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Trust in Robots – Priorities in Research and Industry

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Study with Industrial Experts

“What Do Industrial
Developers and End-Users
Expect from a Cognitive Robot?”

- Questionnaire of AICoR Topic Group
- Three ERF Workshop on AI & Robotics
- Interviews with selected key persons in industry

Vernon, Vincze: Industrial Priorities for Cognitive Robotics. Proc. of EUCognition, 2016. ceur-ws.org/Vol-1855/EUCognition_2016_Part2.pdf

What Developers and Their Customers Want

Cognitive Abilities

- Safety, error handling, individualise
- Task & action learning, knowledge
- Reasoning about own capabilities



Partial Autonomy: user sets goal

- Robot intermediate steps
- Formal limits of autonomy

Goals specified at high level

- Robot knows about purpose



Instructions

- Teaching by demonstration, learn application context

HOBBIT – The Mutual Care Robot

Fall Prevention and Robot Helper

- Demographic challenge
 - Increasing age, highest risk: fall
 - 6% health costs; leave home
- Robot for fall prevention/detection
 - *Clean up floor, keep track of things*
 - Socially connected, stay active, entertainment
- 18 test persons, 3 weeks in A, S, GR
 - 75-88 years old, living alone, moderate impairments
 - Very high acceptance 87%; rent 77%
 - 83% want full robot with arm



Robot Helper at Home



HOBBIT testred in 18 homes

Trustworthy Robots

- ▶ Industry needs performance within set limits
- ▶ Users expect predictable behaviour



Trustworthy = predictable

