Mechatronic Systems Engineering

Fachhochschule Dortmund
University of Applied Sciences and Arts

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2 Schedule

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25.04.23	Refa
02.05.23	Refa
15.05.23	Lippstadt
16.05.23	Refa
17.05.23	Lippstadt
23.05.23	Refa
27.06.23	Lippstadt

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 to any position of the field
  - A camera is used as a sensor
- Consider different types of vehicles for the different types of bales
- 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 field below
  - Lines in different colors
  - Unique markers in each field including coordinates from 0,0 to 13,5
- Markers represent different plants
  - Healthy sugar beets
  - Diseased sugar beets
  - Weed
- Your vehicle must be able to:
  - Know it's position based on the printed coordinates and markers
  - Navigate to any coordinate (shortest path including maybe weighted edges)
  - Navigate to a set of target positions efficiently
  - identify plants, weeds, disease.

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