HOCHSCHULE HAMM-LIPPSTADT

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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

- Develop an autonomous vehicle that can collect objects (bales of straw)
- 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 vehicle is given by the lines
- Somewhere on the test track the bales of straw are distributed
- Your vehicle must collect the bales of straw and bring them to a certain position

Prerequisite

- Create a team git
- Add all team members
- Add all lectures
  - Stefan Henkler (shenkler), Kristian Rother, Gido Wahrmann
- 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…						

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Task 1

- Develop a first system engineering model based on the Systems Engineering lecture
  - This includes all parts of the analysis
    - Deadline: Sunday, April 3 eob.
- Outcomes are SysML Diagrams

- Refine your system engineering model and develop a first prototype
  - Being able to follow a line and detect obstacles
  - First version is simulated in tinkercad
  - Second version is realized on a test vehicle in our labs
  - Deadline: Sunday, April 10 eob

Relevant criteria

- Quality of solution
  - Originality
  - Completeness
  - Integrity
- Usage of methods and techniques
  - Usage of process specific tools like github, trello, …
  - SysML/UML Diagrams like
    - Requirements, Use Cases, Scenarios, Constraints, Block-Diagrams, …