

# PRESS RELEASE

## MSC Nastran and AVL EXCITE™ Integrate to Deliver Better, Faster and More Efficient Powertrain Simulations

(NEWPORT BEACH, CA, August 2018) – [MSC Software Corporation](#), a global leader in simulation software and services, today announced the new release of MSC Nastran 2018.2. Originally developed for NASA engineers, MSC Nastran is the most trusted FEA solver for design and analysis of aerospace and automotive structures. The proven solutions of MSC Nastran have been commonly used by industries for the past 50 years. To build upon the same practice, MSC Nastran 2018.2 provides streamlined workflows for powertrain simulations, improved verification options for contact models and enhanced HPC methods for simulation of large scaled problems.

Through a direct coupling between MSC Nastran and AVL EXCITE the new release allows engineers to perform the analysis of dynamics and acoustics of powertrain systems faster and more accurate.

AVL EXCITE is a multi-body dynamic simulation software that provides rigid and flexible solutions for analysis of powertrain systems. The powerful solutions of AVL EXCITE family are equipped with advanced technology to calculate dynamics, strength, vibration and acoustics of conventional and electrified powertrains. Engineers can create accurate models that account for all physical properties of materials and lubricants to predict contact behavior, friction, and wear in slider bearings, pistons, piston rings and gears.

With the new direct coupling AVL EXCITE can now be used with MSC Nastran to increase the accuracy of Multi Body simulations by providing a better representation of the flexible components. Similarly, the FEA engineers can benefit from this integration to examine each component with realistic boundary conditions and dynamic loads. Direct export of AVL EXCITE input (.EXB) files from MSC Nastran makes data transfer much easier and faster, eliminating the need for creating and translating large intermediate files. “The streamlined workflow between MSC Nastran and AVL EXCITE is aimed to improve product performance, reliability and safety. The tried and trusted method can provide design engineers with significant time savings,” said Paul Herster, AVL EXCITE Product Manager.



The workflow allows engineers to obtain a full characterization of structural response by leveraging the nonlinear solution of MSC Nastran (SOL 400) to include contact nonlinearities as well as preloaded conditions in their powertrain simulations. Additionally, MSC Nastran can read back output results from AVL EXCITE for further dynamic and acoustic analysis of sound radiations generated from Internal Combustion Engines and other components. This technology is also beneficial for vehicle durability simulations, taking advantage of the award-winning embedded fatigue capabilities of MSC Nastran to obtain fatigue life and damage responses of components.

The direct, efficient and convenient method to exchange data between the two solvers enables significant time savings, resulting in up to 3x performance gain for analysis of powertrains and engine systems.

### **About MSC Software**

MSC Software is one of the ten original software companies and a global leader in helping product manufacturers to advance their engineering methods with simulation software and services. As a trusted partner, [MSC Software](http://www.mscsoftware.com) helps companies improve quality, save time, and reduce costs associated with design and test of manufactured products. Academic institutions, researchers, and students employ MSC's technology to expand individual knowledge as well as expand the horizon of simulation. MSC Software employs 1,300 professionals in 20 countries. For more information about MSC Software's products and services, please visit: [www.mscsoftware.com](http://www.mscsoftware.com)

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### **About AVL**

Founded in 1948, AVL is the world's largest independent company for development, simulation and testing technology of powertrains (hybrid, combustion engines, transmission, electric drive, batteries and software) for passenger cars, trucks and large engines.

AVL's business unit Advanced Simulation Technologies develops and markets simulation solutions focusing on design and optimization of powertrain systems covering all phases of the development process.



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The headquarters are located in Graz, Austria, worldwide AVL has more than 45 affiliates. AVL's North American Headquarters are located in the Detroit suburb of Plymouth, Michigan. For more information about the AVL EXCITE product family, please visit [www.avl.com/excite](http://www.avl.com/excite).

