III Workshop 2024 - EMBM-VD

Identification of targets and control of drones

CONTEXT:

- Development of softwares for identification of non-cooperative drones, with usage of computer vision techniques
- Development of softwares for tracking of multiple targets
- Control of drones in non-cooperative environments
- Development of Detect-And-Avoid systems

GOALS OF THIS PRESENTATION

- Show the current status of the deliveries in the SIMJA project
- Show the evolution path of the computer vision usage

SUMMARY

- Report No3
- General overview of the research
- YOLO
- Deep SORT
- Control of Drones

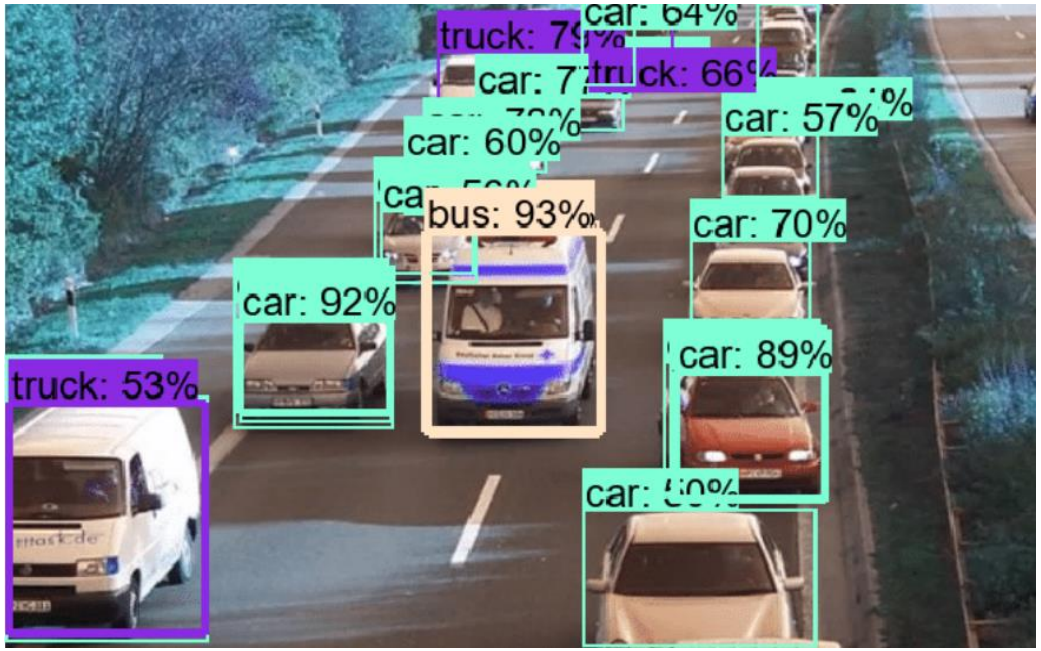
Projects and Deliveries

Report No3

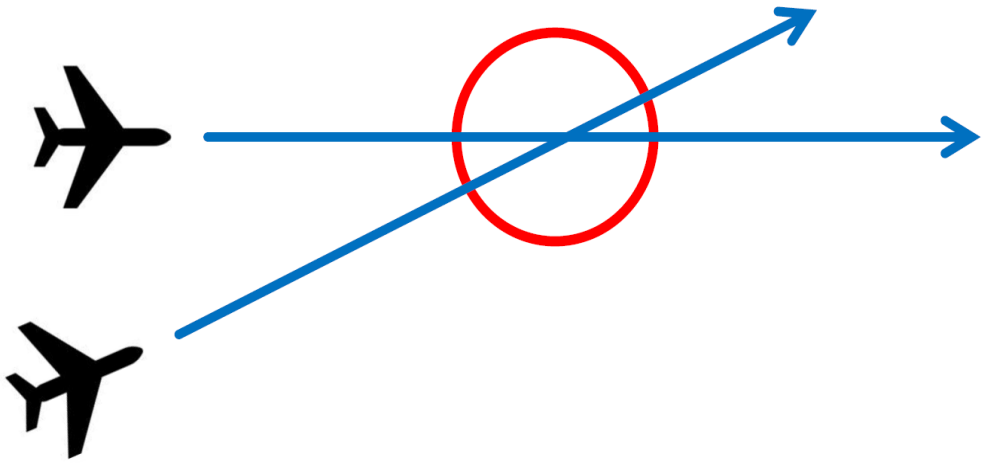
- Present a overview of the SIMUA project
- Show the state of the art technologies that is or will be in usage in UAS systems based in the four driven questions made in the SIMUA project
- Show the main challenges in the traffic management of unmanned aerial systems

General overview of the research

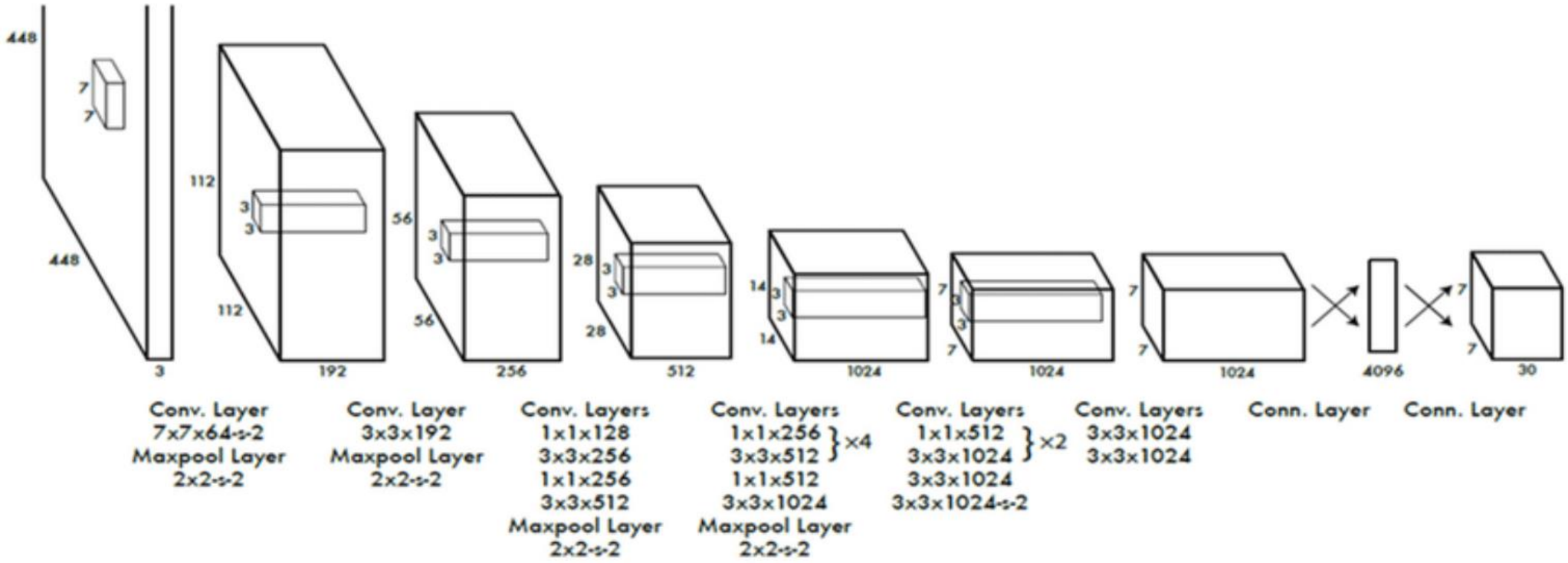
- Detection and identification of targets



- UAV control



YOLO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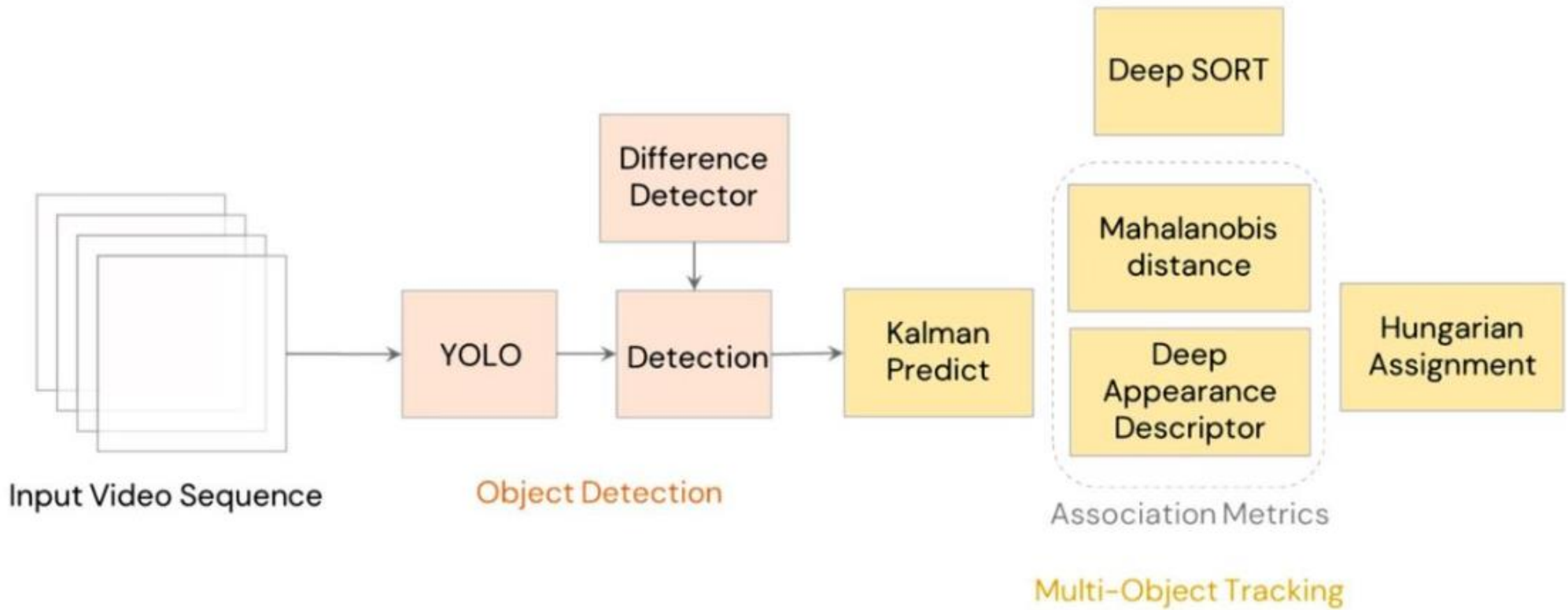
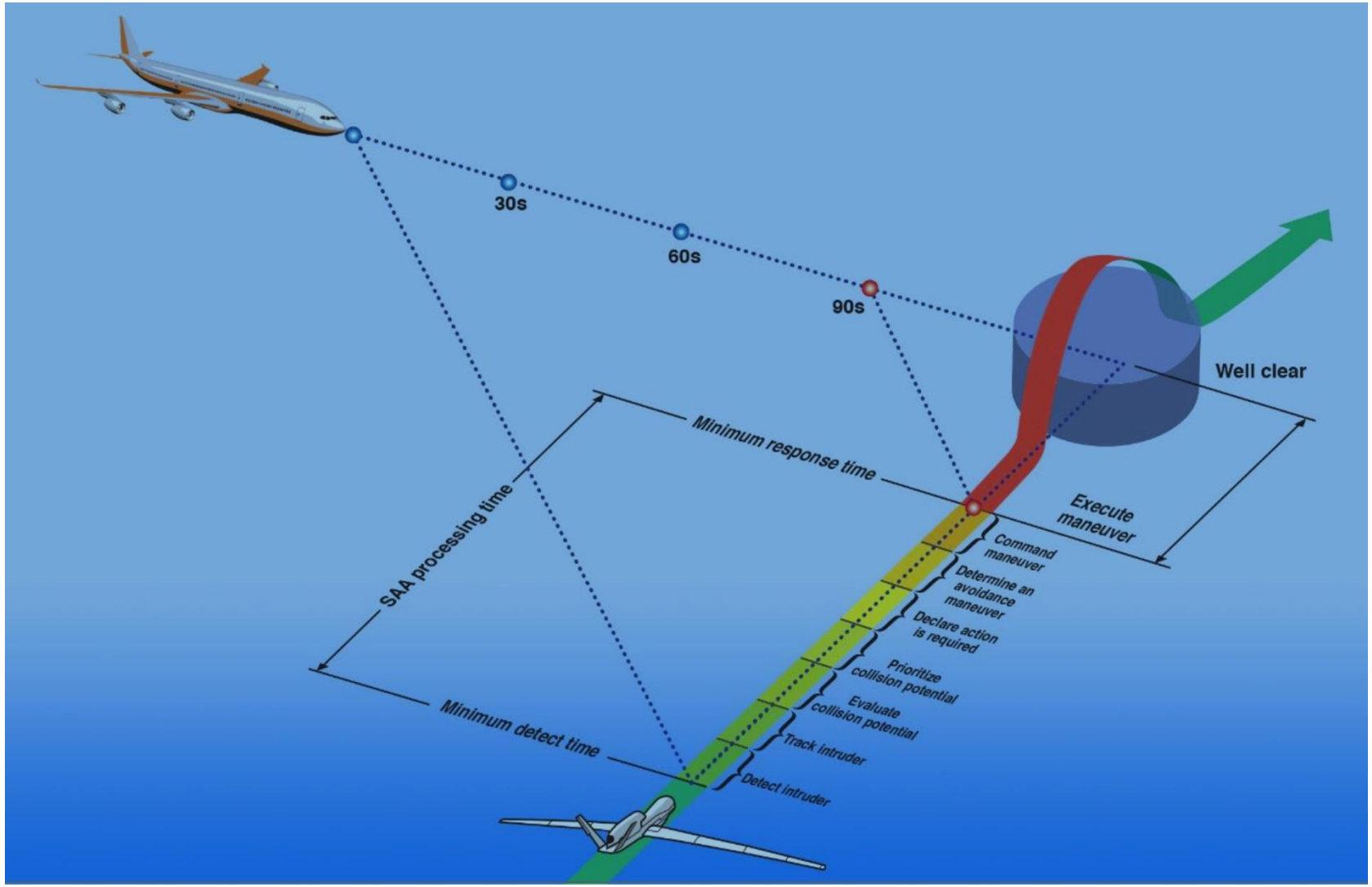
Deep SORT


Deep SORT
Difference Detector
Mahalanobis distance
Hungarian Assignment
YOLO
Detection
Kalman Predict
Deep Appearance Descriptor
Input Video Sequence
Object Detection
Association Metrics
Multi-Object Tracking

Control of Drones



Final considerations

Questions/Comments?!

Daniel Gurgel Souza Medeiros , daniel.medeiros.101848@ga.ita.br

https://www.linkedin.com/in/daniel-g-s-medeiros/