

# UAS Video Workshop and Challenge

## Technical Discussion

25 October 2011

### Take Aways

- Lots of tuning and assumptions still needed
- Reliability of controllers is typically bad
- Controllers still focus on exact rather than cloud measures
- Low pixels on the target will be a fact of life
- How tight is vehicle control coupled to sensor control?
- How vehicle dependent/or sensor dependent is success?
- Lots of structure and a-priori information is needed to make these systems work
- Pixel size is important
- Lots of offline computation still needed, want to go real-time at the start.
- Open source autopilots are needed
- Use data mining on UAS data collected on board.
- Data links are a problem, especially on small vehicles
- Lots of perception, not much prediction in terms of positioning – where to take next data, route planning
- Estimation/Control/Planning needs to be coupled more tightly – DARA “META” program may be a model
- There is still a strong reliance on human-in-the-loop in current “autonomous” systems
- Bio/Nature may provide good examples on bounds on algorithms
- Make use of a priori knowledge, do not avoid it.