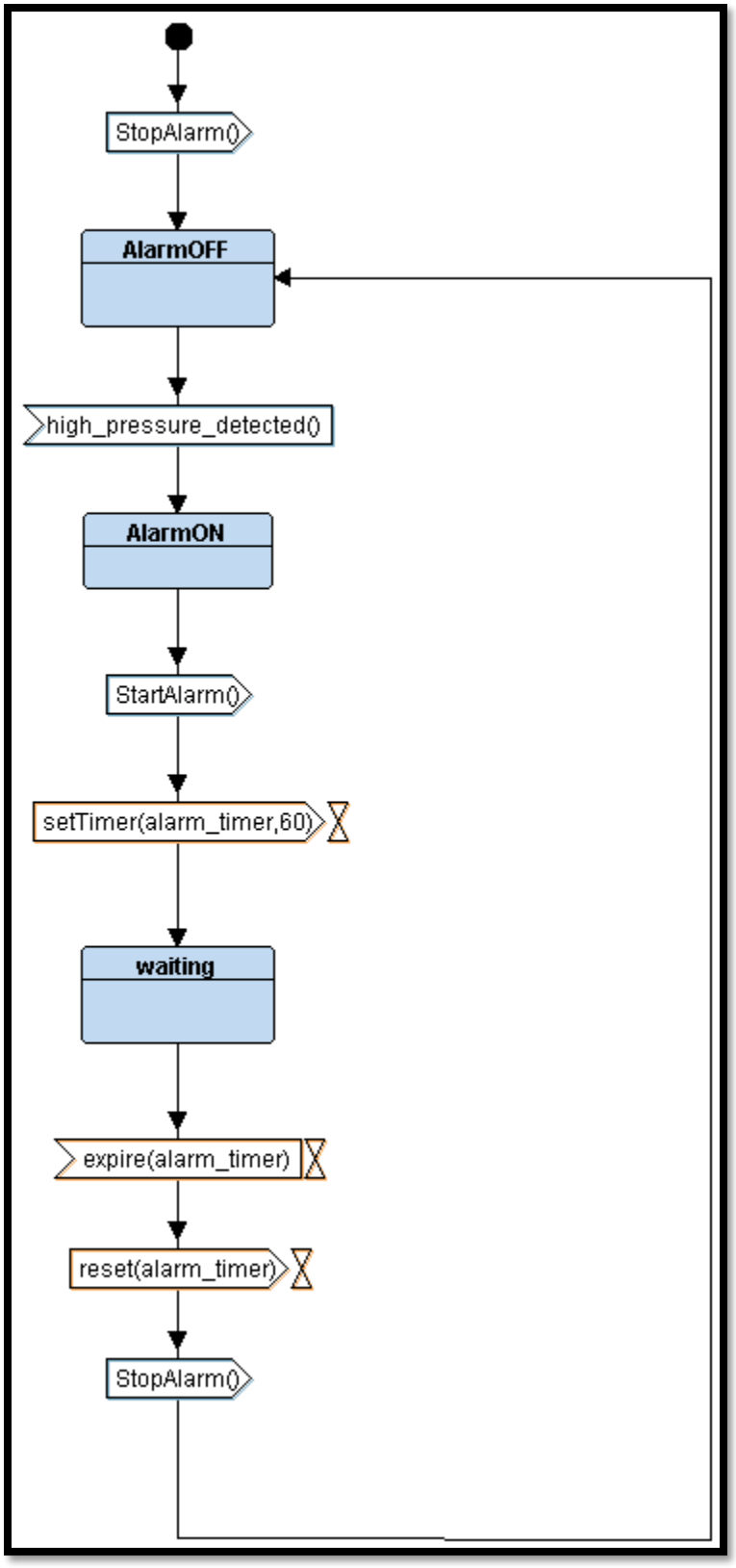




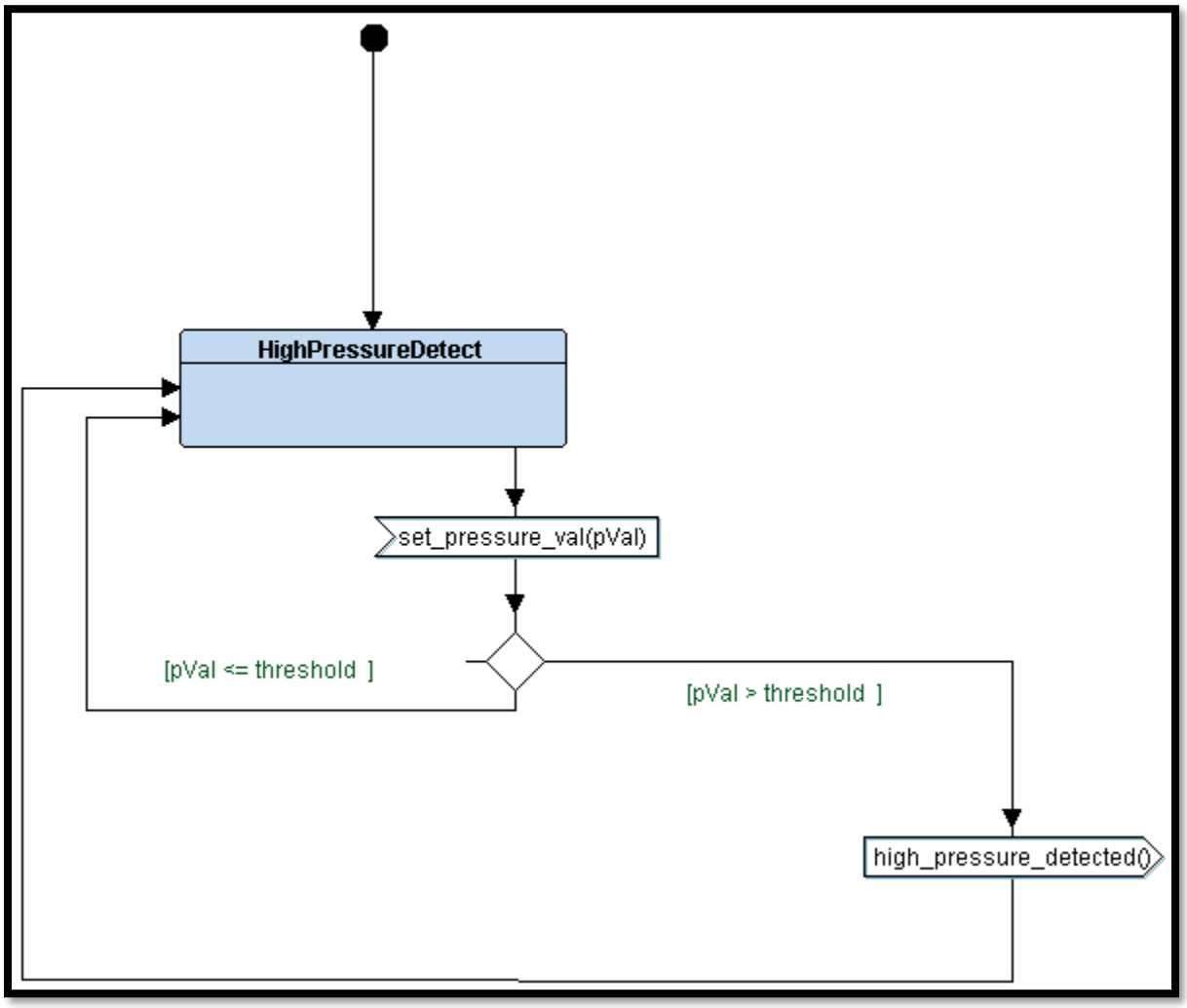
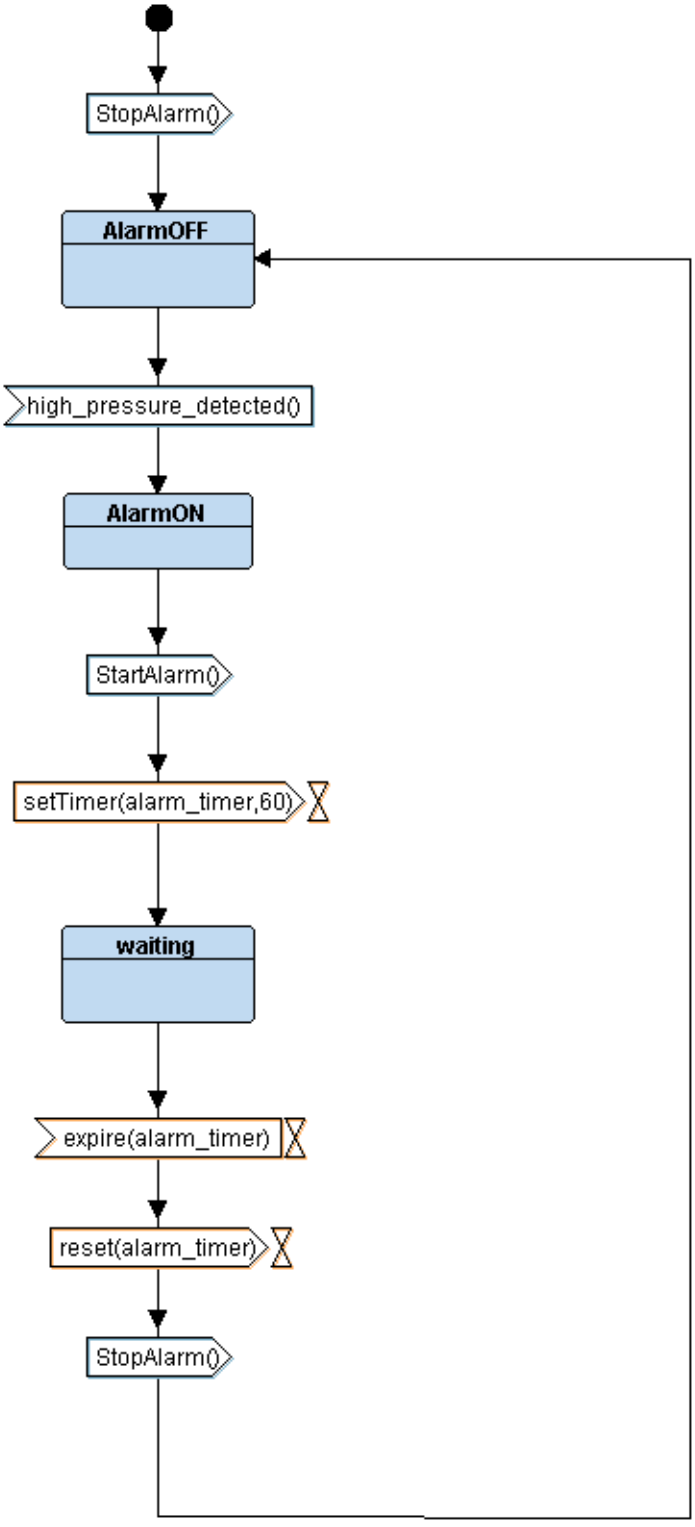
PressureSensorDriver State Diagram



AlarmActuatorDriver State Diagram



MainAlgorithm State Diagram



AlarmMonitor State Diagram