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

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ESI consolidates its offer in Computational Electromagnetics with CEM Solutions 2013

Helping engineers manage electromagnetic complexity as they design products

Paris, France – July 18, 2013 – [ESI Group](#), pioneer and world-leading solution provider in [Virtual Prototyping](#) for manufacturing industries, announces the launch of CEM Solutions 2013. A fully-integrated solution to address all aspects of [Computational Electromagnetics \(CEM\)](#) within a unified GUI environment, [CEM Solutions 2013](#) is dedicated to all engineers involved in the safe electromagnetic design of products.

The increasing number of electronic systems and subsystems in everyday products, from cars to aircrafts and home appliances, generate an increased complexity with regards to electromagnetic compatibility. Moreover, manufacturers are required to comply with certain international [Electromagnetic Compatibility \(EMC\)](#) regulations. While striving to save time and to control costs, manufacturers have identified the importance of addressing compatibility issues and comply with EMC standards as early as possible in the design process – something that can easily be done by implementing the right simulation solutions, allowing for an early assessment of design models.

This is exactly what ESI offers with its new software suite [CEM Solutions 2013](#), a complete and coherent solution for Computational Electromagnetics that integrates the main computational techniques, while promoting coupling and hybrid techniques to handle fully realistic Virtual Prototypes. The solution has been particularly tailored for EMC experts (internal cabling & electronic equipment) in all industries, active safety ([RADAR](#) devices) and infotainment engineers in the automotive industry, and stealth design engineers in the aeronautics and defense sectors.

The solution includes [PAM-CEM Simulation Suite](#), ESI's advanced 3D explicit software, allowing the fast investigation of electromagnetic phenomena and developed from the widely used Finite-Difference Time-Domain method. Its simulation capabilities range from Electromagnetic

Compatibility (EMC) to Electromagnetic Interference (EMI), Electromagnetic Radiation (EMR) and Electromagnetic Susceptibility (EMS) of electronic systems or products. [PAM-CEM](#) offers unique coupling capabilities, allowing multi-scale electromagnetic phenomena assessment in the middle and high frequency ranges.

[CEM Solutions 2013](#) also includes [Efield Solutions](#), a unified modeling environment for time and frequency domains, that supports antenna design and integration (within automotive vehicles, aircraft or marine ships), microwave design, RADAR signature of military vehicles and ships, stealth, hardening and shielding.

Dr. Adam Zdunek, Head of the Aeronautic Vehicle Stealth Group at [FOI](#) (Swedish Defense Agency), comments on the benefits of using ESI's Virtual Product Engineering solutions to eliminate design errors early in the process: *"We have obtained very good results according to the post-test validations we have made on prototypes. These show that using calculation tools instead of conducting extensive experiments works extremely well in many cases."* **Dr Zdunek** continues, *"We use two types of calculations for invisibility: one on improving existing vehicles and one on new constructions. Efield can take into account the way that radar signals bounce and interact with other parts. The actions taken are aimed at eliminating any reflected signals."*

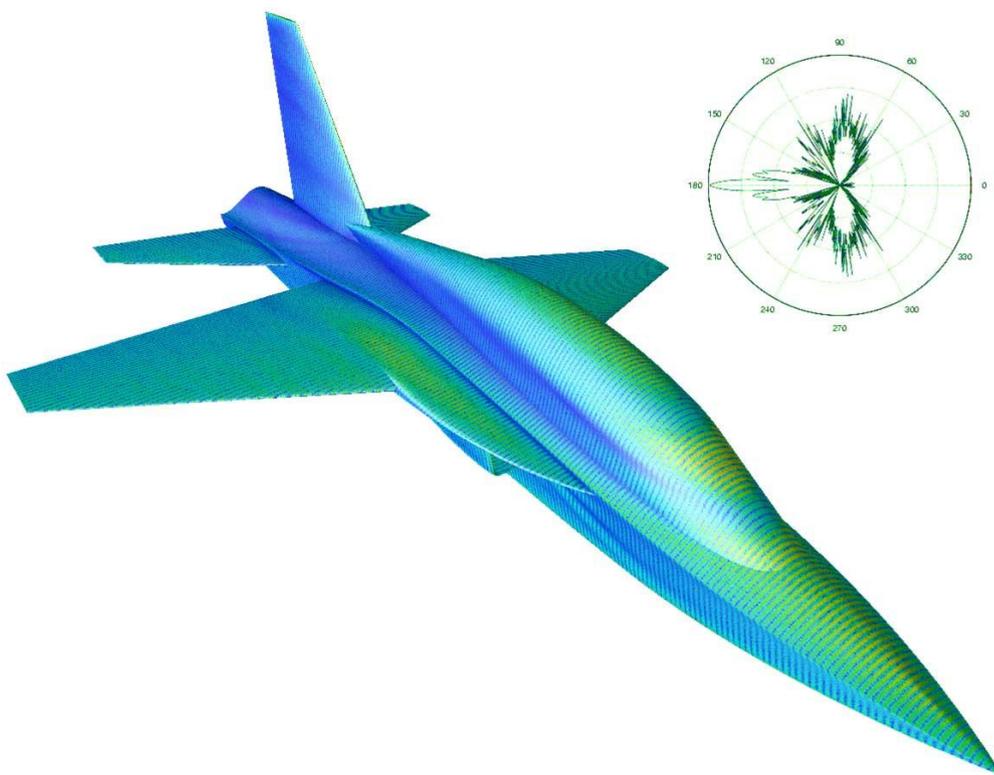


Image: Simulation of Radar Cross Section of a jet fighter airplane at 3GHz with Efield® MLFMM with more than 10^6 unknowns



The new [CEM Solutions 2013](#) has been enriched with key improvements for aerospace and defense applications, such as a very significant CPU time decrease through MLFMM (Multi Level Fast Multipole Method) parallelization of large scale applications, such as RADAR signature and antenna coupling. The new version also introduces enhanced modeling of antenna arrays for aeronautics, meshless formalism for high frequency, and advanced modeling for shielded and over shielded cables.

ESI envisions future developments for stealth, related to thin plastic coatings and radar absorbing materials. Major upcoming features for automotive will focus on radio noise from electronic equipment, and hybrid solutions for Long Radar Range (LRR) in Active Safety.

For more information about [CEM Solutions 2013](#), please visit www.esi-group.com/electromagnetics/

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. For further information, visit www.esi-group.com.

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