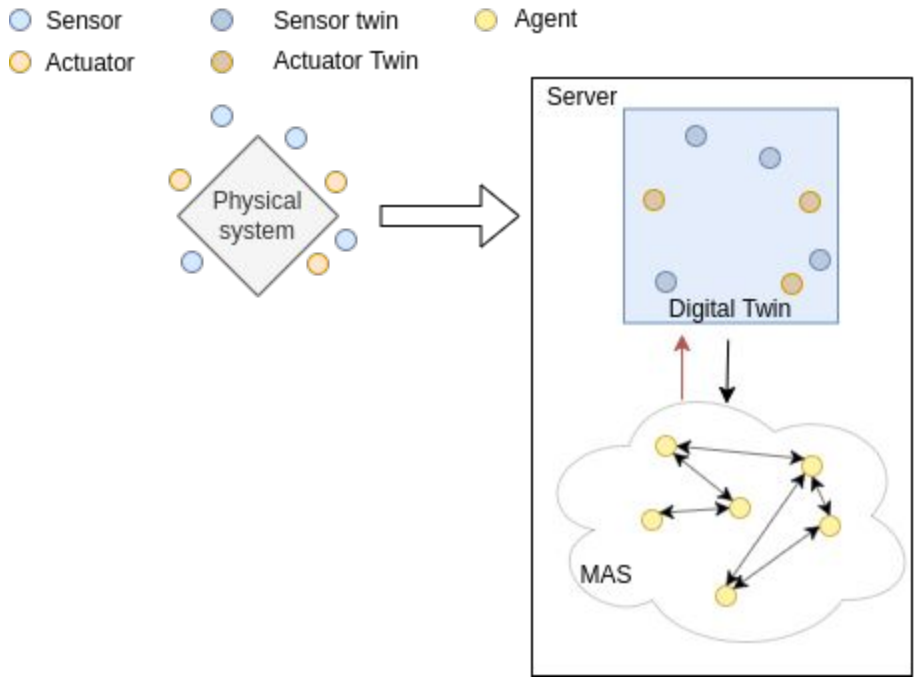
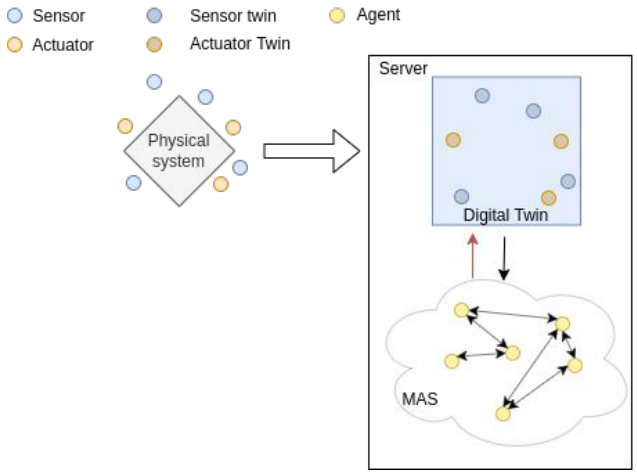
# Meeting 08/11


Sensor
Actuator
Sensor twin
Actuator Twin
Agent
Physical system
Server
Digital Twin
MAS

# Why?

- The DT is an interface making easier:
  - communication with real world
  - data gathering
- Granularity between DT and MAS algorithm is up to us -> MAS can have any shape we want
- MAS algorithm does not represent reality, it studies it -> no malicious agent per se



# Study case: VANETs

Network between **vehicles** and **road side units** (RSU) communicating between each other to manage road traffic.

Vulnerabilities:

- (D)DoS
- Physical attacks (side channel, fault injection…)
- **Routing/network attacks**
- MITM
- …

# Routing attacks

- Blackhole: one node of the network makes itself more attractive and then throw away all received packets

- Wormhole: two nodes of the network (often located at strategic points in the network) become able to communicate to each other whereas they shouldn’t

# Tool for MAS algorithm: Mesa

- Written in python
- Easy to input serialized data in it
- I can get help with it in the lab

# Tool for creating the Digital Twin

- Dataset for preliminary tests
- PTV

# Overleaf accesses

Pre-study: https://www.overleaf.com/3665614811tsrtrhdxfync

SOTA: https://www.overleaf.com/1322922344bmbkyprdvfrb

# Questions ?