

# Actran 14 Delivers Breakthrough Acoustic Radiation Technologies & New VibroAcoustics and AeroAcoustics Capabilities

SANTA ANA, CA--(Business Wire – September 5, 2013) – [MSC Software Corporation](#), the leader in multidiscipline simulation solutions that accelerate product innovation, today announced the release of [Actran 14](#), a powerful Acoustics simulation software used by engineers to predict and reduce noise as well as optimize sound in products. Key highlights of the [Actran 14](#) release include:

- Acoustic radiation for high frequency & system-level analyses
- Enriched vibro-acoustics that reflect more complex physics
- New fan noise technologies that save engineering time
- Enhanced power and efficiency for trimmed vehicle body NVH

**Acoustic Radiation:** [Actran 14](#) brings about a revolution in the technology to predict sound radiation from vibrating structures. This revolution is achieved by the Discontinuous Galerkin Method (DGM) technology. DGM is a very powerful time-domain solver that is well adapted for large-scale problems. The computation can be distributed into a large number of CPUs, each with limited RAM requirements.

Adaptive Perfectly Matched Layer (APML) is an extension to the existing PML technology. It allows engineers to model acoustic radiation, within the finite element approach, more easily and more efficiently. Based on the analyzed frequencies, different PML meshes are created automatically by the new integrated APML volume mesher. This automation not only provides optimized computational time, but also saves meshing time for engineers so they can focus more on the results that Actran produces to optimize their designs.

**Enriched VibroAcoustics:** In vibro-acoustics, engineers need to simulate the complex physics of the real world that are represented by numerical models. With [Actran 14](#), engineers have access to more structure element types and complex formulations for porous materials, a broader scope for modeling of visco-thermal acoustic loss, and finally, more possibilities of dynamic loading from turbulent boundary layers at various flow conditions.

**New Fan Noise Technologies for tonal noise:** In the past, fan noise was addressed by coupling transient compressible CFD with [Actran](#). However, the simulation process was affordable only by those customers who have heavy CFD computational resources. With the new technology that is embedded into Actran 14, tonal fan noise prediction is possible with significantly less expensive CFD computations, based on Multiple Reference Frame(MRF) or Non-Linear Harmonic (NLH) CFD techniques.

**NVH studies of trimmed vehicle bodies:** The NVH studies of trimmed vehicle bodies are important for both the improvement of passenger comfort and the optimization of vehicle weight. With [Actran 14](#), the existing trimmed body modeling technologies were reworked to allow engineers to model more complex trim components with more flexible installation in the vehicle models that run with fewer computational resources. With that improvement, on a typical industrial trimmed body model, customers have a reported gain of up to 5 times in terms of CPU time. This same capability is also now available in MSC Nastran as an add-on module.

For more information, please view the **on-demand webinar** by clicking on the following link: [http://www.mscsoftware.com/events\\_assets/Webcasts/2013\\_Acoustics/actran14/actran14.html](http://www.mscsoftware.com/events_assets/Webcasts/2013_Acoustics/actran14/actran14.html)

### **About MSC Software**

MSC Software is one of the ten original software companies and the worldwide leader in multidiscipline simulation. As a trusted partner, [MSC Software](#) 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 1,100 professionals in 20 countries. For additional information about MSC Software's products and services, please visit: [www.mscsoftware.com](http://www.mscsoftware.com)

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