# A cloud robotics architecture for an emergency management and monitoring service in a smart city environment

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# Fly4smartcity

Cloud computing + UAV

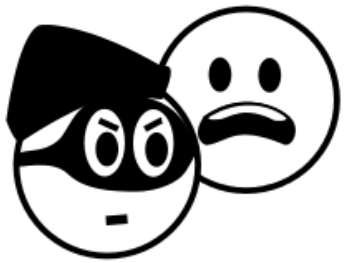
(Smart) city environment

OUT of the LAB

Why **UAV** ? Unstructured environment

Why **Cloud**? Distributed and  accessible

# The test case



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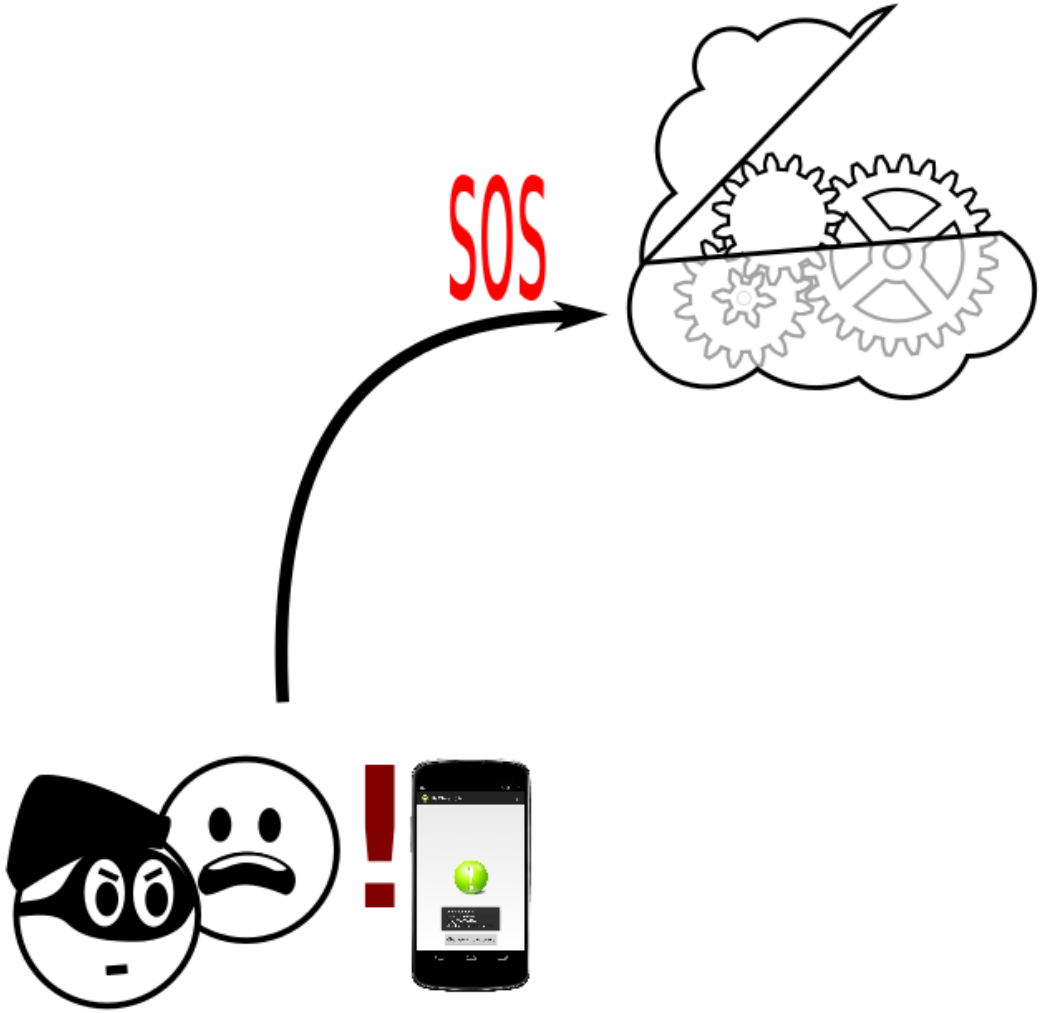

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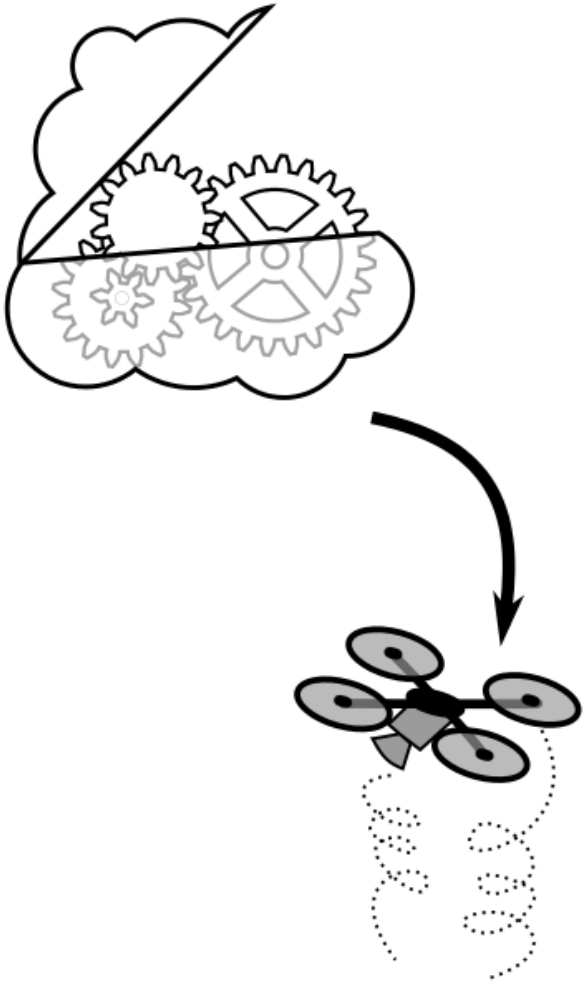

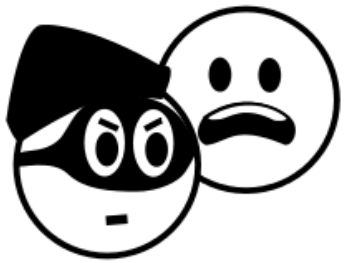

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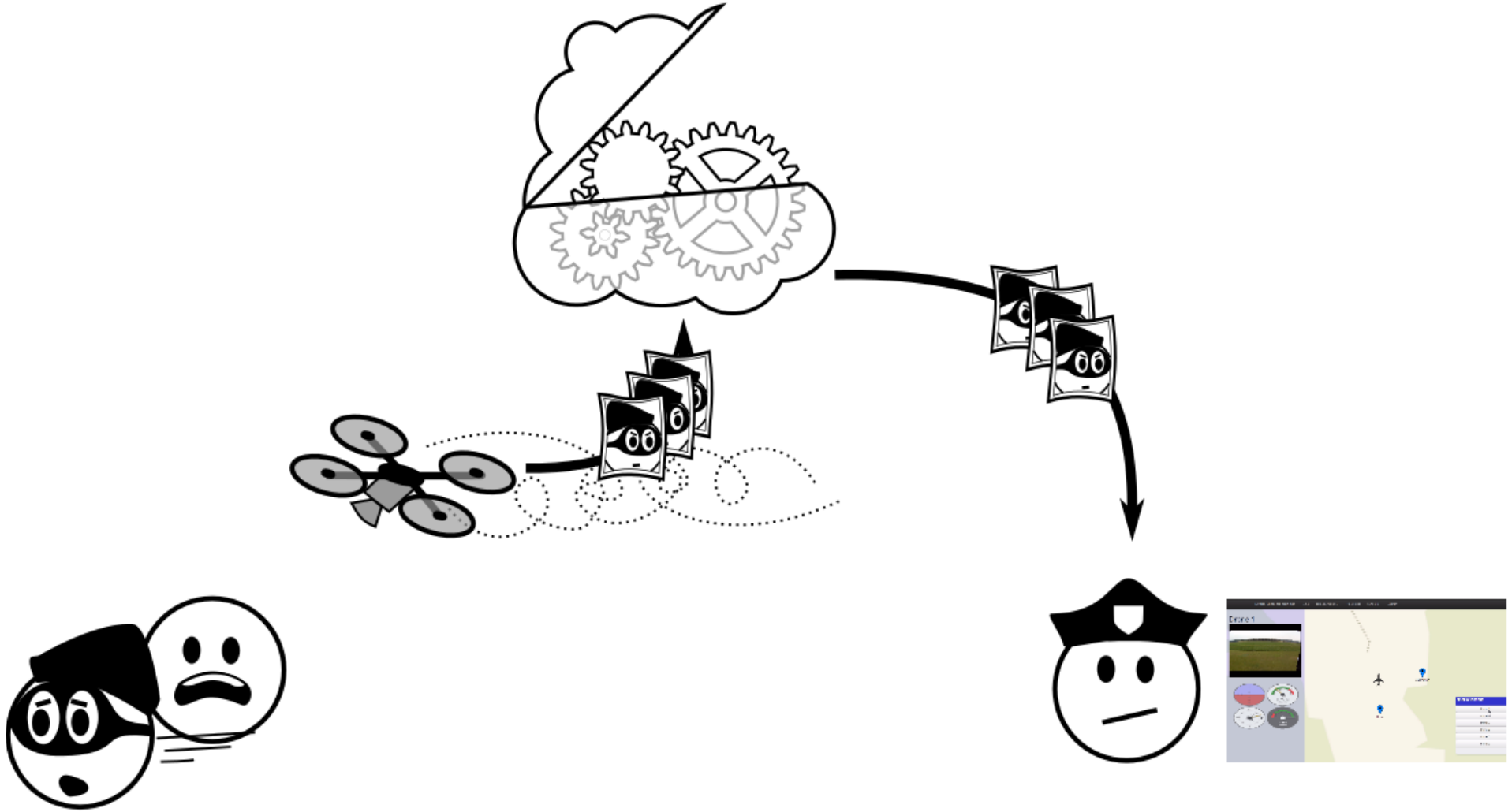

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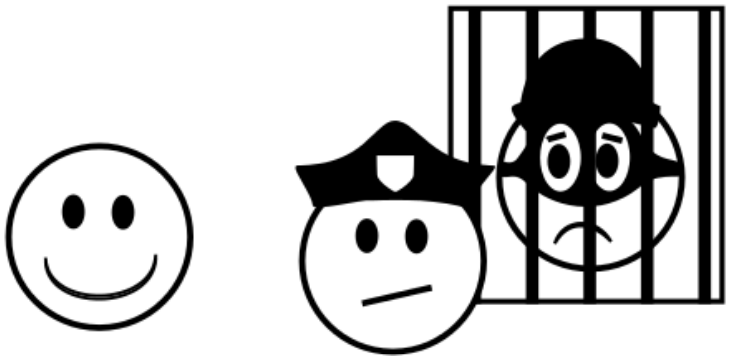
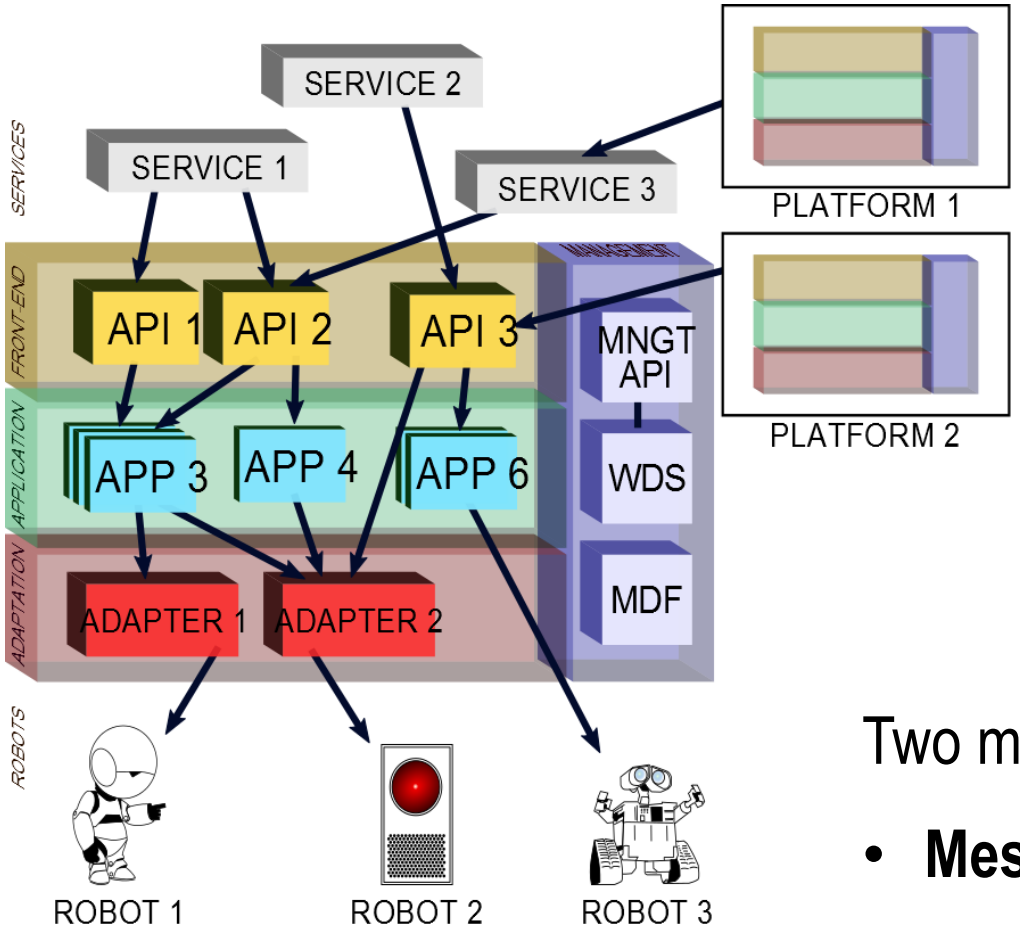


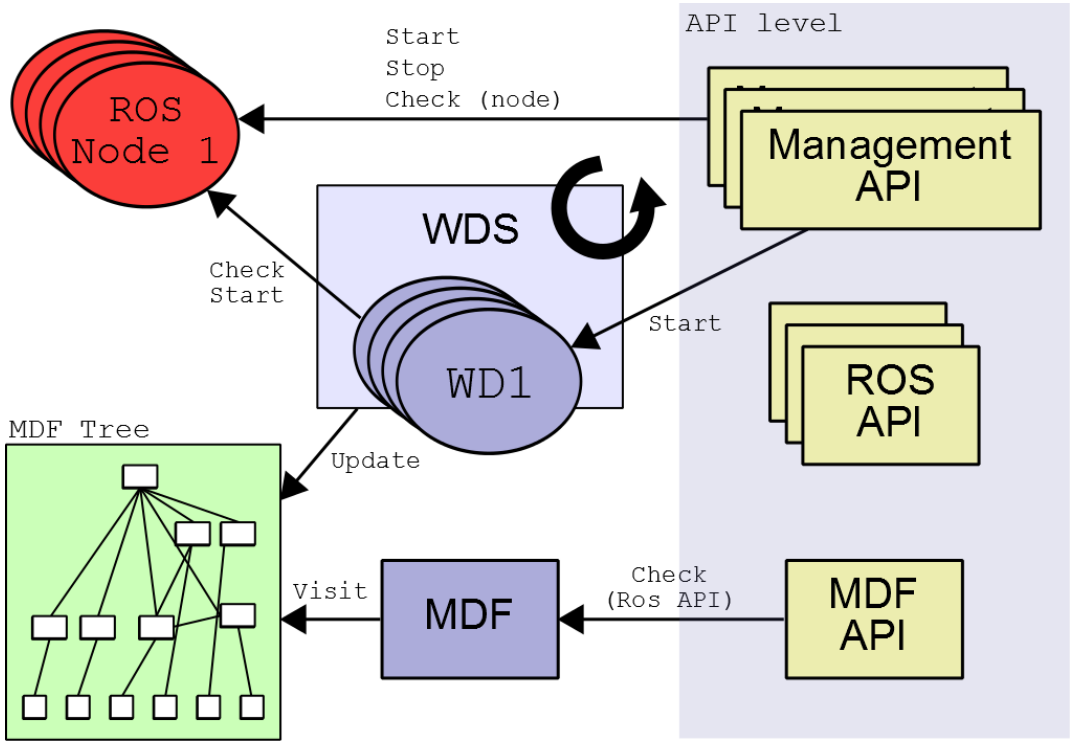
# The cloud architecture




Two modules added to ROS:

- **Message Discovery Function**
- **Watch Dog System**

# The cloud architecture




**Watch Dog System** (WDS) :

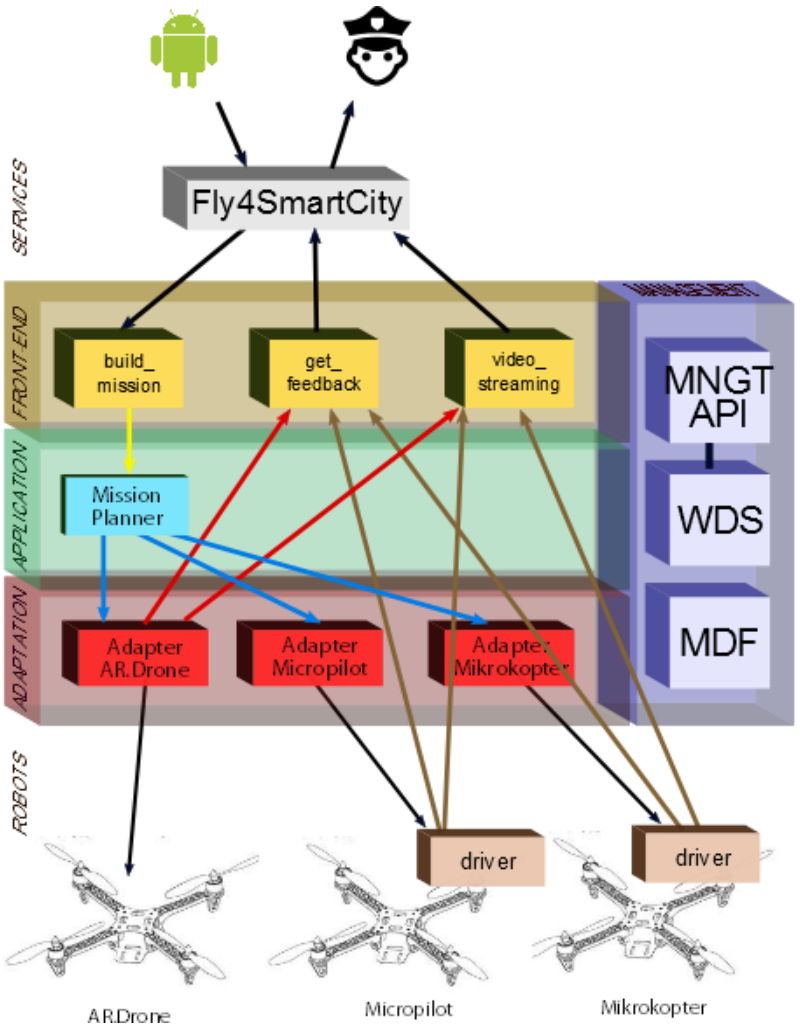
- Keep ROS node alive
- Update ROS node status for MDF

**MDF tree** is a hierarchical representation of ROS nodes and related APIs

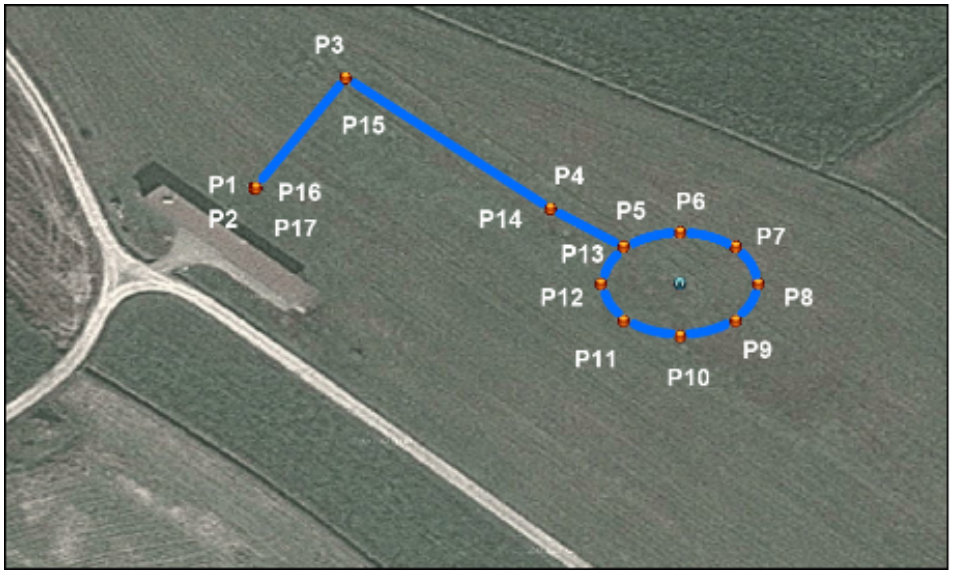
**Message Discovery Function** (MDF):

- Enables or disables ROS APIs based on ROS messages

# Current status

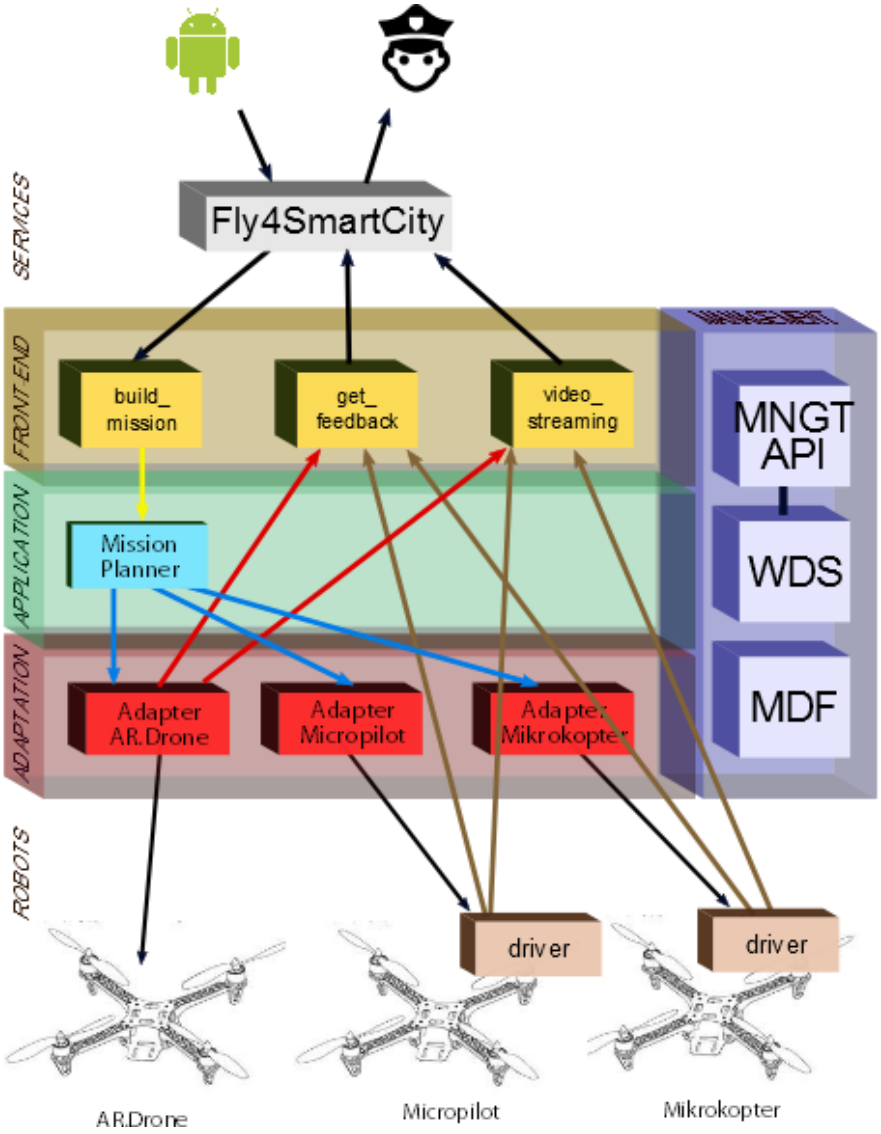



- **Mission planner** : builds a circle around the virtual target
- **UAV** : autonomous takeoff, navigation and landing
- **Telemetry**: active



# Conclusion & future work

- **Front end layer**: work in progress!
- **Enhancing existing application**: Mission Planner – path planning & choosing suitable UAV
- **4G/LTE** support: work in progress!
- **New Services** & **HMI**



# End

Thank you!!!