



Mechatronic system for automated attaching of the supporting wires in high-trellis hop gardens

JOINT PROJECT (2008-2010)

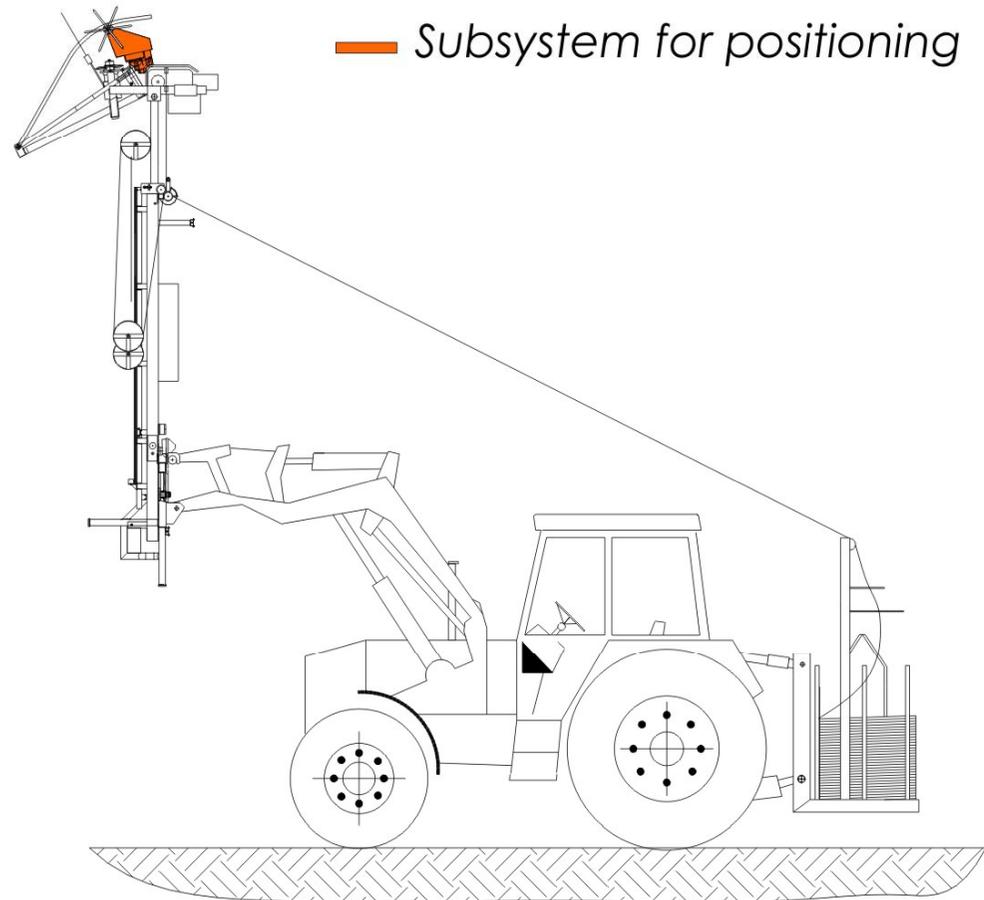
funded by the German Federal Agency for Food and Agriculture (BLE)

Background and motivation

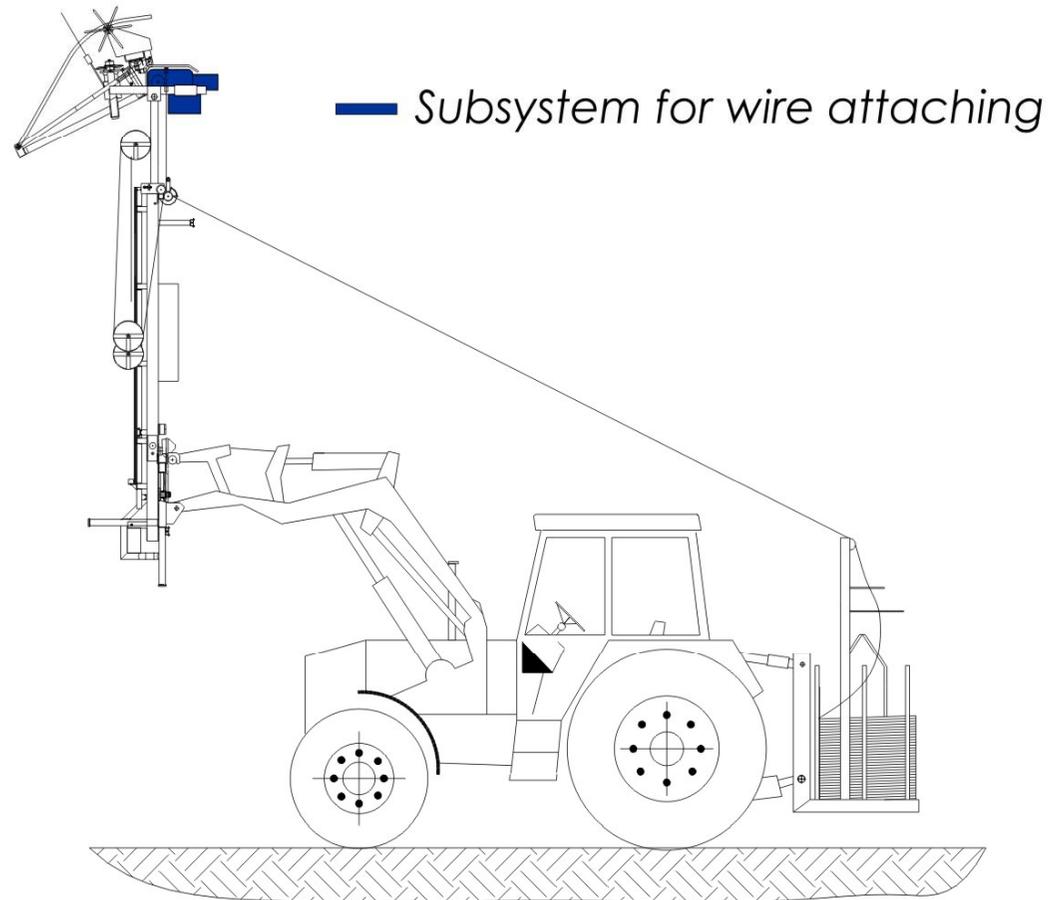
- In Germany **18.500 ha** cultivated area under hop thereof more than 15.500 ha in Bavaria
- Predominantly 7 or 8 m high **trellis** systems
- Annual replacement of the support wires (1,2 – 1,4 mm thick iron wire)
- **Manual fastening** of the support wire:
 - 3 workers-platform 12 man-hours and 3 tractor-hours per ha
 - 2 workers-platform 15 man-hours and 5 tractor-hours per ha
- **Problems** by manual fastening :
 - Accident risk
 - Ergonomically very uncomfortable task
 - Dependent on the weather conditions



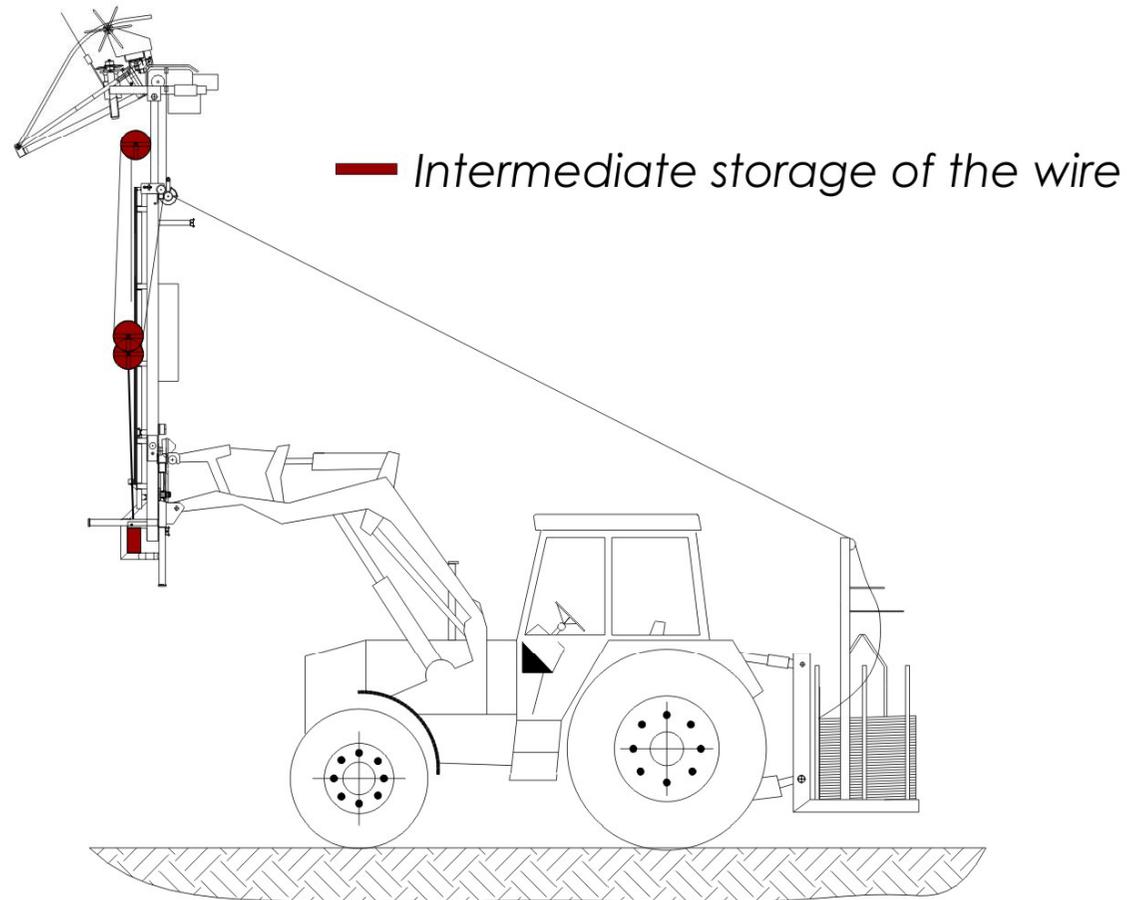
Optimisation and development tasks



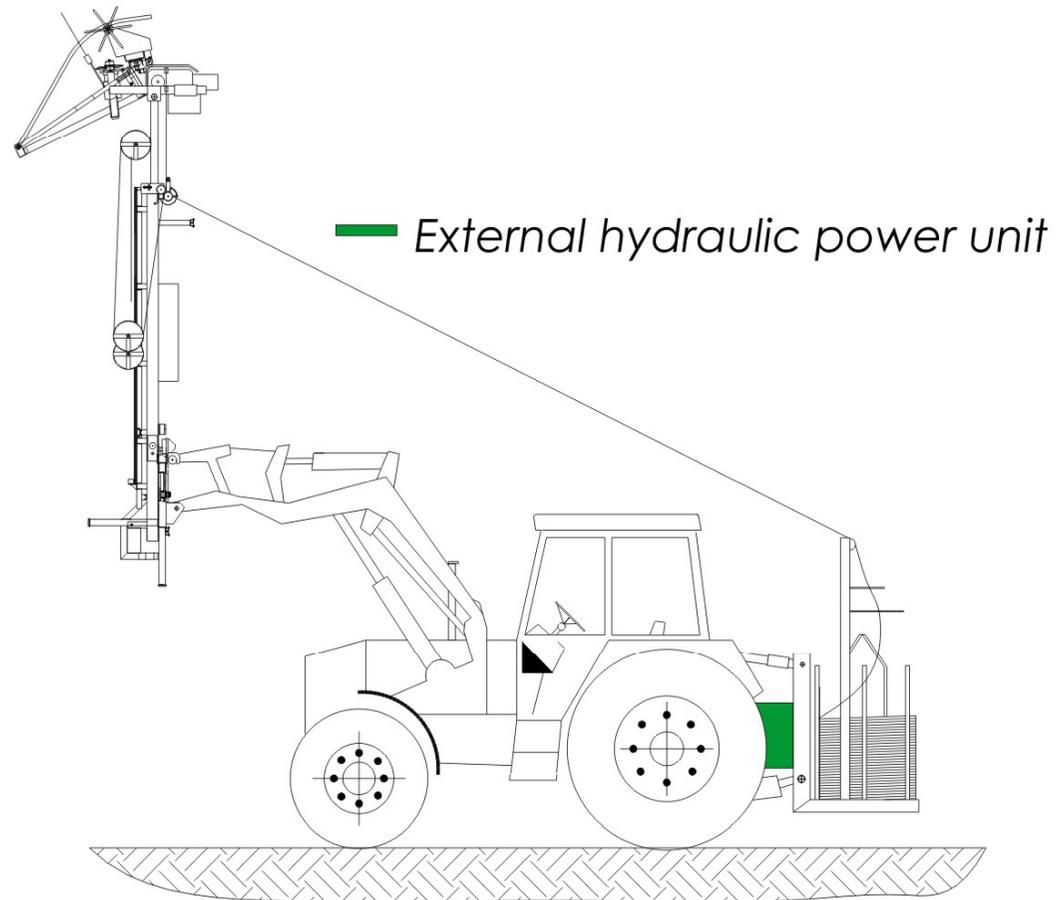
Optimisation and development tasks



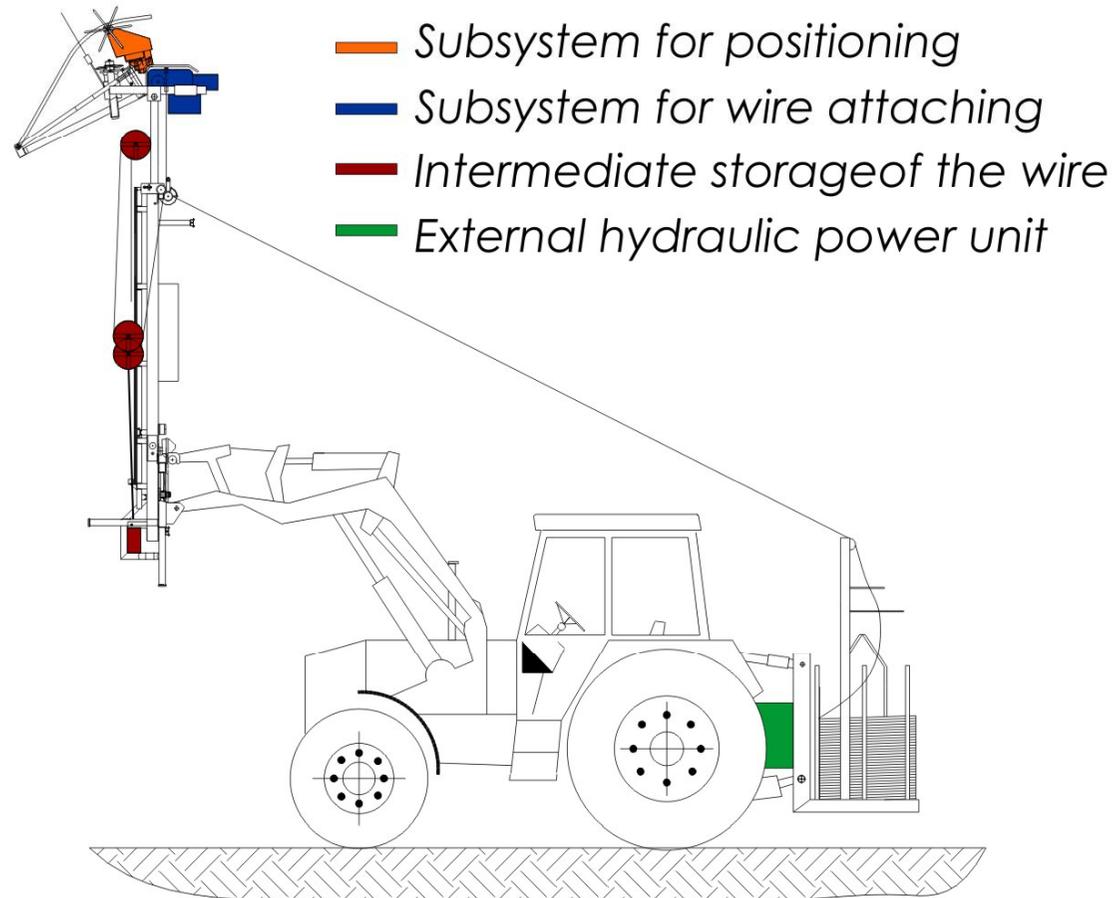
Optimisation and development tasks



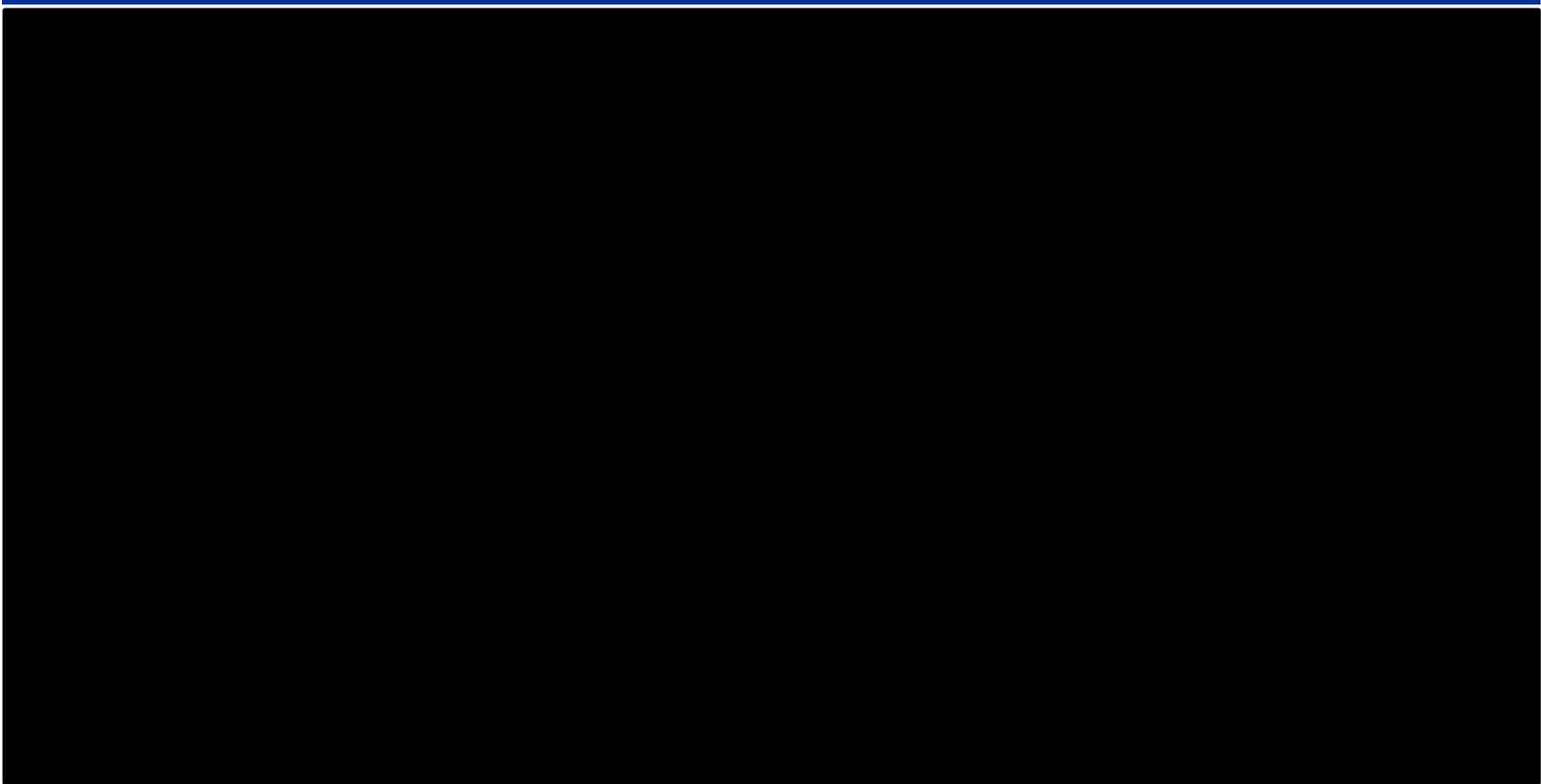
Optimisation and development tasks



Optimisation and development tasks



Results



Results

- Area capacity between 0.21 and 0.23 ha/h
- Average speed between 1.45 and 1.65 km/h
- Comprehensive testing will be continued in the season 2011/12

