



## Joint Actions for a Aibo Team



- **Design and develop the behaviors that make use of information from their teammates**
- **Evaluate your design in a game of ‘fooling around’**



# Assignment 2004



- Goals
  - Evaluate Aibo software architectures of two teams
  - Port software to Aibo ERS-7





# Conclusion



- Advise German architecture for the Dutch Team.
- Interesting CMU modules for future research:
  - Vision
  - Localization

# Conclusion



German team software package better!

Strengths:

- Clean modular code
- Documentation
- Tool support
- XABSL for behaviors



# Dutch Aibo Team 2004



- German Open 2004 (Paderborn)
  - 6 goals scored; 11 goals received
  - Games: 1 win, 3 losses
- Lissabon 2004
  - 16 goals scored; 11 goals received
  - Games: 2 wins, 3 losses
  - Technical challenge: 7<sup>th</sup> position
    - Open challenge: most points
    - Variable lighting challenge: zero points
    - SLAM challenge: 5<sup>th</sup> rank
  - Qualified for Osaka 2005!

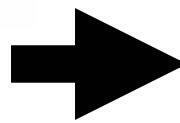
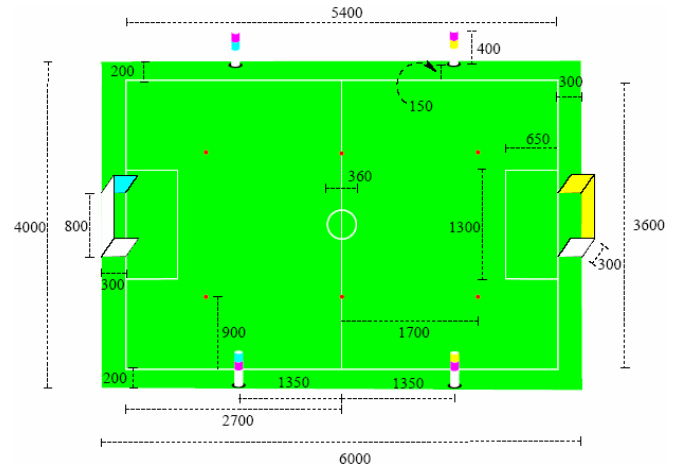
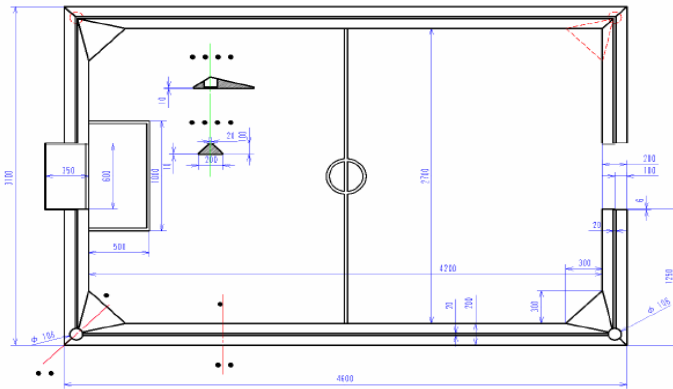




# Assignment 2005



## Improve field localization





# Conclusion



- DT2005 Aibo is able to localize
  - Position is fine during set-up
  - After kick-off positioning is incorrect



- There remain unsolved hard-coded dependencies in the perception modules





# Dutch Aibo Team 2005



- German Open 2005 (Paderborn)
  - Soccer ¼ final:
    - 8 goals scored; 9 goals received
    - Games: 1 win, 3 losses
- Osaka 2005
  - Soccer 9<sup>th</sup> position:
    - 15 goals scored; 13 goals received
    - Games: 2 wins, 1 draw, 2 losses
  - Technical challenge:
    - Open challenge: zero points
    - Variable lighting challenge: zero points



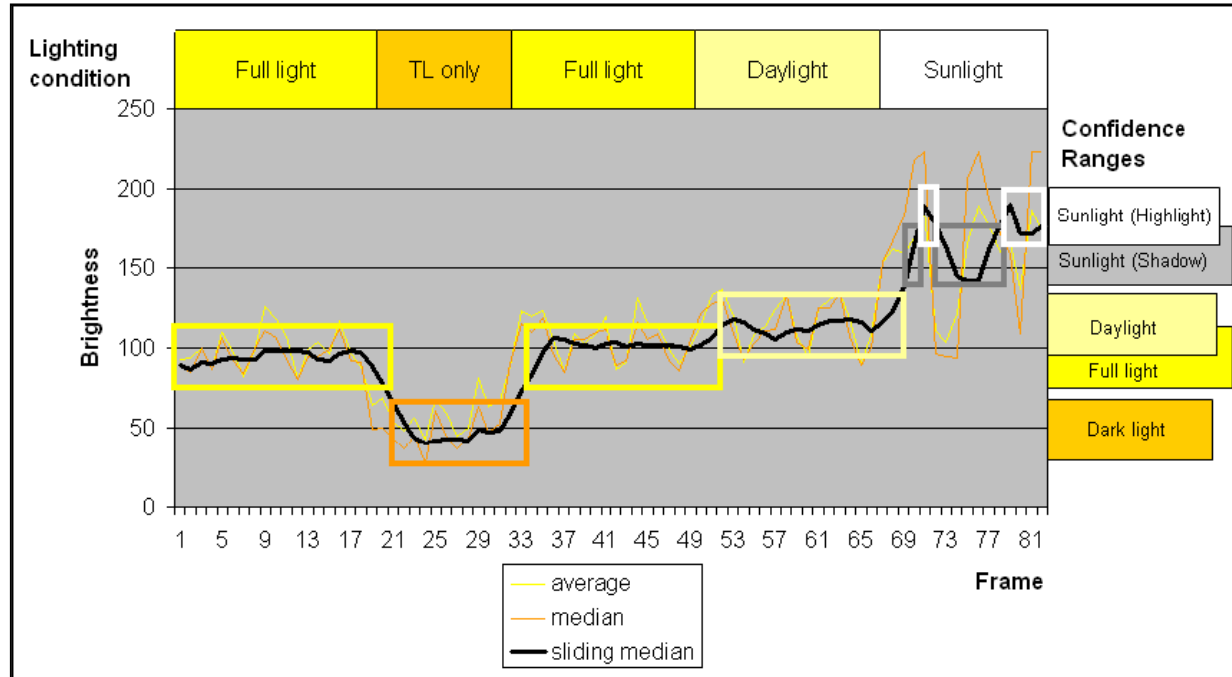




# Dutch Aibo Team 2005



- Achievements:
  - Robust role assignment
  - Good self-localization:
    - average error: 63.5 mm, 2.94 deg
  - Multiple colortable algorithm for variable lightning conditions



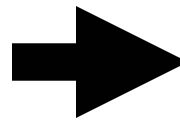


# Assignment 2006



Improve team play

Single player behavior



Joint actions





# Evaluation



Fooling Around: an extension of the Passing Challenge

