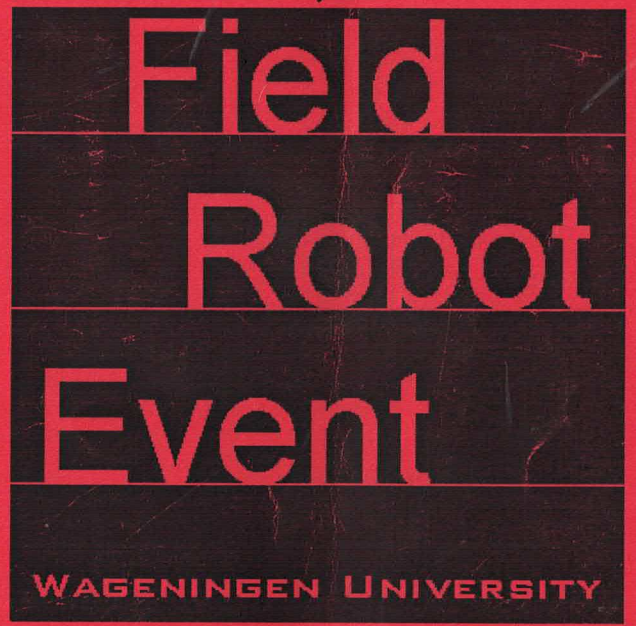
Program

Of the 3rd Field Robot Event, 2005



Thursday June 16
Friday June 17

application of several expertise fields, carried out in a multidisciplinary team; teams will be constituted from students of different studies, cases are identified and commissioned by an external employer form e.g. a small manufacturing company, industry, research institute or a (non-) governmental organization.

Internship
The internship is an important part in which the student can apply its obtained knowledge in a work environment that is similar to the professional practice. Besides, a student also learns the consequences of working together with colleagues and the difference between theory and practice. When the internship is done abroad a student also learns how to deal with other cultures and he or she can learn or improve a foreign language. Approximately half of the students of Agricultural and Bioresource Engineering are doing their internship abroad.

Thesis
All students have to do a thesis which is the climax of the study. They have to select one of the following different theses:

- Systems and control
- Information technology
- Farm technology
- Environmental engineering
- Soil technology

The thesis consists of doing independently research or a part of a research in which the knowledge and the skills gained in the BSc study, the MSc courses and the academic master cluster are being applied. The objective of a thesis is doing scientific research in all its faces and aspects.
The different aspects of a thesis are:

- Search, analyze and evaluate the available literature and other information in relation to the problem.
- Plan lab experiments and / or steps to develop and test a mathematical model.
- Individually doing lab experiments and / or developing and testing mathematical models.
- Analyzing and evaluating own research results, including the critical comparison with literature and results of thirds.
- Giving one or more oral presentations and writing a scientific report.
- In most cases, following chair group colloquia.

Depending on the subject the different aspects can be of more or less importance.

Contest Information

Jury members

- Prof. Dr. J. Müller (chairman)
  University of Hohenheim, Germany
- Dr. Ir. J. Anthonis
  Leuven University, Belgium
- Dr. ir. D. Goense
  A & F, Wageningen UR
- Prof. Dr. Ir. G. v. Straten
  Wageningen University
- Dr. Ir. E. van Henten
  A & F, Wageningen UR and last years winner

The jury will meet Friday, 12.00 hours.

Three different prizes will be given:

- Performance prize: Award, 300 euro, National Instruments tools
- Design prize: 200 euro, Rockingstone prize
- Freestyle prize: 100 euro, Rockingstone prize

N.B. A team can only win 1 prize.

A total of 225 points can be earned for performance.

Field Performance:
Field performance of the robots is evaluated by 2 mandatory tasks:

Task 1: Make as many rows as possible in 3 minutes (**straight** rows, 10 m long, 12 rows are available). The robot has to turn at the end, and **enter 2 rows further again**! The robot has to count the number of plants at both sides. There will be plants missing in the rows, with a maximum of 1 meter of plants missing. (max gap will be 1 meter). When time rans out, the robot should be able to display the number of plants counted within 5 seconds on a display or (remote) computer.

Task 2: Make as many rows as possible in 3 minutes (**curved** rows, 40 m long, 12 rows available). The robot has to turn at the end and **enter the next row**. Counting is not necessary!

Every interference with the robot decreases the elongated distance with 5 meters.

Jury assistants are measuring the distance, which is mastered by the Field Robot during the given time. If a Field Robot is mastering all available rows in less than the given time, required time is measured.

A ranking is made for distance as follows for every task:
25 – 20 – 15 – 12 – 10 – 9 – 8 – 7 – 6 – 5 – 4 – 3 – 2 points

The total score for ranking will therefore be 25 * 2 tasks = 50 points.

A ranking is made for counting as follows:
50 – 40 – 30 – 25 – 20 – 15 – 10 – 9 – 8 – 7 – 6 – 5 – 4 points

The Jury will judge the working style of the Field Robots in terms of:

- Crop damage
- Missing rows
- Smoothness of action

Points 1 (poor) to 5 (excellent) are indicated by each of the 5 Jury member by rising a number card for every task.

In total max 50 points can be earned from the jury, calculated as: 5*5*2tasks = 50 points.

Investment:
As there are no restrictions in how to construct the robots, the investment of the Field Robots are taken into consideration. The costs are declared by the teams themselves in a table of specifications that is submitted before the contest and printed in a program book. Points will be assigned to cost categories.

A maximum of 25 points can be earned on this element:

Cost	Points
< 500	25
500-1000	15
1000-2000	10
2000-4000	5
> 4000	0

Final ranking
The points from field performance and investment are multiplied by factors to reach the relation:

Jury points x 2 + Distance points + Counting points + Investment points =
100 + 50 + 50 + 25 = Max. 225 points.

Proceedings:
After the event "Proceedings of the 3rd Field Robot Event 2005" will be published. The teams have been encouraged to prepare a paper and fill in a standard form about specifications of their robot.

Map of Wageningen