

PRESS RELEASE



Ricardo plc
Shoreham Technical Centre,
Old Shoreham Road,
Shoreham-by-Sea,
West Sussex,
BN43 5FG, UK

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Toyota and Ricardo research team wins prestigious Society of Instrument and Control Engineers award

- **Award recognizes work by Toyota and Ricardo engineers in developing and demonstrating the Reference Governor (RG) concept**
- **The RG concept uses a mathematical model to continuously predict engine behaviour a few seconds into the future**
- **This technology has the potential to significantly reduce calibration time and effort while preserving emissions control performance**

The award was made by the Japanese Society of Instrument and Control Engineers (SICE) at the annual conference of its Control Division which was held in Fukuoka, Japan. It was based on a paper presented at the conference by Toyota and Ricardo engineers who have been collaborating on the RG project.

RG is a model-based control technique with potential to significantly reduce engine calibration effort, which is also applicable to many other applications with feedback-control systems. It uses a mathematical model to predict behaviour of the engine a few seconds into the future, enabling optimization of the control strategy. In the future, this could remove the requirement for calibrators to spend time tuning so-called transient corrections. The mathematical model builds in knowledge of engine characteristics, making the calibrator's job easier and engine control more effective.



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Two RG projects have been pursued by Toyota with Ricardo support: firstly, aftertreatment temperature control, and secondly, air path control. The first of these is the subject of the award announced today.

“Ricardo is extremely proud to have received this prestigious award together with our colleagues and research partners at Toyota,” said Ricardo Japan president Akio Okamura. “Model based control methodology offers the prospect of more efficient calibration effort and effective engine and aftertreatment systems control. I would like to personally thank Toyota for selecting Ricardo as its partner on this important research project, and also the Society of Instrument and Control Engineers for recognizing the hard work and dedication of the Toyota and Ricardo engineers who have progressed development of this very promising control concept.”

“Toyota is pleased that the work of its engineers, alongside their colleagues at Ricardo, has been recognized with this award,” added a spokesperson for Toyota Motor Corporation. “We thank Ricardo and SICE for the success to date and continue to work on model based control development with the aim to reduce engine development workload and speeding up the development process.”

Ends



NOTES TO EDITORS:

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Old Shoreham Road,
Shoreham-by-Sea,
West Sussex,
BN43 5FG, UK

Media contact:

Anthony Smith
Ricardo Media Office
Tel: +44 (0)1273 382710
E-mail: media@ricardo.com