



i²ES™ — Integrated Internet Engineering Simulation

Reliable, Validated Engineering Structural Analysis

i²ES is a web-based software product that deploys validated and certified engineering simulation models. i²ES is designed to support preservation and maintenance of your company's corporate design knowledge and best practices.

i²ES enables you to comply with the ASME "Guide for Verification and Validation in Computational Solid Mechanics"¹, which was approved and adopted by the American National Standards Institute on November 3, 2006.

You will realize value by increased readiness through acceleration of structural analysis decisions, improved consistency and reliability, preservation of your company's corporate design knowledge and best practices, and ease of tracking analysis results.

i²ES was developed in response to the aerospace community's need to provide reliable, standardized structural and strength analysis methods in a global environment. It is equally applicable in other industries where structural and strength analyses are performed. i²ES will streamline your upfront analysis tasks, thus driving these benefits to the product development stage which in turn will reduce downstream maintenance and support costs. It can also be used to standardize analysis of maintenance repair alternatives.

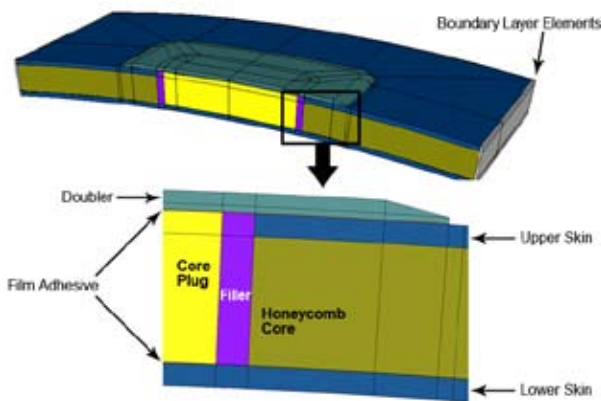
i²ES was developed to promote collaboration among all points of operation involved in design, analysis, maintenance and support, thus serving as a repository for completed design projects that can be documented, referenced and shared. It tracks, documents, and manages the analysis processes. i²ES's web-based architecture can be deployed globally. The system supports a scalable, distributed computing and database environment while retaining records of the history of analyses.

¹ ASME V&V 10-2006: Guide for Verification and Validation in Computational Solid Mechanics. The American Society of Mechanical Engineers, ISBN No. 0-7918-3042-X (2006)

i²ES™ will assure the quality, reliability and timeliness of the computed information. i²ES automates, standardizes and accelerates upfront structural analysis as well as downstream repair processes used (for example) in fleet maintenance.

TODAY'S CHALLENGES

Design and maintenance decisions are typically referred to skilled engineers who use a variety of tools to justify decisions. The choices of software tools are often based on subjective preferences and therefore the quality of information is uncertain. This results in lack of consistency and reliability in design decisions. In aircraft maintenance for example, the analyst often encounters various damage sizes, locations, surrounding structural arrangements and surface restoration requirements. These complexities often make traditional analysis techniques unrepresentative and unsuitable. In addition, decision-makers may not fully understand the limits of applicability of those techniques.



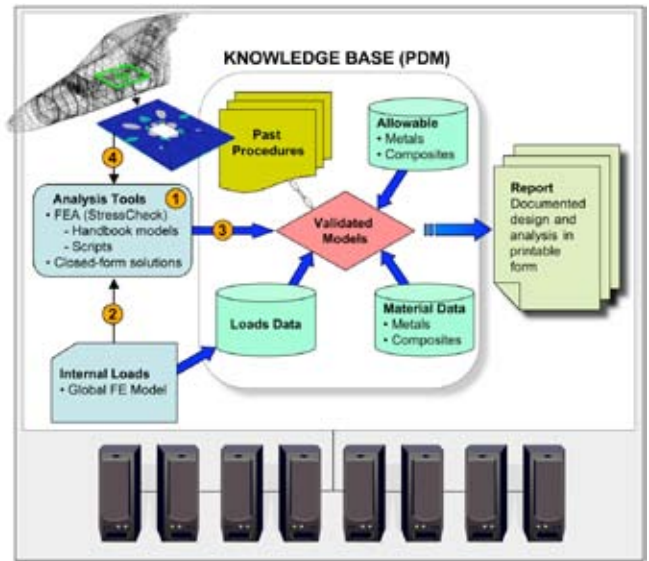
AUTOMATED, RELIABLE ENGINEERING STRUCTURAL ANALYSIS

i²ES is designed to deliver validated and certified parametric models to users who need not have expertise in the underlying technologies. Expert engineers develop validated models that simulate desired structural performance, thus standardizing the analysis for your organization. These are integrated into the framework enabling non-expert users to rapidly and accurately evaluate design alternatives. Timely analyses with accurate, reliable results accelerates the engineering decision-making process and improves the quality of decisions.

WHAT IS i²ES?

i²ES is a knowledge-based system, designed for the deployment of validated parametric models that serve engineering decision-making across the enterprise. You may integrate various simulation tools (FEA programs, user-developed applications, legacy tools) and add models to this highly flexible and robust system. i²ES can be used for qualification of legacy tools, ensuring that they are used within their proper scope. i²ES can also integrate advanced analysis tools such as StressCheck, allowing

for improved reliability in design decisions. The scripting capability within the system allows the expert to define an analysis process that can be of arbitrary complexity – a single solution, sequences of iterative solutions, or sequences of related solutions creating a more complex analysis.



SYSTEM ARCHITECTURE

i²ES's architecture is based on commercial, enterprise quality operating systems, communication protocols and application software that is fully scalable. The architecture enables the integration of most commercial applications by using the application's own API plus common XML library functions. In this way, the framework provides the same web-based access to commercial engineering simulation, business applications or to proprietary customer applications. The system can be extended and integrated with other engineering, logistics or business systems (e.g. PDM, CALS, and ERP), permitting site customization. i²ES provides for the necessary security safeguards for users at various sites to collaborate in a private environment.



Web-based Analysis

No other commercial product provides comparable web-based delivery of a wide variety of engineering simulation tools while retaining a history of analysis work performed by each user.

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