

Fully automated Design of Position Control for Robots with eliminated Output Oscillations

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Martinsried / Munich, Germany, June 29 2009 - With ecICP, ExpertControl now offers for the robot industry a software tool to gain substantial quality increase in terms of position control even when no sensors are used to detect the output position oscillations. The new capabilities of ecICP factor this missing oscillation information in, help to increase SCARA robots' accuracy and provide at the same time both optimal setpoint behavior and optimal disturbance rejection.

Many robot manufacturers wonder how to apply PID tuning methods best to eliminate output position oscillations quickly and effectively. Unfortunately, the problem is not only the controller design itself but the missing information about these oscillations. Just applying model-based design techniques does not yield the desired results if this key information is missing and cannot be incorporated into the design process. However, due to the advanced capabilities, ecICP is able to calculate even in this case a precise position control while substantially eliminating oscillations. The perfect parameterization of the controllers for SCARA robots with respect to the output oscillation works as follows: (1) Stimulate the setpoint of the insufficiently controlled system, (2) observe and technically describe the resulting output oscillations, (3) enter the oscillation description into ecICP to compensate the missing output sensor information. As a result of this, robot manufacturer can benefit from ecICP's fully automated system identification and control design techniques which include calculating the perfect controller structure as well as the perfect controller parameters, automatically. Output oscillations are now possible to be controlled because ecICP's control design results cover the complete system dynamics: the measured data from the actuator and the additional information from the output oscillations. This extremely efficient and safe tool supported way to design controllers with ecICP leads furthermore to less development time, higher quality, improves the planning ability and the process reliability.

Further information on the above and topics in areas including closed-loop control engineering, simulation and real time applications may be found at www.expertcontrol.com.

About ExpertControl:

ExpertControl (www.expertcontrol.com) is developing and marketing powerful engineering software tools for standalone use and for various development environments including LabVIEW, The MathWorks, Inc. MATLAB® and Maple. In the control design context, EC is focusing on providing automated software solutions for different application and industry areas, especially where reliable and high quality results are needed in very limited amount of time. EC is based in Martinsried/Munich, Germany, and operates with distribution partners in USA, Japan, Korea, China, Taiwan and Israel to support the products worldwide.

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