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PRESS RELEASE

AGIMUS: Delivering open-source breakthrough innovation in AI-powered agile production

The AGIMUS project, supported by the European Union under Grant Agreement No. 101070165 began in October 2022 and is set to run for 48 months. The project aims to enhance the perception, planning and control capabilities of robotics, enabling general-purpose robots to be autonomous, easily adaptable to changes in the manufacturing process, and quick to set up. To achieve that, AGIMUS leverages on cutting-edge technologies and goes beyond the state-of-the-art to equip current mobile robotic platforms with sophisticated task and motion planning capabilities that can be trained using videos that are available online.

Led by the Centre National de la Recherche Scientifique (CNRS), the AGIMUS consortium consists of 9 partners, namely CNRS, Ceske Vysoke Uceni Technicke V Praze (CTU), Institut National de Recherche en Informatique et Automatique (INRIA), PAL Robotics SL (PAL), TOWARD SAS (TOWARD), Q-PLAN International (Q-PLAN), AIRBUS (AIRBUS), KLEEMANN Hellas SA (KLEEMANN) and THIMM Obaly KS (THIMM), across France, Czechia, Greece and Spain.

Over the past six months, comprehensive research was conducted to identify the technical and ethical requirements, challenges, barriers, drivers and enablers of agile production using versatile robotics AGIMUS' baseline framework was defined based on the results of this research. The identified requirements will be transformed into specific technical system requirements that will define AGIMUS' system architecture, a crucial step towards delivering an open-source breakthrough innovation in AI-powered agile production.

Meanwhile, AGIMUS partners have published the following research papers (i) "Multi-contact task and motion planning guided by video demonstration", (ii) "Differentiable Collision Detection: a Randomized Smoothing Approach" and (iii) "Enforcing the consensus between Trajectory Optimization and Policy Learning for precise robot control", that will be presented at ICRA 2023.

Furthermore, the consortium was actively engaged in important international events, including the Humanoids 2022 Conference's, the "Start in Lab" event organized by Digital 113 and the European Robotics Forum (ERF) 2023.

To promote collaboration and knowledge exchange, AGIMUS has pursued synergies with various Horizon Europe projects such as CONVINCE, CoreSense, HARIA, INTELLIMAN, MOZART, PILLAR-ROBOTS, REGO and SESTOSENSO. Additionally, meetings have been held with key projects and networks such as ADRA-e and euROBIN.

Throughout the project activities, trajectory optimization and robot motion planning will be explored, simultaneous methods for task-and-motion planning will be developed, software for estimating human and object/tool trajectories will be created, a method for estimating the 6D pose of an object from an image will be developed and a whole-body Model Predictive Control (MPC) system that can recompute an optimal trajectory from the robot state estimation will be designed.

You may find more information about the project and keep up to date with its progress and developments, by visiting the AGIMUS website (www.agimus-project.eu), where you may also

subscribe to the AGIMUS newsletter. Additionally you can follow AGIMUS' social media accounts on on [LinkedIn](), [Twitter](), [Facebook]() and [YouTube]().

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