PROJECT NEWSLETTER

December, 2018

OVERVIEW OF THOMAS FOURTH SEMESTER

Message from the Coordinator

Dear Readers,

The third issue of the THOMAS newsletter is signaling the end of the project second year. The first two years of the project have been rich in design and development activities resulting to the first version of THOMAS Operation Production Station (OPS). For the entire consortium this milestone achieved signifies the transition from the design board to the first prototypes being available for testing, demonstration and integration, bringing us one step closer to achieving our vision of flexible and reconfigurable assembly systems.

In this issue you will have the chance to obtain an overview of the most recent developments but also to get a glimpse of the impressions that our project is creating in the scientific and industrial community around the globe. Having established clear ideas and technological progress in its core objectives within the first year, THOMAS is now extending its outreach to the wide audience. The industry driven approach of the project requires that all developments are of benefit and interest to a cross sectorial market and therefore a lot of effort has been put to achieve high visibility of the project results and activities. Fairs, conferences, workshops, multimedia material and scientific publications are some of the activities that initiated the coordinated effort of the project to attract interest of the production and research community. The feedback that we received allowed us to confirm that the original objectives of the project towards a dynamic reconfigurable shop floors employing mobile robots are still valid and most importantly, in the leading trends of the EU manufacturing world.

Looking at the immediate future, the project is facing its next big challenge which is the full replication of its pilot cases in a controlled environment. Within 2019 most of the individual prototypes will be integrated within real world replicas of the actual production cells at the premises of LMS and TECNALIA resulting in the first execution of the automotive (PSA) and aeronautics (AERNNOVA) pilot case respectively. This early testing and validation will be a critical step in the project's roadmap as it will allow to identify all safety and functional implications that arise in real world conditions. Thanks to the continuous efforts of our consortium we feel that the gap between the laboratory tests and the production is constantly decreasing and this further motivates us to keep up.

In the coming year we are preparing several exciting events and we invite all readers to stay tuned for the rollout of the project results.

Best Regards,

THOMAS Project Coordinator

THOMAS 1st Review meeting (Spain)

The project's 1st review meeting took place in Spain on 12th and 13th of April. The 1st day of the meeting, THOMAS consortium with the Project Officer Dr. Jan Ramboer and the expert reviewer visited TECNALIA where they demonstrated the individual technologies developed as well as the preliminary integration and pilot's preparation activities. The 2nd day, the group visited AERNNOVA premises where the 1st physical demonstrator of the project took place successfully with THOMAS Mobile Robot Platform performing mock up drilling in AERNNOVA airfoil structures.

THOMAS in CIRP CATS 2018 (China)

The 7th CIRP Conference on Assembly Technologies and Systems (CATS 2018) took place in China from the 10th to the 12th of May. LMS participated in the conference by presenting a scientific publication, namely *Application of wearable devices for supporting operators in human-robot cooperative assembly task*. Though this presentation, THOMAS human operator side interfaces through smart wearables for enhancing Human Robot Interaction have been disseminated in the CIRP CATS community.

THOMAS Progress

During the last 6 months of the project, THOMAS has achieved the following milestones:

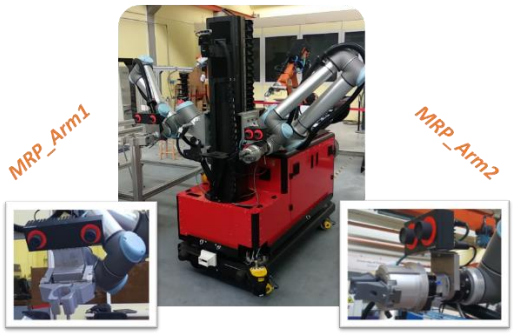
- Updated version of THOMAS Mobile Robot Platform (MRP) including new platform's design, sensors and hardware components. In the latest version of the MRP, new safety sensors such as SICK MicroScan 3 sensors, SICK Flexisoft safety system (including PLCs, safety relays and IO modules), RealSense and Kinect cameras have been installed on its body enabling safe navigation in a human robot collaborative environment.
- Aeronautics pilot case drilling operation demonstration in end user's premises. Before the end of the 2nd year of the project, THOMAS partners demonstrated the drilling operation of the Aeronautics pilot case in AERNNOVA's premises using one THOMAS Mobile Robot Platform.

Mobile Robot Platform (MRP) v1 @ TECNALIA-AERNNOVA, Spain

MRPv1 @ TECNALIA *MRPv1 @ AERNNOVA*

- Automotive pilot case integration activities have already started by LMS. The second MRP of THOMAS project has arrived in LMS premises and most of the hardware equipment (Toolchangers, grippers, cameras etc.) have been installed on its arms. Two tables will be used for the pre-assembly damper's action and for the compression process. 3 replicas of Compression machine's fixture which will be used as Dampers' mounting devices have been designed and produced also by LMS.

Mobile Robot Platform (MRP) v2 @ LMS, Greece



THOMAS Presence in major exhibitions – industrial events

@ IEEE IROS 2018 *@ PSA Booster Day 2018*

THOMAS in BIEMH 2018 (Spain)

BIEMH 2018 exhibition took place this May, on the 28th, in BILBAO Exhibition Centre. TECNALIA was there representing, among others, THOMAS activities. The visitors of the fair had the chance to meet THOMAS Mobile Robot Platform (MRP) and get a glimpse of the AERNNOVA pilot case through a live demonstrator of the drilling use case of the aeronautics pilot.

Factories of the Future Community DAY 2018 (Brussels)

On the 27th of June, THOMAS was present in the FoF Community day 2018 that took place in Brussels. A dedicated presentation to THOMAS technologies and results has been provided by LMS under a clustering session with other EU projects such as MANUWORK and SERENA. This was a great opportunity for THOMAS partners to exchange knowledge and past experience with other European projects working on common topics.

2nd Open Robotics Day 2018 (Greece)

The Project's Consortium

LMS Laboratory for Manufacturing Systems & Automation (Project Coordinator)

PSA GROUPE POLE MULHOUSE

AERnnova

tecnalia Inspiring Business

DGH ingeniería mantenimiento industrial

SICK Sensor Intelligence.

roboception

INTRASOFT INTERNATIONAL

PROJECT NEWSLETTER

Upcoming meetings & events

5th General Assembly:
March 2019 @ DGH, Spain

http://www.thomas-project.eu/

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THOMAS in AUTOMATICA 2018 (Germany)

From the 19th to the 22nd of June, the AUTOMATICA fair 2018 edition took place in Munich. ROBOCEPTION has set a booth for presenting their expertise in real-time perception and manipulation for robotics systems. Among others, the 3D sensor rc_visard product integrated with the object detection application developed under THOMAS project were demonstrated in the booth visitors.

THOMAS 4th Integration Workshop and General Assembly (Greece)

This September THOMAS consortium came together in Patras for realizing their 4th Integration Workshop and General Assembly meeting at LMS premises. On the 18th and 19th of September, the technology providers, SICK, ROBOCEPTION, LMS and TECNALIA had the chance to work together on integrating and testing their developments on the Mobile Robot Platform at LMS. PSA was there giving their valuable feedback concerning the set up of the automotive pilot case. On the 20th and 21st the entire consortium presented and discussed the project's developments and future steps focusing on the implementation of both pilot cases.

Contact us

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