

CPS PERFORMANCE ISSUES

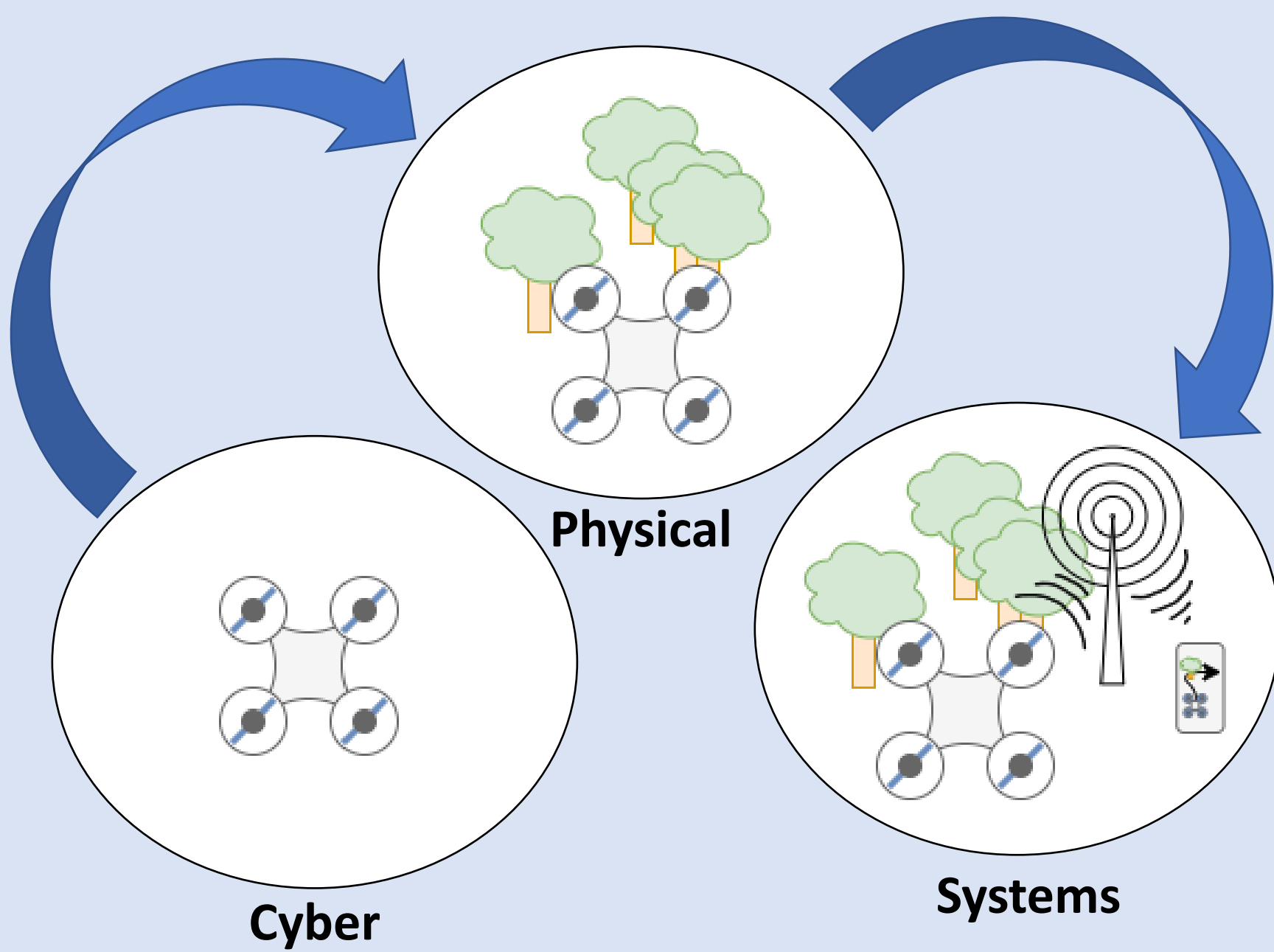


FROM PEBBLE TO AVALANCHE

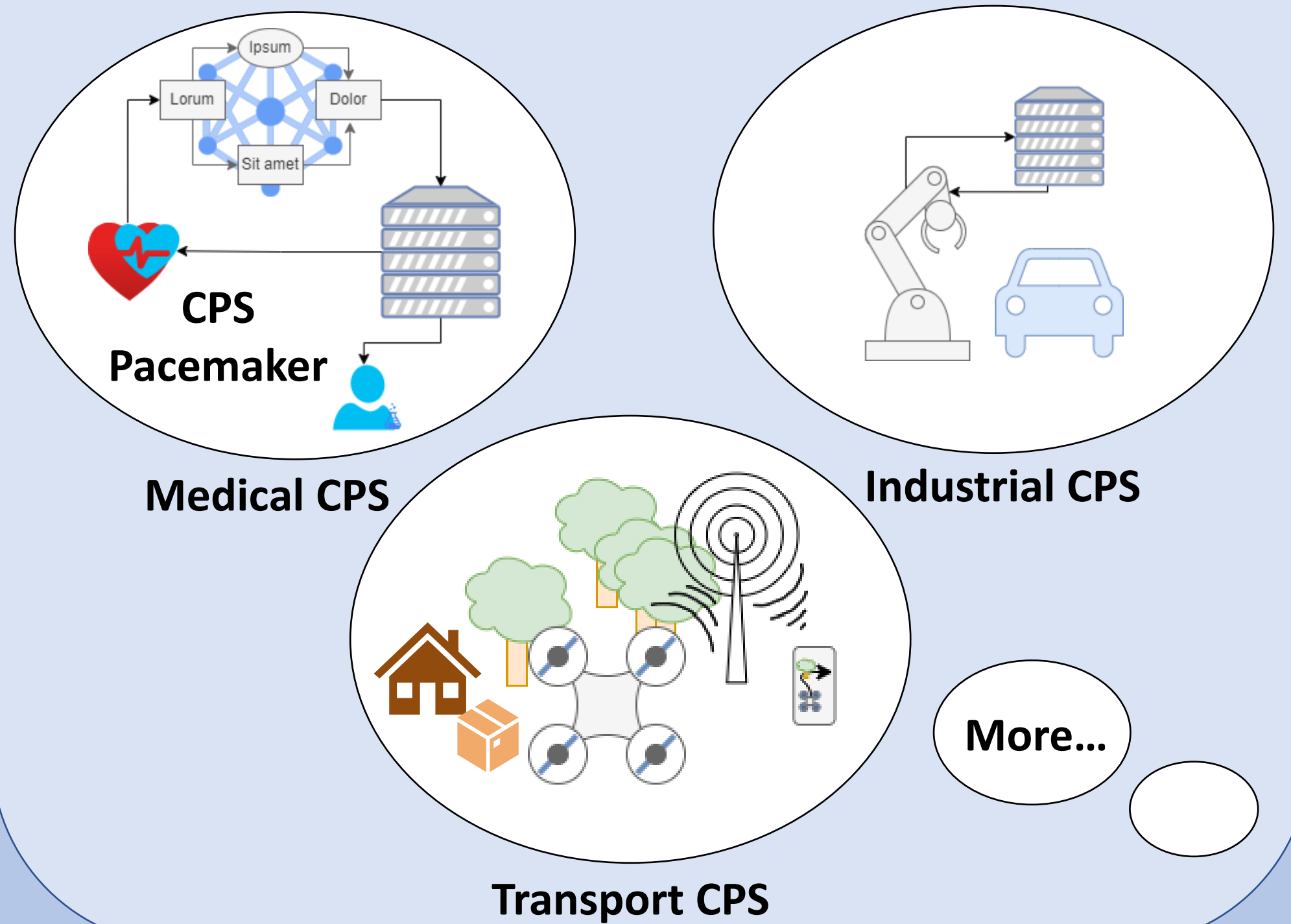
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Cyber-Physical Systems

What are **Cyber-Physical Systems**?

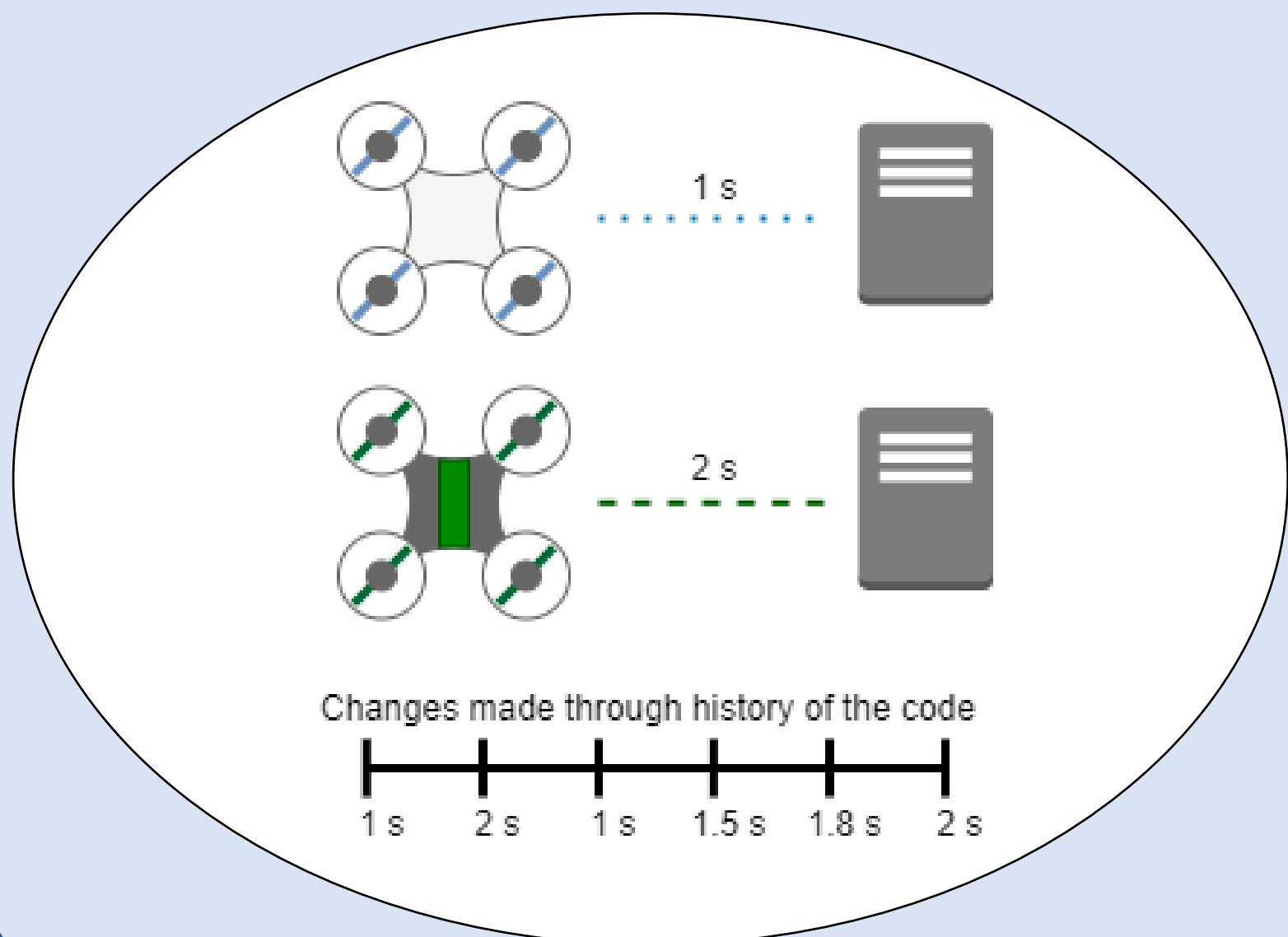


How does **Cyber-Physical Systems** impact our lives?



Magical Waiting Number Antipattern

From **small** to **massive** issues



What if?!

If this is being used for a **sensor** to detect an object, how much delay could this add?

Example: a sensor has a **response time of 80 ms**. To make the code general, we add a waiting time of 120 ms. Reducing its efficiency to 120 ms instead of 80 ms.

Data set

- **14 Open-Source CPS Projects on GitHub**
 - 5 Different programming languages.
 - Projects ranging from 54 to 35,537 commits.
- Detected the Magical Waiting Number Antipattern in:
 - 7 projects
 - total of **98 Instances**

Example

✓ viomi: Increase timeout for set_timezone
It looks like sometimes set_timezone takes ~10s to execute in some cases. We have time. Increase timeout so it doesn't take the entire connection down.
Closes #799
depau committed on Apr 5, 2021 commit 8487891a aee6fe483f68f9666b32aa7e3826be87

```
lib/robots/viomi/ViomiValetudoRobot.js
@@ -149,12 +149,12 @@ class ViomiValetudoRobot extends MioValetudoRobot {
149 149     super.onCloudConnected();
150 150
151 151     setTimeout(() => {
152 -     this.sendCommand("get_prop", ["timezone"]).then((res) => {
152 +     this.sendCommand("get_prop", ["timezone"], {timeout: 12000}).then((res) => {
153 153         if (res.length > 0) {
154 154             const timezone = res[0];
155 155             if (timezone !== 0) {
156 156                 // Set timezone to UTC
157 -     this.sendCommand("set_timezone", [0]).then(_ => {
157 +     this.sendCommand("set_timezone", [0], {timeout: 12000}).then(_ => {
158 158                 Logger.info("Viomi timezone adjusted to UTC");
159 159             });
160 160         }
}
```

<https://github.com/Hypfer/Valetudo/pull/806/commits/8487891a aee6fe483f68f9666b32aa7e3826be87>