



# PROJECT NEWSLETTER

April, 2018

## OVERVIEW OF THOMAS THIRD SEMESTER

## Message from the Coordinator

Dear Readers,

It has been almost six months since the first edition of the THOMAS newsletter and several exciting advancements have taken place that we would like to share with you. With most of the project development activities being underway, in this and future newsletters, we aim to update the readers about the project outcomes and strengthen the connection between the consortium and the interested parties worldwide.

The last semester has been full of development activities aiming to reach a critical project milestone, that is the individual technology prototypes that will later on be integrated in the THOMAS Open Production Station (OPS). In the following pages you will have the chance to acquire a deeper insight into the design and development of the THOMAS Mobile Robot Platform (MRP) and the modules that implement its key functionalities:

- Perception
- Interaction
- Process execution

For most of the partners, it has been quite a challenge to balance the requirements for performance, safety and intuitiveness but we are on the right track to create truly flexible production resources that can empower the European Factories of the Future. To make sure of this we have already initiated the demonstration activities by setting up pre-pilot environments. The automotive and aeronautics pilot cases are currently being duplicated at the premises of LMS and TECNALIA respectively under the guidance of the end users (PSA and AERNNOVA) who are

invested to ensure that the project results are transferable to their plants.

After several physical integration workshops, the compatibility of the technical developments has been tested and parts of the pilot scenarios have started to be executed in a smaller scale. The findings from these tests have allowed us to redesign the safety concepts of the THOMAS MRP so that the final prototype that will be shortly delivered is suitable for HRC applications.

At the time of writing of this newsletter, the project is headed full speed for its first periodic review which will take place at the premises of TECNALIA in San Sebastian, Spain. The consortium together with the PO, Dr. Jan Ramboer and the project PTA will have the chance to review the progress of these 18 months and receive valuable feedback for the success of the project. AERNNOVA as one of the end users will host the second part of the meeting allowing to review onsite the existing challenges.

We are glad to report that THOMAS has fully started its dissemination and outreach campaign, having a leading role and participating in events around the EU. Highlights include the organization of the Hybrid Production Systems Workshop in ERF 2018 and the participation with live demonstrations in PSA booster Day.

For those of you that did not have the chance to meet with us yet, we invite you to go through our brief report and encourage you to contact us for exchanging our ideas.

Best Regards,

THOMAS Project Coordinator



### THOMAS 1<sup>st</sup> Integration Workshop @ TECNALIA (SPAIN)

The first THOMAS Integration Workshop took place between the 24<sup>th</sup> and 26<sup>th</sup> of October, hosted by TECNALIA on San Sebastian. LMS and ROBOCEPTION participated in the workshop making some initial tests on WP3 (object detection) – WP4 (Skill engine) – WP5 (station controller) interfacing and communication.



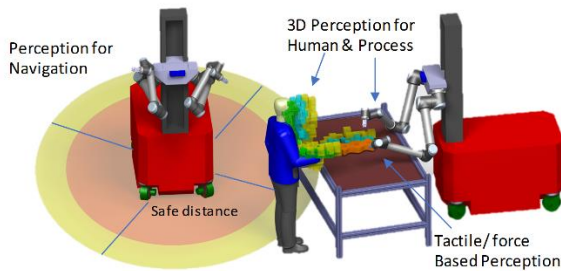
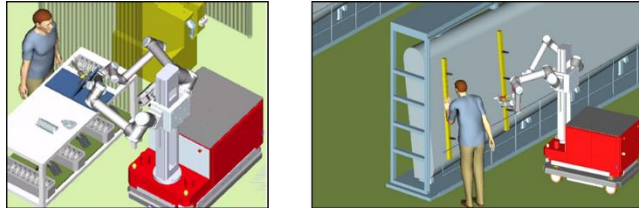
### THOMAS in Hybrid Production System Workshop in ERF 2018 (Finland)

LMS organized the 5<sup>th</sup> workshop on Hybrid Production System aiming to bring together again this year various FoF EU projects under a common clustering activity. The workshop has been hosted by European Robotics Forum (ERF) 2018 in Finland on the 13<sup>th</sup> of March. LMS communicated in the audience THOMAS concepts and initial results taking a lot of positive feedback from the interested stakeholders from academia and industry.

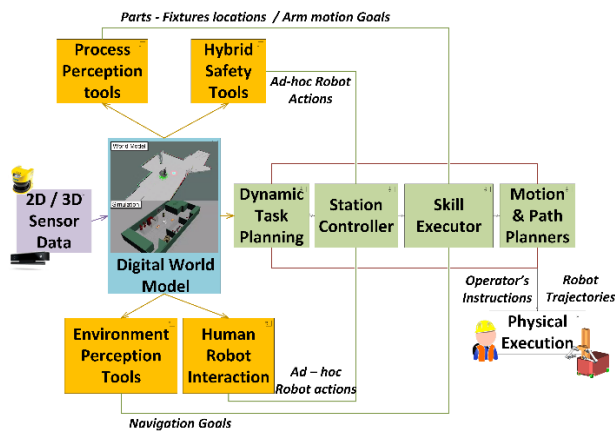
# THOMAS Progress

During the first 18 months, THOMAS has achieved the following milestones:

- **Pilot case scenarios definition** for the automotive and the aeronautics industrial use cases of the project. The scenarios have been selected to match project's objectives. For the evaluation and assessment of the demonstrators a list of Key Performance Indicators (KPIs) has been specified.
- **Individual technologies prototypes** have already been developed by the research and technology provided partners. SICK focused on the safety aspects of the application, ROBOCEPTION delivered the first version of the object detection library while TECNALIA tested the first version of the easy programming framework. LMS supported by INTRASOFT focused their effort on the Dynamic Work re-organization module prototype. The developed applications have been oriented around project's pilots and thus were tested in PSA and AERNNOVA initial test beds that were set up by LMS and TECNALIA respectively.



- **Integration activities** have started from this early phase of the project in order to ensure there will be enough time for testing and refinement among the different releases of THOMAS Production Station (OPS). INTRASOFT lead these activities organizing two dedicated physical workshops and several remote testing sessions.



- **Mobile Robot Platform (MRP) safety related enhancement** provided by SICK based on the outcome of the initial Risk Assessment performed for the automotive pilot case. The MRP is now under construction extending its capabilities in terms of collaboration with humans by adding safety sensors and advancing the implemented safety logic.



## THOMAS in Perception-Models for Task Generalization in Agile Manufacturing in ERF 2018 (Finland)

ROBOCEPTION has been invited as keynote a speaker in the workshop on Perception – Models for Task Generalization in Agile Manufacturing that took place on the 15<sup>th</sup> of March during ERF 2018. In an audience of 40 people ROBOCEPTION had the chance to present and discuss the THOMAS process perception concept along with the aeronautics pilot case description and requirements.



## THOMAS 2<sup>nd</sup> Integration Workshop and 3<sup>rd</sup> General Assembly meeting @ LMS (Greece)

THOMAS consortium physically reunited for another meeting, this time in Patras, Greece, between the 27<sup>th</sup> of February and 2<sup>nd</sup> of March. The technical partners, SICK, ROBOCEPTION, TECNALIA, LMS, met at the beginning of the meeting towards working together under the 2<sup>nd</sup> Integration Workshop of the project. The integration focused on the building the required mechanisms to facilitate the fusion of the safety sensor data inside ROS environment, the object detection set up for PSA test bed and the Station controller interfacing to the Skill engine. The last two days, all the consortium gathered for the 3<sup>rd</sup> General Assembly meeting. During this meeting, the progress of each technical workpackage has been shared among the partners while fruitful discussions were made on the joint dissemination and exploitation plans of the consortium.

# The Project's Consortium



## THOMAS in LMS Open Robotics Day (Greece)

LMS has organized an Open Robotics day at the laboratory's machine shop on the 29<sup>th</sup> of March. The aim of this open day was to attract students and young researchers by introducing them to the robotics world. More than 30 undergraduate and graduate engineers attended the Open Day. Through a dedicated stand the visitors had the chance to learn about THOMAS project and watch a live demo of the Object detection module on the PSA test bed as well as the Human Robot Interaction mechanisms through PSA simulated environment.

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### Next meeting:

1<sup>st</sup> Review meeting April 2018 @  
TECNALIA / AERNNOVA (Spain)

4<sup>th</sup> General Assembly Meeting:  
October 2018 @ LMS, Greece

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

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## THOMAS in Global Industrie 2018

Between the 27<sup>th</sup> and the 30<sup>th</sup> of March, Global Industrie national fair took place in Paris, France. The event hosted more than 2000 exhibitors and more than 50.000 visitors. PSA had a booth in the event through which they disseminated THOMAS concepts and ideas to the wide public.

## Contact us

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## Upcoming Events

THOMAS in BIEMH 2018 with a live demonstrator

