Paris, France, June 27, 2013

Hyundai Motor Company virtually tests for seat vibrations early in the development process thanks to ESI's Virtual Seat Solution

Improving the comfort of vehicle occupant

Paris, France – June 27, 2013 – ESI Group, pioneer and world-leading solution provider in virtual prototyping for manufacturing industries, announces that Hyundai Motor Company has extended its usage of Virtual Seat Solution to dynamic comfort testing, in order to assess and improve the vibratory comfort of their car seats.

Reducing seat vibrations greatly contributes to improving a seat's overall dynamic comfort, by protecting the occupant from muscular fatigue; an important issue for long journeys and with possible long-term effects on the spine. **Han Ji Won**, Engineer, Body & Trim development team at Hyundai Motor Company, declares, *"Since seats contain lots of components, it's very difficult to find the factors that influence the dynamic comfort of the seat. We tried to figure this out using ESI's Virtual Seat Solution and reached our goal. This new way of working will help us save money and time effectively."*

ESI's end-to-end Virtual Seat Solution, dedicated to the virtual manufacturing, testing and optimization of seats, has been used by Hyundai for many years to conduct virtual tests in several seat performance domains; including seating posture and body pressure and foam hardness. Recently, Hyundai's Body & Trim development team sought to extend their usage of Virtual Seat Solution to evaluate dynamic comfort.

Traditionally, carmakers assess seat vibrations by asking volunteers to provide feedback on vibrations they experience; a method that delivers highly subjective results and has poor repeatability for many reasons, including the change of volunteer morphology with time. In an effort to overcome these drawbacks, Hyundai engineers started by developing and calibrating a new dynamic dummy model dedicated to vibratory tests.

With ESI's Virtual Seat Solution, Hyundai engineers now use their dynamic dummy model to perform complete virtual dynamic tests of an occupied seat. The first step is to simulate the dummy sitting in the seat. This step is mandatory as it allows determination of the non-uniform compression of the foam in cushions of the occupied seat.

ESI is the pioneer and world-leading solution provider in virtual prototyping.

Market Data

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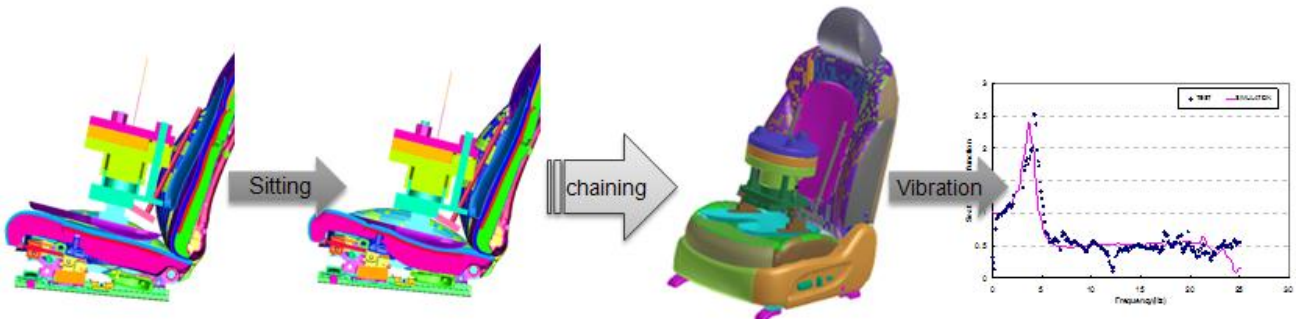

Seat and dummy model used to test virtually dynamic comfort performance with Virtual Seat Solution; Graph showing good correlation between real and virtual prototypes.

The second step is to simulate the vibrations test with the seated dummy to obtain the transfer function that describes the capacity of the seat to absorb the vibrations. To achieve good correlation with real testing it is essential that the seat model – in particular the foam - inherits the correct properties from both the seat fabrication and dummy seating by "chaining" simulations of each step in the complete process.

Thanks to this fully validated dummy model, Hyundai performs virtual dynamic comfort testing with ESI's Virtual Seat Solution earlier in the development process and can better arrive at the right seat design. The virtual vibration test is accurate and partly replaces real prototypes, thus allowing the car manufacturer to develop more comfortable seat designs in less time and at less cost. Virtual Seat Solution also saves time and increases efficiency by using a single core model of the seat to support evaluation of several seat performance domains and to enable design team collaboration.

About Hyundai Motor Company

Hyundai Motor Company is a South Korean company founded in 1967. The company employs about 75,000 persons worldwide and sells vehicles throughout 193 countries. According to the brand consulting group Interbrand, their brand value reaches USD 6 billion in 2011. Hyundai Motor Company manufactures innovative cars from design to chassis including package layout ergonomics, powertrain and electronics. They take into account new technology and safety for new technologies. Hyundai has R&D centers in Namyang and overseas and gradually increases investment to develop core technologies for eco-friendly cars, such as hybrid and electric vehicles, as well as advanced in-vehicle electronic technology.

About ESI Group

ESI is a pioneer and world-leading provider in Virtual Prototyping that takes into account the physics of materials. ESI boasts a unique know-how in Virtual Product Engineering, based on an integrated suite of coherent, industry-oriented applications. Addressing manufacturing industries, Virtual Product Engineering aims to replace physical prototypes by realistically simulating a product's behavior during testing, to fine-tune fabrication and assembly processes in accordance with desired product performance, and to evaluate the impact on product use under normal or accidental conditions. ESI's solutions fit into a single collaborative and open environment for End-to-End Virtual Prototyping. These solutions are delivered using the latest technologies, including immersive Virtual Reality, to bring products to life in 3D; helping customers make the right decisions throughout product development.
The company employs about 1000 high-level specialists worldwide covering more than 40 countries. ESI Group is listed in compartment C of NYSE Euronext Paris.

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