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Executive Summary

This deliverable is a brief introduction of manuals for acquiring and programming assembly skills.

Robot assembly skill acquisition is performed by using specially designed graphical user interfaces that guide the user through the kinesthetic teaching procedure and / or teaching with a joystick interface. Programming of assembly tasks in the real cell (without a simulation system) can be done in two ways: (1) using SMACHA scripting or (2) using Graphical User Interface. Thus, user and developer manuals are provided for both entities: the SMACHA API and the SMACHA-compatible Graphical User Interface.

Introduction

Acquisition of assembly skills in ReconCell is performed with the help of graphical user interfaces. They provide an intuitive methodology for the user to use some the ReconCell kinesthetic teaching methods. Sequencing of the acquired skills can be handled with two different programming assembly skills approaches: conventional scripting using newly developed SMACHA scripting language and visual programming using SMACHA-compatible Graphical User Interface. Thus, in this deliverable user and developer manuals are provided for three entities: kinesthetic teaching, SMACHA API, and The Graphical User Interface. These associated software packages are running under ROS and were introduced and delivered in part in deliverable **D2.3**.

Manuals for Skill Acquisition by Kinesthetic Teaching & Joystick Interface

Manuals for the use of the skill acquisition user interfaces are provided on the documentation webpage of the ReconCell project (http://docs.reconcell.eu/) under the section “Robot assembly skill manual” – “Skill Acquisition Manual”. Since this is a tool that has been developed to facilitate the process of skill acquisition, we only provide the developer manual, which can be found at the following address:

http://docs.reconcell.eu/UserManuals/RobotAssemblySkills/skill_acquisition/skill_acquisition.html

Manuals for SMACHA API

Manuals for the SMACHA API are provided on the documentation webpage of the ReconCell project (http://docs.reconcell.eu/) under the section “Robot assembly skill manual” – “SMACHA API”

- The user manual can be found at: http://docs.reconcell.eu/UserManuals/RobotAssemblySkills/smacha.html.
- The developer manuals can be found at: https://reconcell.gitlab.io/smacha/smacha/smacha.html and https://reconcell.gitlab.io/smacha/smacha_ros/smacha_ros.html.

Manuals for Graphical User Interface

Manuals for the SMACHA Graphical User Interface are provided on the documentation webpage of the ReconCell project (http://docs.reconcell.eu/) under the section “Robot assembly skill manual” – “SMACHA Graphical User Interface Manual”

- The user manual can be found at: http://docs.reconcell.eu/UserManuals/RobotAssemblySkills/smacha_gui/index.html.
- The developer manual can be found at: http://docs.reconcell.eu/DevManuals/smacha_gui/index.html

Conclusions

User and developer manuals allow to use and further develop the subsystems of ReconCell for acquiring and programming of assembly skills.