ESI releases the latest version of VA One

The most complete vibro-acoustic simulation tool on the market

Paris, France – January 15, 2014 – ESI Group, leading solution provider in Virtual Prototyping software and services for manufacturing industries, launches its latest version of VA One. The only solution on the market providing a complete simulation environment for vibro-acoustic analysis and design, VA One covers the full frequency range. The software seamlessly combines key vibro-acoustic modeling methods, Finite Elements (FEM), Boundary Elements (BEM), and Statistical Energy Analysis (SEA), in a single model. This latest release focuses on providing increased flexibility for daily use, seamless coupling with open source Computational Fluid Dynamics (CFD) software OpenFOAM® and supporting advanced aeronautic materials.

Vibro-acoustic engineers need the right model at the right time, and there are as many model requirements as there are milestones in a project – sometimes engineers require fast overnight computation, sometimes what they desire is extreme precision. The new VA One provides this flexibility along with a new automatic model checking function, which ensures that computations will not fail overnight because of some missing parameter.

The new DMP (Distributed Memory Processing) BEM solver now delivers superior performance on High Performance Computing architectures, reducing computational times by a factor of 10 for large cases. It enables faster calculations, which is especially beneficial when faced with tough challenges such as the assessment of vehicle pass-by noise that will be required of automotive OEMs by upcoming regulation UN/ECE R51.03.

The new VA One also provides automated user assistance when setting up a large number of load cases (e.g. for powertrain run-up simulations), reducing import time from several hours to only a few seconds. The objective is to minimize time-consuming jobs by automating them, so engineers can focus on high value-added tasks.

Automatic coupling with the open source CFD software OpenFOAM® is added in this latest version of the software, enabling vibro-acoustic engineers to make quick predictions of the performance of their designs in the presence of stationary flow components. The new utility generates standard OpenFOAM® meshing automatically and updates the vibro-acoustic models with local fluid dynamics properties (e.g. Mach vectors) for easy integration into VA projects involving propagation in ducts, mufflers, and other similar cases. The full automation of CFD model set-up, meshing and post-processing from within VA One makes CFD calculations easily accessible to non CFD-specialists.

Steven G. Mattson, President of Great Lakes Sound & Vibration (GLSV), based in Michigan, USA, has used VA One for a number of years and more specifically for recent projects to develop silencers for exhaust systems. **Mattson** comments, *"The introduction of flow effects into FEA acoustics models enables GLSV to evaluate the installed performance of engine silencing systems*

more accurately and with a higher level of confidence. Because the CFD is integrated into the workflow, it allows us to perform multiple design iterations, including flow effects, in a short time frame. VA One 2014.5 provides a significant capability increase with the added functionality of flow effects."

The latest version of VA One also contains significant advances in SEA modeling of complex plates. ESI's research teams have worked on a set of new formulations to accurately and quickly calculate the vibro-acoustic response of structures fabricated with the newer materials that are increasingly used in the aerospace industry, including sandwich panels with composite skins, composite panels and laminated visco-elastic panels. Thanks to these new developments, VA engineers can now assess the impact of turbulent boundary layers excitations on every possible type of panel, whatever their thickness and structure type.

An important evolution in the new VA One has been made in the arena of Cloud Computing to satisfy the needs of small companies requiring high performance computing facilities on an ad-hoc basis, and larger ones requiring a temporary increase in their computing capacity. ESI has partnered with Cloud Computing provider Rescale to offer Computing-on-Demand facilities for VA One. Through the built-in functionality added in VA One, users can now securely submit a BEM calculation from their desktop to the cloud. This enables them to reduce turnaround time and automatically recover results locally for post-processing and analysis. For more information about this new offer, please visit www.rescale.com

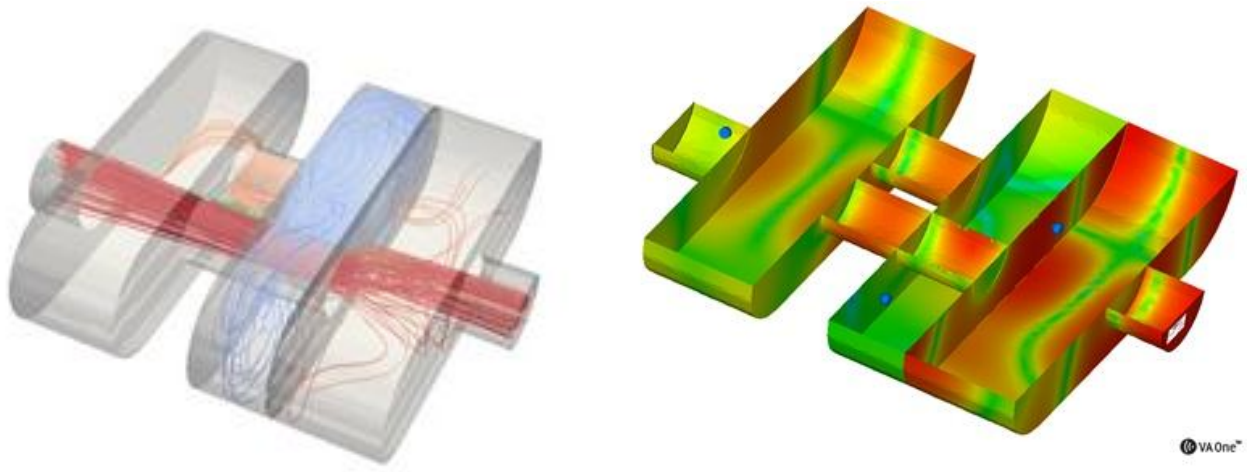

Image: Simulation of an automotive muffler: CFD streamlines (left) and acoustic response (right).

For more information about VA One, please visit: www.esi-group.com/VAOne

For more ESI news, visit: www.esi-group.com/press

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About ESI Group

ESI is a world-leading provider of Virtual Product Engineering software and services with a strong foundation in the physics of the materials of which products are built.

Founded over 40 years ago, ESI has developed a unique proficiency in helping industrial manufacturers replace physical prototypes by virtually replicating the fabrication, assembly and testing of products in different environments. Virtual Prototyping enables ESI's clients to evaluate the performance of their product, and the consequences of its manufacturing history, under normal or accidental conditions. By benefiting from this information early in the process, enterprises know whether a product can be built, and whether it will meet its performance and certification objectives, before any physical prototype is built. To enable customer innovation, ESI's solutions integrate the latest technologies in high performance computing and immersive Virtual Reality, allowing companies to bring products to life before they even exist.

Today, ESI's customer base spans nearly every industry sector. The company employs about 1000 high-level specialists worldwide to address the needs of customers in more than 40 countries. For further information, visit www.esi-group.com.

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