



New external physics plug-in technology makes full motion simulation more accessible and affordable to race car designers and engineers

- *Matlab Simulink-based modelling for Racer Pro software opens doors to unlimited driver-in-the-loop testing of a larger numbers of vehicle models using Cruden simulators*

Cruden B.V. – the world’s leading designer and manufacturer of interactive motion-based simulators – is making its affordable simulators even more accessible to motorsport companies and their suppliers with the introduction of a new external physics plug-in. Engineering teams working on steering, braking, electronic control, tyre and chassis systems can now seamlessly and automatically integrate their MATLAB Simulink-based vehicle models with the Cruden simulator. This allows unlimited evaluation of multiple models incorporating all-important driver feedback in a repeatable environment without the time and cost of testing at a test track.

The move is a response to demand from automotive suppliers and race teams interested in Cruden simulators – the company’s motion-cueing expertise, system accuracy and realism is world-renowned – who want to build their vehicle models in industry standard software packages. Cruden’s external physics engine or ‘ePhyse’ option eliminates the need to build vehicle models in the simulator’s internal physics environment using C++ code. Now, via the Racer Pro Target in Simulink’s real Time Workshop, the programme automatically mates customer’s vehicle model data – such as gear change, throttle position, brake pressures and balance, throttle mapping– and extracts the necessary outputs to drive the simulator’s hardware and graphics. The system offers real time data logging and parameter tuning on-the-fly via Real Time Workshop which means engineers can change parameters and monitor signals constantly through the simulation.

“Cruden has been working with race teams and race car designers for many years, and as with all evolving technologies, simulation has developed to become accessible to lower racing formulae,” says Frank Kalff, Cruden’s commercial director. “The business case for teams in GP2, GP3 and Formula 3 acquiring one of our simulators is now even stronger.”

As a result of the new technology, Cruden anticipates strong interest from the motorsport industry in its Hexatech professional full motion simulator. The electromechanical system offers six ‘degrees of freedom’ (6DOF) and realistic g-Force simulation up to multiple g’s.

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About Cruden

Cruden is the world’s leading designer and manufacturer of interactive, motion-based racing simulators. The company develops the most high tech, realistic and accurate professional equipment for the top levels of international motorsport, including Formula One, as well as vehicle manufacturers and their suppliers. The same package is then made available to the global entertainment market and to private individuals to create a motorsport experience which simply does not compare with ‘games’ machines on the market. Cruden’s heritage is in the development of professional simulators for the aerospace, marine and automotive industries. Originating from Fokker Aircraft Company, the company was FCS Racing Simulation before becoming Cruden in 2006.

www.cruden.com

11/08/2010 ePhyse plug in for motorsport app

Press Enquiries

Claire Dumbreck, Propel Technology, Bloxham Mill, Barford Road, Bloxham, Banbury, Oxfordshire, UK, OX15 4FF. +44 (0)1295 724130 / +44 (0) 7768 773857



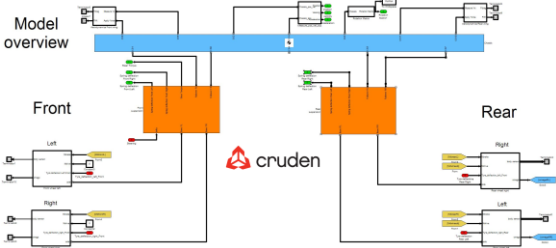
c.dumbreck@cruden.com

Sales Enquiries

Frank Kalff, Cruden B.V. Fokkerweg 300. Building 67, 1438 An Oude-Meer, The Netherlands. +31 207074 646 / +31 627 053493

f.kalff@cruden.com

Pictures

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	<p>Cruden can supply open or closed cockpits, fit bodywork or use actual vehicles, and apply the livery of a race or road vehicle according to the attraction theme.</p>
	<p>Thanks to a new external physics plug-in, engineers working on steering, braking, electronic control, tyre and chassis systems can now seamlessly and automatically integrate their MATLAB Simulink-based vehicle models with the Cruden simulator. Pictured: the screen view of the inputs and outputs of Cruden’s generic formula race car model.</p>