SEVENTH FRAMEWORK PROGRAMME

Plug-and-produce **CO**mponents and **MET**hods for adaptive control of industrial robots enabling cost effective, high precision manufacturing in factories of the future

COMET

COMET Project Discuss Innovative Robot Machining Developments

Delcam recently hosted a Technical Project Meeting in Birmingham, UK, to discuss the latest robot machining technologies being developed for the COMET project. With members attending from six partners across Europe, including SIR, AMRC Manufacturing Ltd, DCS, Lund University, TEKS and BTU, the meeting focused on the software development section of the COMET project and the results of industrial robot machining experiments undertaken at different COMET robot cells.

The Programming and Simulation environment for Industrial Robots (PSIR) module, lead by Delcam, has been developed to work in conjunction with the Kinematic and Dynamic Models for Industrial Robots (KDMIR) module produced by BTU and Lund University. The KDMIR module is designed to modify the toolpaths from Delcam's

Paul Lightowler from Nikon Metrology explains robot frames to volunteers

PowerMILL Robot Interface in the PSIR module in order to counter the robot backlash effects witnessed in the robot machining tests at BTU, Delcam, Fraunhofer IPA, TEKS, SIR and AMRC Manufacturing. By measuring the robot's characteristics and accurately compensating the toolpaths programmed in PowerMILL prior to post processing, European manufacturers will be able to improve the quality of parts machined with industrial robots. The PSIR and KDMIR modules form the offline compensation part of the COMET project which will be highlighted in a video after the 6th General Assembly meeting at Lund University scheduled in April.

During the meeting the consortium members visited Nikon Metrology in Tamworth, UK, for a demonstration of their Adaptive Robot Control (ARC) technology, an integral part of the online compensation route in the COMET project. ARC activates a closed metrology-driven feedback loop that firmly increases the precision of industrial robots. Regardless of whether robots are deployed for machining, inspection, applying beads or manipulating objects, robot tasks are consequently executed with 0.2mm absolute accuracy, irrespective of play, mechanical flexibility, backlash or thermal effects.

Johnny van der Zwaag, Project Manager R&D Projects at Delcam commented: "The magnificent developments at BTU and Lund University for the KDMIR module, along with the continued development of the PowerMILL Robot Interface and the Adaptive Robot Control, means that the COMET project is well placed to provide European manufacturers with significant advantages in machining with industrial robots".
For more information about the COMET project visit *http://www.comet-project.eu.*