

## MSC's Adams Real Time delivers Hardware-in-the-Loop Solution

NEWPORT BEACH, CA--(March 2017) – [MSC Software Corporation](#), a global leader in helping product manufacturers to advance their engineering methods with simulation software and services, today announced the first release of MSC Adams Real Time. [Adams Real Time](#) expands on Adam's groundbreaking multibody dynamics simulation solution to deliver Real Time analysis capabilities. The release will be available in April 2016.

Highlights of the release:

- **Real Time Analysis on Concurrent Platform**

Adams Real time allows users to run their analysis in the Concurrent's SIMulation Workbench (SimWB) real time modeling environment, on the RedHawk Linux operating system.

The Adams Solver can participate in co-simulations performed in the SimWB real time environment. This is achieved by extensions to Adams' support for the Functional Mockup Interface (FMI).

A functional mockup (FMU) unit exported from Adams Controls or Adams Mechatronics within Adams View or Adams Car can now be imported into SimWB. Adams Real time allows users to integrate their Adams model with their hardware controller, or driving simulator through SimWB.

- **Adams Real Time Integrator**

In this release a new fixed step integrator is introduced for the Adams solver. The purpose of the fixed step option is to ensure that a fixed amount of work is completed in a given time to satisfy the requirements for a Linux real time operating system (RTOS).

This option can be employed regardless of the environment; that is, it can be used also in non-RTOS scenario, for example, to help determine ahead of time if a given analysis can be suitable for real-time simulation and if the results will be acceptable. Along with the Adams solver's compatibility with the concurrent platform, users can perform real time simulation.

- **Local Tire Solver**

By default, the Adams Tire models are calculated by the Adams Solver. With this release, PAC2002, now offers the option to calculate the tire equations internally instead of passing this calculation to the Adams Solver. In particular, for tires with advanced transient or belt dynamics options, this will reduce the work load for the Adams Solver and will reduce the required Central Processing Unit (CPU) time of the solution and thus increasing simulation speed.

- **Direct Mode and Multi-threading for FMI Co-simulation**

With this release of Adams, a new "Direct" communication option for FMI-based co-simulation has been implemented. This option will improve the communication performance between the FMU master and

slave during co-simulation. It is accessed from the Adams Controls Plant Export dialog and is available for Adams co-simulations.

Adams Solver Shared Memory Processing (SMP) multi-threading strengthens the co-simulation performance, specifically with high-fidelity Adams models.

“The primary value proposition of Adams Real Time is the ability to stay in one modeling environment and transition from high-fidelity off line models to Software-in-the-loop (SiL), and then Real Time versions of those same models that can be used for Hardware-in-the-loop (HiL), driving simulators, Advanced Driver Assistance Systems (ADAS), etc. Our customers, who have long trusted the accuracy and reliability of Adams for their predictions, have asked us to provide this same certainty for Real Time studies. This one tool / one model approach reduces the number of software products in play and increases process confidence by eliminating time consuming and error-prone model translations between different tools.”

- Peter Dodd, Vice President for System Dynamics at MSC Software

### **About MSC Software**

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