Mechatronic Systems Engineering

Fachhochschule Dortmund
University of Applied Sciences and Arts

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Use Case

Precision Farming

- Enabler for feeding the world
- Beeing productive, efficient, ecological, economical

https://www.farmmanagement.pro/tips-for-improving-precision-farming-practices/

Use Case

Precision Farming

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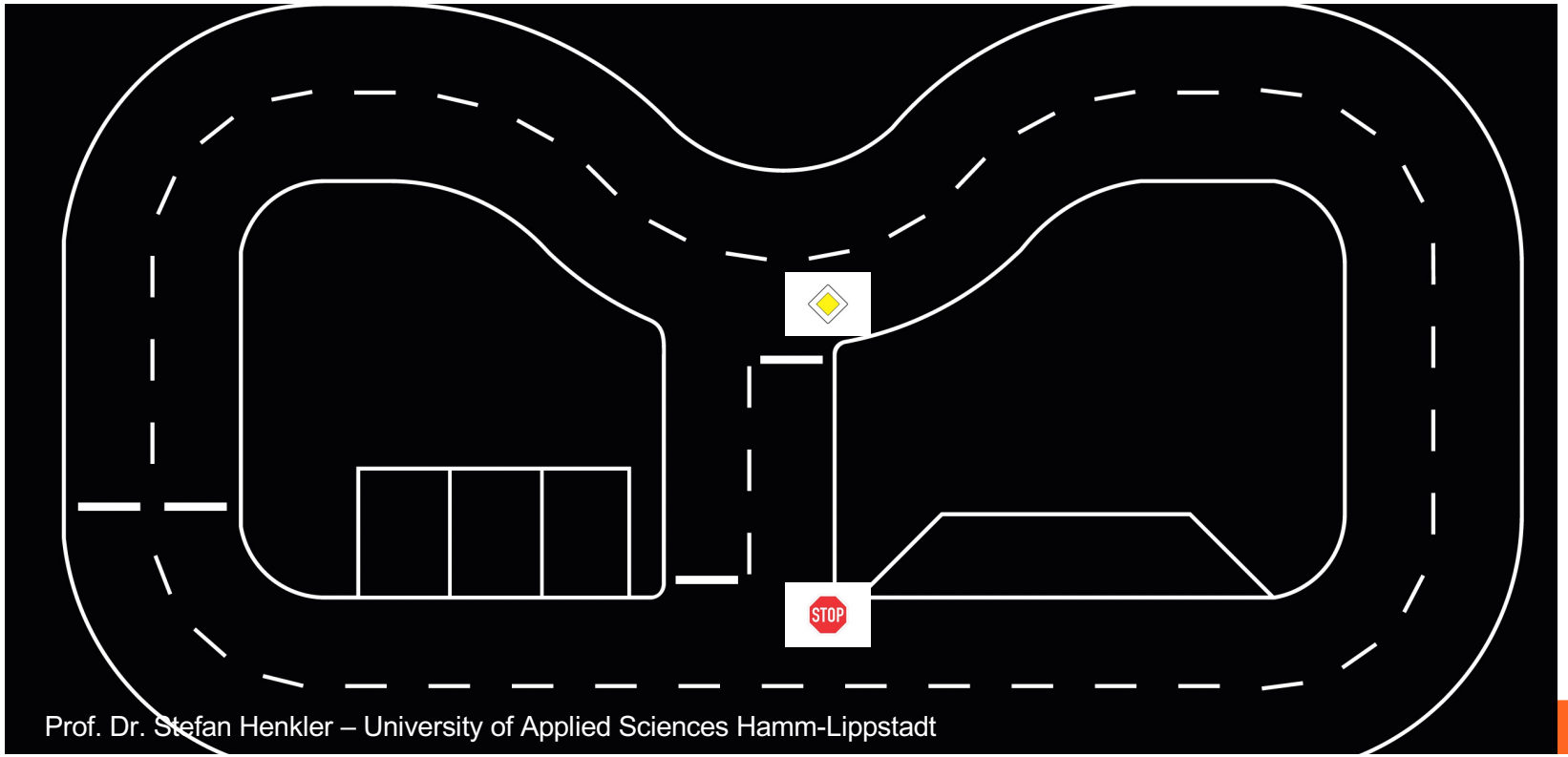
- Develop a robot that can drive autonomously on the road-track
  - One camera is used as a sensor
- The size of the system to be developed is of scale 1:10
- The test environment is given in the following (size 7.5 to 3.5 meters)
- The coordination of your vehicles is given by the road-track below
  - Solid lines and dashed lines
  - Road signs like: stop sign, priority road,
- Unique markers (signs) represent different plants
  - Healthy sugar beets
  - Diseased sugar beets
  - Weed
- Your vehicle must be able to:
  - Navigate autonomously on the complete track (right lane)
    - Shortest path
  - identify plants, weeds, diseases, signs,



Prerequisite

- Create a team git
- Add all team members
- Add lecturer
  - Stefan Henkler (shenkler)
- Upload continuously your results to git
  - These includes the responsibilities
  - (Pre-) final version are uploaded within of the specified deadlines
- Divide the overall task into separate parts for each team-member in the following way, like:

			Name1		Name2		Name…
#	Task	Short summary	Todo (incl. Deadline)	Done (incl. Finishing date	Todo	Done	…
1	Task1						
2	Task2						
…	Task…						

Task 1

- Develop a first paper prototype of your different types of vehicles
  - Next week: sketch of prototype

Tasks 2

- Develop a first principle solution
  - Find the to be developed “paper prototype” of your group
  - Apply all steps of the CONSENS method
  - Deadline: next week right before next session
  - Upload your solution to github