New Developments for Robert
Assisting Novice Users Even Better in DIY Projects

Gregor Behnke, Pascal Bercher, Matthias Kraus, Marvin Schiller,
Kristof Mickeleit, Timo Häge,
Michael Dorna, Michael Dambier, Dietrich Manstetten,
Wolfgang Minker, Birte Glimm, Susanne Biundo

Ulm University / University of Freiburg

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Do-It-Yourself Projects

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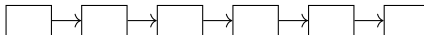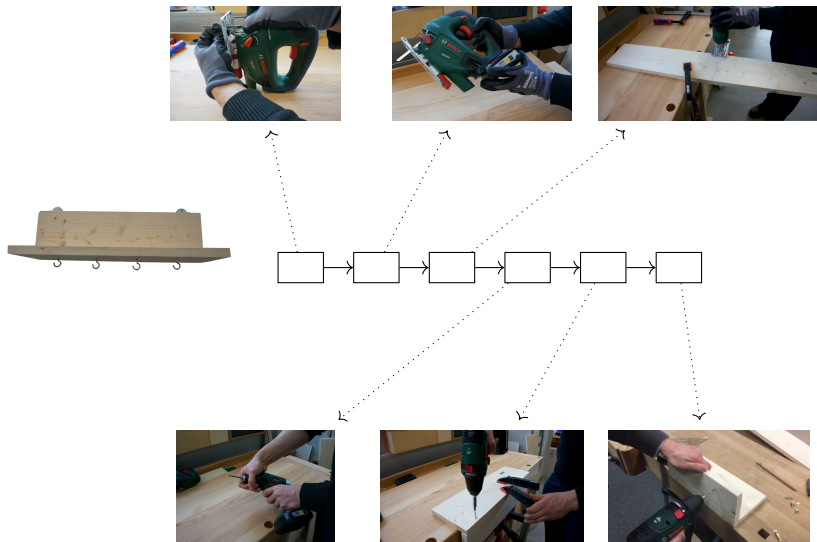# Do-It-Yourself Projects

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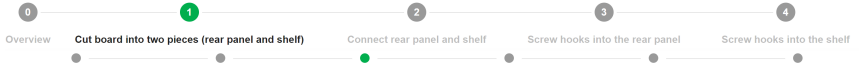
Do-It-Yourself Projects

Assisting DIYers

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Assistance delivered by Robert

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- Actions are presented as

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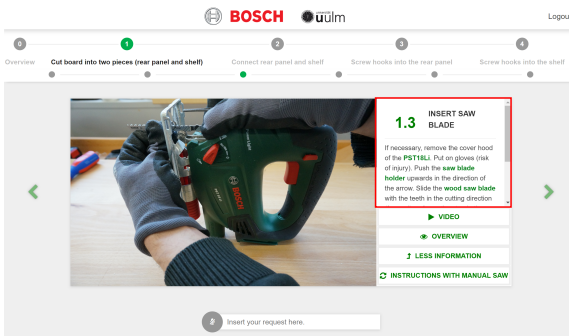
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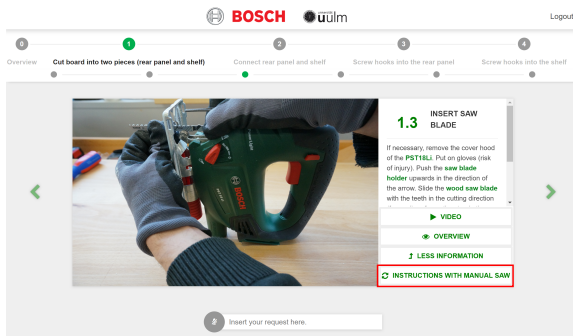
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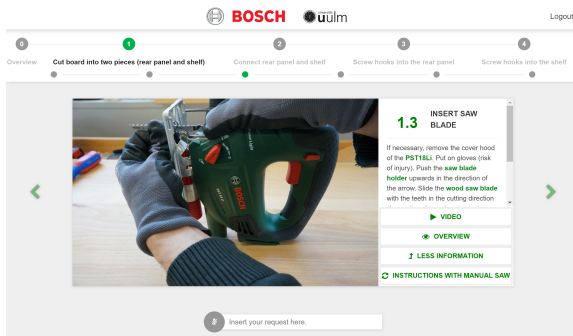
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- Proactivity using Connected Tool

Robert's components
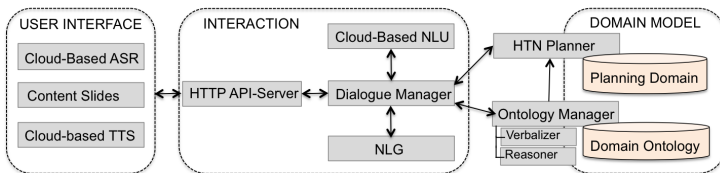
- (HTN-)Planner

Robert's components

USER INTERFACE
- Cloud-Based ASR
- Content Slides
- Cloud-based TTS

INTERACTION
- HTTP API-Server
- Cloud-Based NLU
- Dialogue Manager
- NLG

DOMAIN MODEL
- HTN Planner
- Planning Domain
- Ontology Manager
  - Verbalizer
  - Reasoner
- Domain Ontology
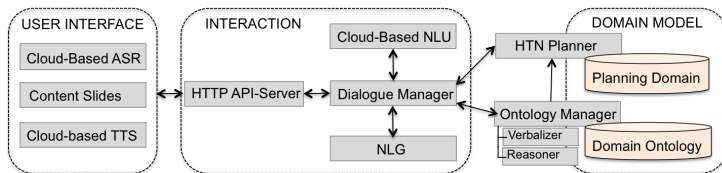
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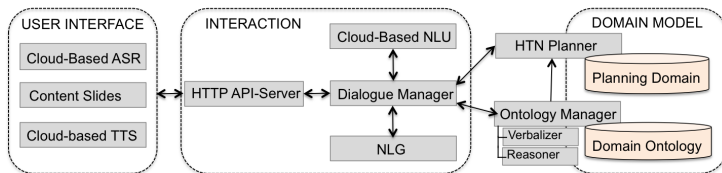
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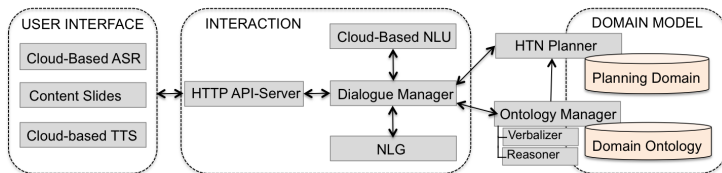
- (HTN-)Planner
- Ontology Manager
- Dialogue Manager
- User Interface

Changing the Plan

The user might not like the presented plan!

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vs

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- We can't know the user's preference in beforehand.

Changing the Plan

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vs

- We can't know the user's preference in beforehand.
- ⇒ React to the user's whishes.

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What about inconsistencies?
$\Rightarrow$ If $\neg\exists\pi : \pi \models \bigwedge \phi_i$, drop the oldest one

Connected Tool

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- Sensors to PSR18Li
  - Gyroscopic
  - Accelerometric
  - Compass

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- Recognise Activities
  - off
  - screwing
  - drilling
  - drill change
  - battery change
  - other

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- Inform the user of the connected tool

R: You seem to be working with the connected tool for the first time. Don't worry, I'll guide you through the steps!

Proactivity

We now know what the user is doing!

$\Rightarrow$ Help the user complete his project with suitable dialogue strategies

- Inform the user of the connected tool
- Supportive questions

R: I noticed that you were drilling. Did that work?
U: No, it didn't.
R: Ok, do you need additional help?
U: Yes, please.
R: A video of this project step could help. I'm going to play it for you.
(Then a video is played.)

Proactivity

We now know what the user is doing!

$\Rightarrow$ Help the user complete his
  project with suitable dialogue
  strategies

- Inform the user of the connected
  tool
- Supportive questions
- Handle inactivity

R: I haven't seen any tool
activity by you in three
minutes. Do you need help?

U: ...

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We evaluated **changing the plan** and **proactivity**

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- 19 subjects used the change feature
- Change was performend according to expectations: 4.29/5