X-act news

𝒳-act consortium welcomes audience to newsletter

Dear Reader,

It is our pleasure to welcome you and introduce you to our first Newsletter of 𝒳-act Project-NMP. The project has started on 1ˢᵗ October 2012 and it will last 36 months. Eight partners from different EU countries, Turkey and Israel are meeting together, under the coordination of LMS (Laboratory for Manufacturing Systems and Automation), University of Patras, Greece.

The X-act objectives are summarized in the following:

⇨ ***Dual arm robots enhancement modules*** *involving sensors, image processing algorithms and flexible tools to enable dexterous operation*

⇨ ***Intelligent motion planning algorithms*** *for simplifying programming and operation*

⇨ ***Dual arm robot instructions libraries*** *to simplify programming*

⇨ ***Simulation modules*** *to realistically simulate the dual arm robot*

⇨ ***Sensor guided programming****, including visual programming and force sensing*

⇨ ***Highly intuitive interfaces for human-robot cooperation*** *during operation with control algorithms to regulate manipulation of parts*

⇨ ***Fenceless human robot supervision system*** *for safely involving robots and humans in manufacturing tasks*

This newsletter aims in providing an overview of the industrial application that the project aspires to run, as well as the presentation of recent activities and next steps.

Best Regards,

𝒳-act project consortium

In this issue:

- 𝒳-act consortium welcomes audience to newsletter
- 𝒳-act industrial pilot cases presentation
- Simulation models presentation
- RML robot first installation at LMS

The project overview

𝒳-act is an EU funded Research & Development Project (FP7-2012-NMP-ICT-FoF, Grant Agreement No: 314355).

The project is broken down into WPs that keep up with the project phases:

- ***Phase 1:*** *Generalized end user requirements*
- ***Phase 2:*** *𝒳-act modules design, implementation and integration*
- ***Phase 3:*** *𝒳-act pilot cases execution*

The Consortium

LMS **Project Manager**

COMAU ROBOTICS

IK4 TEKNIKER Research Alliance

LANCIA FIAT ALFA ROMEO

TOFAŞ TÜRK OTOMOBİL FABRİKASI A.Ş.

Fraunhofer

ALFA hogar

pilz

SIEMENS
(INDUSTRY SOFTWARE LTD) &
(INDUSTRY SOFTWARE SAS)

𝒳-act industrial pilot case presentation

The project pilot cases involve:

✓ *Automotive Sector*

"Dashboard pre-assembly & Hydraulic pump assembly"

Two automotive pilot cases involving flexible and large part manipulation/assembly are investigated by the project. R&D tasks give special emphasis to enhanced Human Robot Interaction (HRI) at the programming and task execution phases.
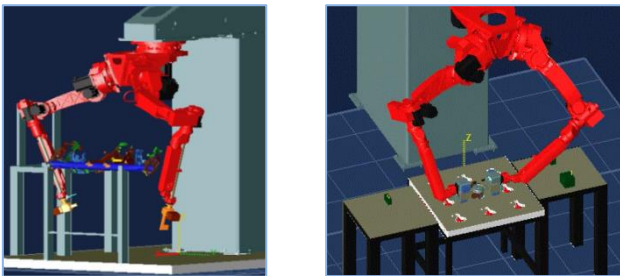
The COMAU RML (Robot Multipurpose Laboratory) dual arm robot has been selected for the development tasks thanks to its advanced manipulation and control capabilities.

✓ *Rework of electrical appliances*
"Sewing machine disassembly"

Disassembly of sewing machines is the case of electrical appliances industry, where the main focus is at exploiting RML potential for human based tasks.
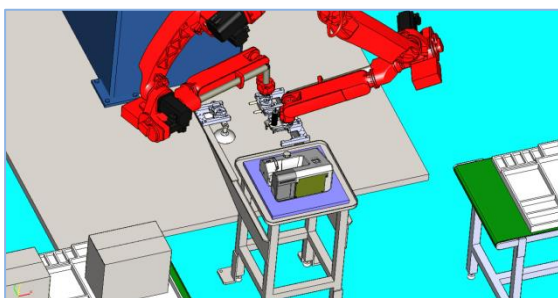
The SIEMENS Process Simulate tools are employed for simulation based validation of the pilot cases.

Next steps

✓ Test beds setup finalization
✓ Control software development on RML
✓ Mechatronics and software integration

𝒳-act news and recent events

✓ **11 October 2012:** Kick off meeting –Athens, Greece

✓ **05-06 February 2013:** 2nd General Assembly meeting-TOFAS, Bursa, Turkey

✓ **21-22 May 2013**: 3rd General Assembly meeting-COMAU, Turin, Italy

✓ **09 July 2013:** RML installation in LMS Lab, Greece

✓ **23 July 2013:** RML installation in TEKNIKER facilities, Spain

𝒳-act upcoming events

✓ **18-19 September 2013:** 4th General Assembly meeting-IPK, Berlin, Germany

𝒳-act relevant projects

✓ AUTORECON, http://www.autorecon.eu/
✓ KNOW4CAR, http://www.know4car.eu/

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