

ROBOT HARDWARE AND SOFTWARE MODULARITY THE LITTLE HELPER PARADIGM

ERF15 workshop:
Hardware and software modularity and interoperability
in service robotics: towards standardisation

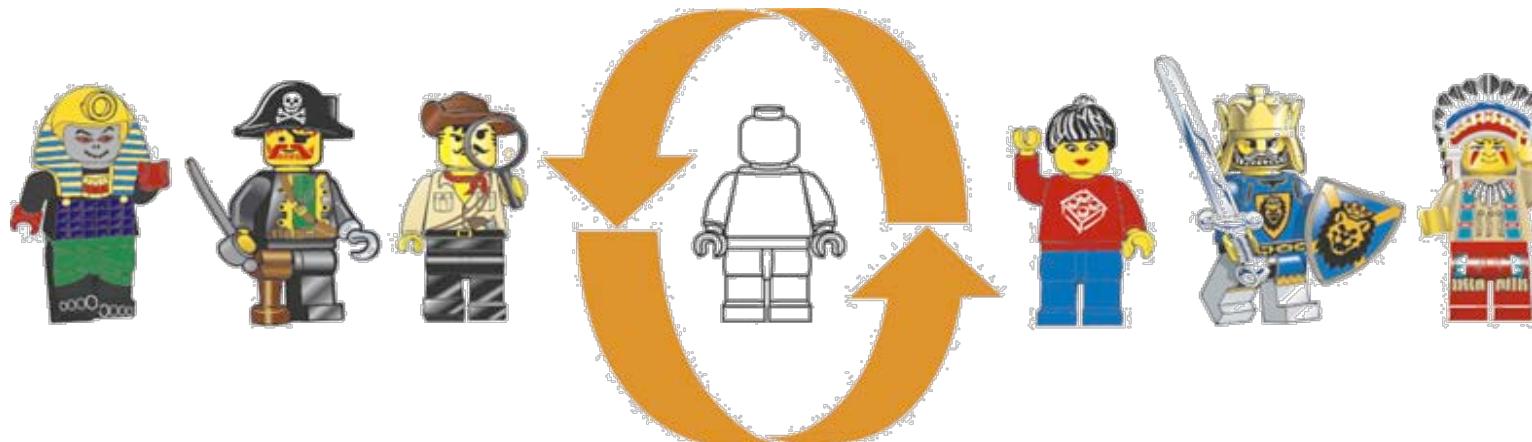
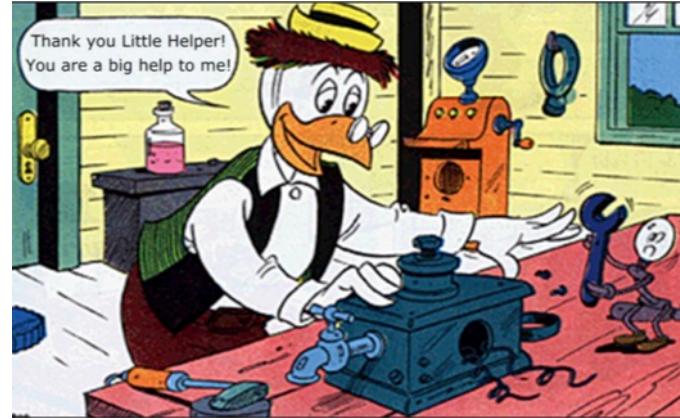
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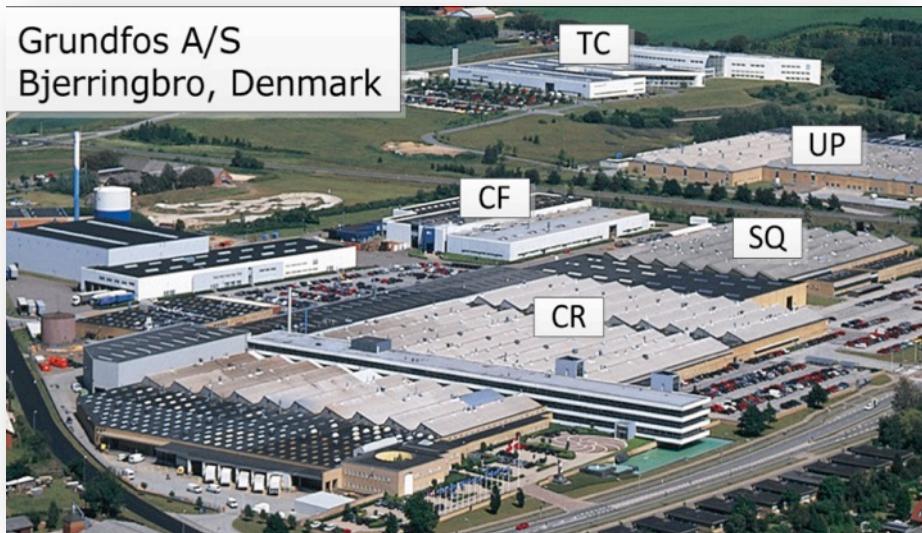
The Little Helper Concept

- “Little Helper”
 - Robotic co-worker
 - Robot assistant



Close collaboration with Grundfos A/S

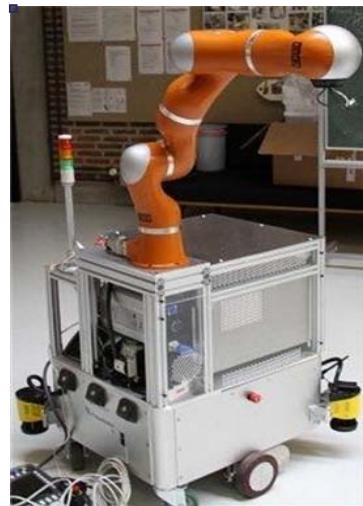
- Grundfos A/S in Bjerringbro
 - Versatile; processes, parts and production strategies
 - General manufacturing industry



Little Helper Evolution



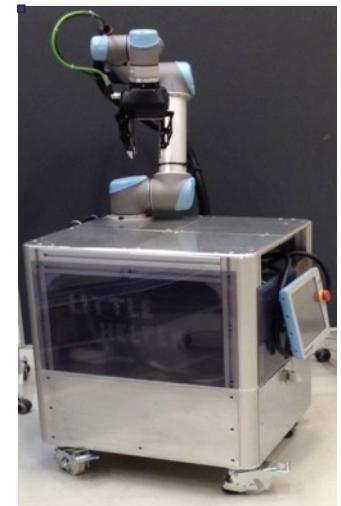
2008



2010

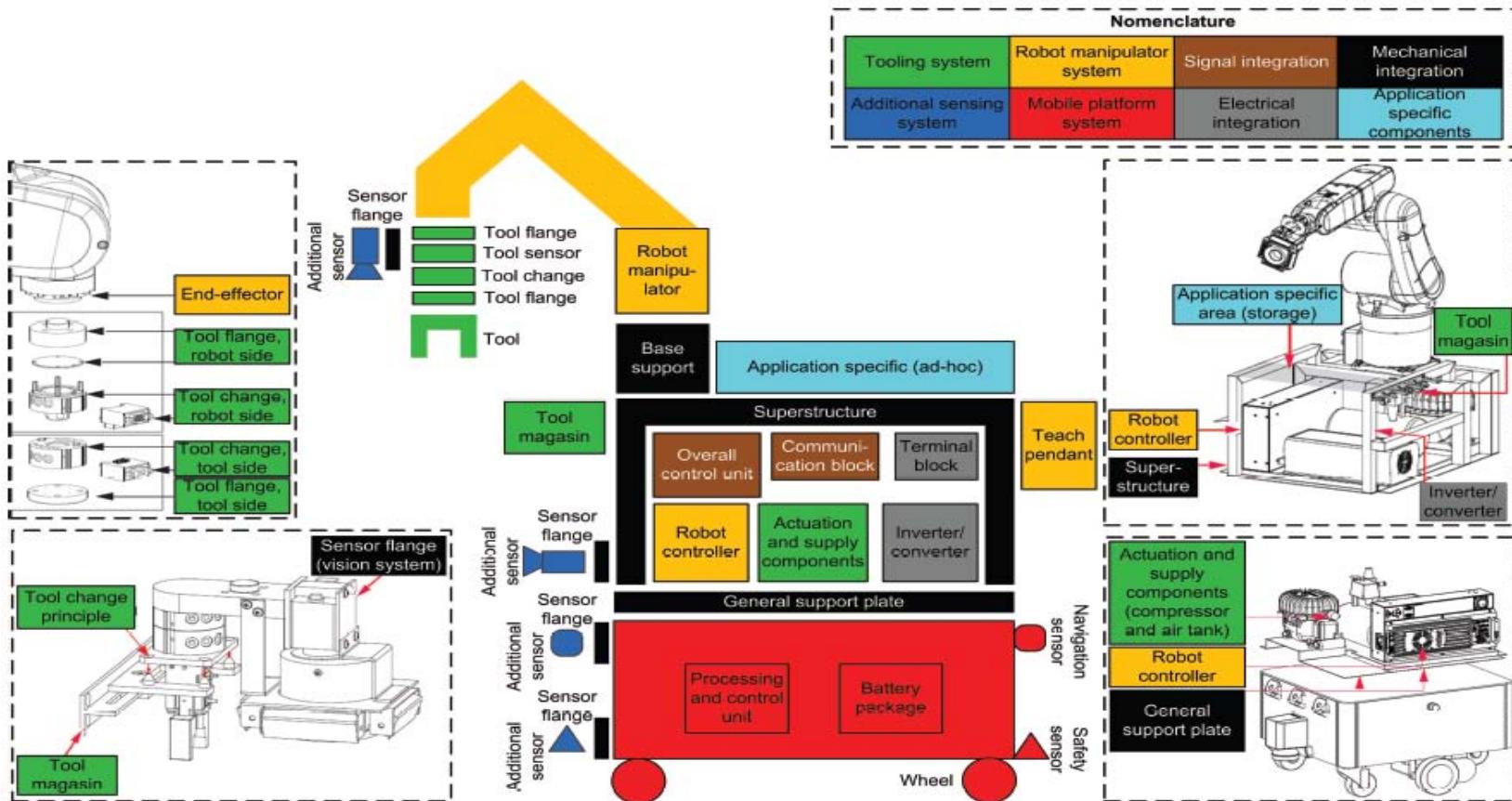


2012

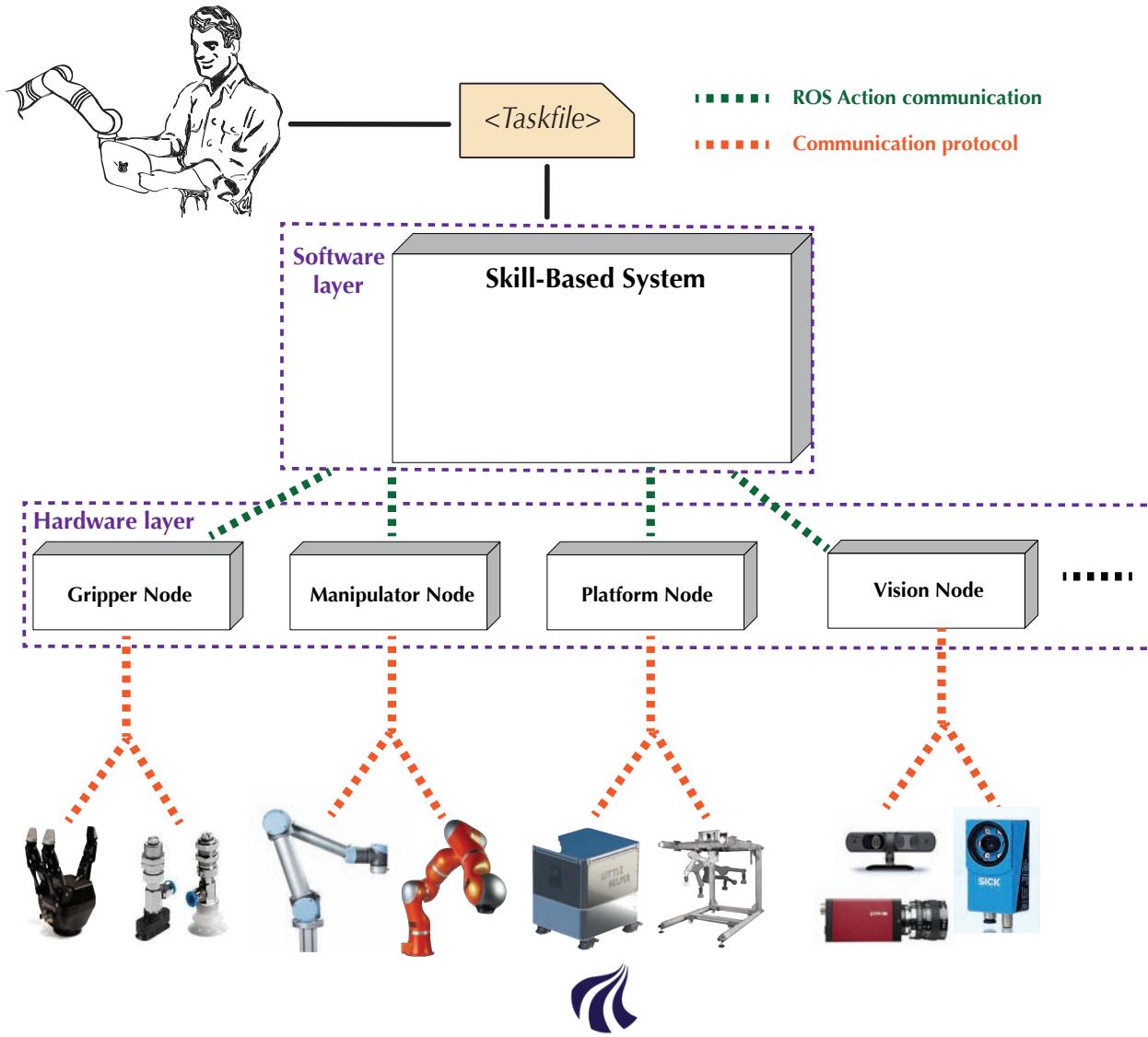


2013

Modular Hardware Approach



Modular Software Architecture



Task Variation of Little Helper platform



Single / Multiple
part feeding (GISA)



Assembly of industrial parts
and quality control (TAPAS)



Stud welding
(CARLoS)



Execution of Robot Skills
From Action Categories (ACAT)⁷

Acknowledgements



Grant agreement
No. 600578



Grant agreement
No. 260026



Grant agreement
No. 606363



Grant agreement
No. 610917



Conclusions

- + Open, modular platform
- + Task-Focused, not device-focused
- + New task setup: not hours/days - but minutes



Thank you for your attention!



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