Landing on a Moving Platform

Final Presentation – Team „Weisswurst“

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The Approach

- **Separate steps:**
  - Search – *deprecated*
  - Predict platform movement
  - Approach, land and detect successful touchdown

- **Focus (evolved):** *Precision*

- **Ideas:**
  - two EKF (plus world info) – *deprecated*
  - one EKF (with velocity)
What We Did / the gory details

- Existing code used:
  - `joynode`
  - basics from `ekf`/`ardrone_localizer`
  - `ar_recog`

- Own contribution:
  - Framework based on `boost::statechart`
  - Enhanced joystick implementation
  - Additional PID (+ extra parameters) for height
  - Extended EKF with velocity
  - Applied (“recursive”) multi tier marker
What We Did / what it should do
The Results / what it actually does ...

- You’ll see:
  - Search (manual)
  - Approach
  - (Relocate)
  - Touchdown
What We Gained / lessons learned

- **Stable** implementation of the wanted behavior
  - Predict velocity
  - Approach and touchdown on moving platform

- **Learned:**
  - Working with dirty/real data means *lots* of (dirty) manual tuning

- **Further work:**
  - Tune parameters! (PID, touchdown conditions, approach/state-switch conditions, etc…)
  - Automatic search (given that the safe area is big enough!)

*Thanks! =)*