Main Sequence for Control Temperature use case

«subsystem»
:Control
Temperature

«event-driven»
«I/O device»
:Thermostat

Switch on
Temperature

«event-driven»
«I/O device interface»
:Thermostat
Interface

Write(Temperature)

Turn on heater
Turn off heater

Thermostat on
Heater turned on
Heater turned off

Turn on heater
Turn off heater

Record Turn on
Record Turn off

«entity»
:HeaterRecordLog

«demand»
«control»
:HomeControl

«entity»
:Current
Temperature

Read (out currentTemperature)

Enable

Turn on
Turn off

Read (out desTemperature)

«external timer»
:Temperature
Timer

TimerEvent

«periodic»
«timer»
:Temperature
Timer

TimerEvent

«periodic»
«algorithm»
:Temperature
Algorithm

«entity»
:Desired
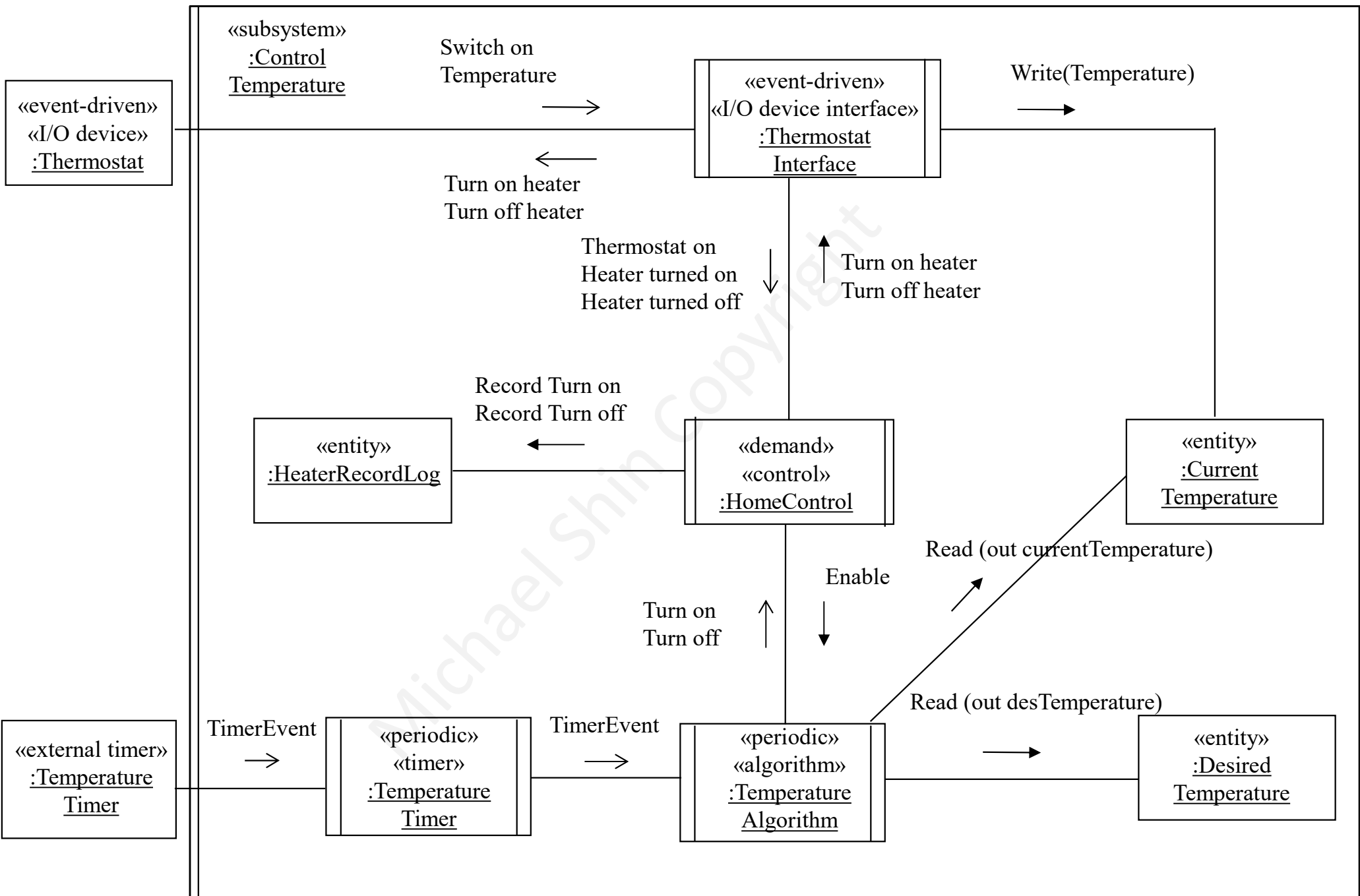Temperature

Thermostat Interface task interface

- **Name**: Thermostat interface task
- **Structuring criteria**: role: I/O device interface; concurrency: event-driven
- **Task interface**

  Task inputs:

  Event input: Thermostat external interrupt

  External input: Switch on, Temperature external

  Synchronous message communication without reply:

  - Turn on heater
  - Turn off heater

  Task outputs:

  External output: Turn on heater, Turn off heater

  Asynchronous message communication:

  - Thermostat on
  - Heater turned on
  - Heater turned off