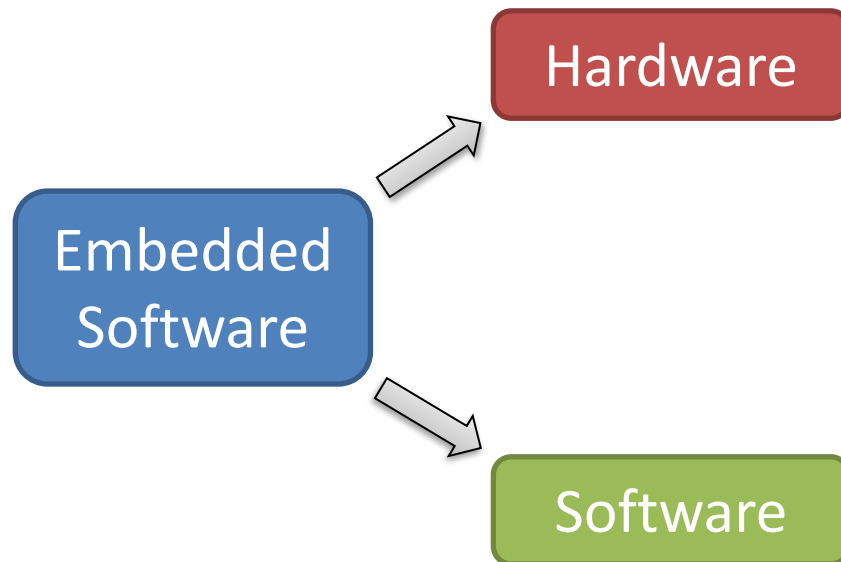# Embedded Software

Networks and Embedded Systems

Second Grade Level

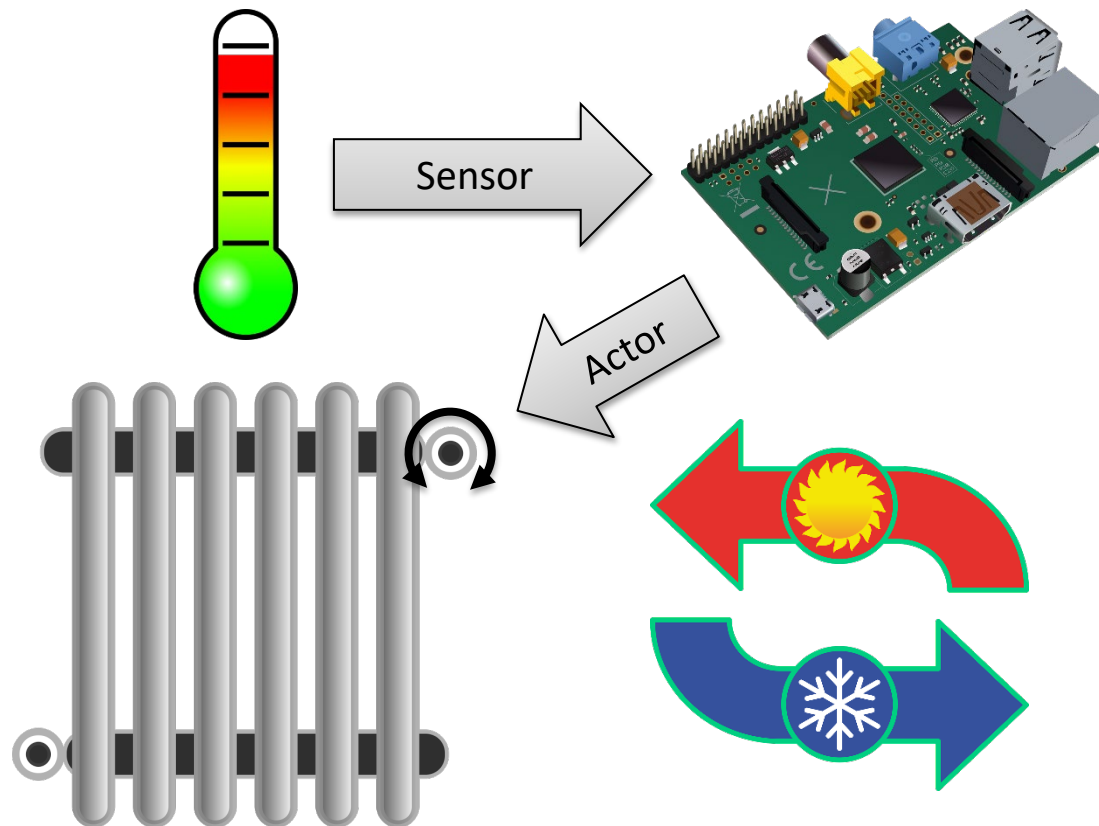Wolfgang Neff

Embedded Software (1)

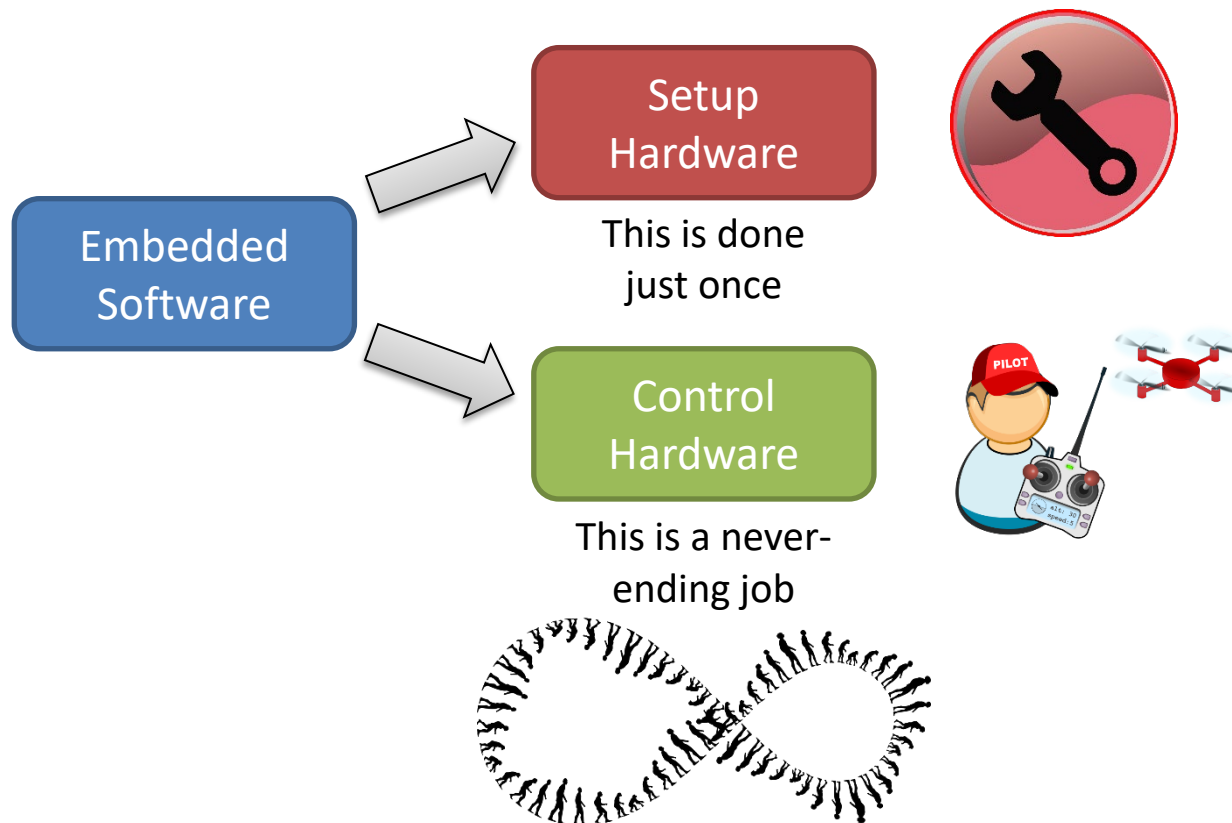- What is embedded software?

Embedded Software (2)

- Example: heating control

Sensor

Actor

Embedded Software (3)

- What does embedded software do?

Embedded Software → Setup Hardware

This is done just once

Embedded Software → Control Hardware

This is a never-ending job

Embedded Software (4)

- Arduino's point of view


```
// The setup function runs once
void setup() {
  // Setup hardware
}

// The loop function runs forever
void loop() {
  // Do the control job
}
```
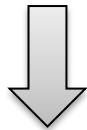
Embedded Software (5)

- C's point of view

```c
int main(void)
{
  // Setup hardware
  for (;;) {
    // This is an infinite loop
    // Do the control job
  }
}
```

Embedded Software (6)

- Arduino's way with C


```c
void setup() {
}
void loop() {
}
int main(void)
{
  // Setup hardware
  setup();
  for (;;) {
    // Do the control job
    loop();
  }
}
```