

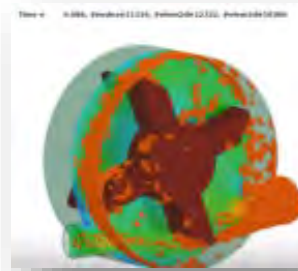
BETA CAE

**Comprehensive Safety CAE For The All-New
VOLVO S90/V90/V90CC**



LSTC

DEM Video



JSOL

**JMAG Users Conference 2017
Dec. 6-7, 2017**



ESI talk

The Virtual Prototyping Magazine





The publication's focus is engineering technical solutions/information.

FEA Engineering Solutions

www.feapublications.com

Contact: mv@feainformation.com

FEA Information China Engineering Solutions

Simplified and Traditional Chinese

To receive this publication contact yanhua@feainformation.com

Platinum Participants

FEA Information Inc.



Platinum Participants

FEA Information Inc.



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Announcements

FEA Information Engineering Solutions has a new format, with our Platinum Participants in the first section of the news. Additionally, past issues are hosted at www.feapublications.com

<p>DynaS+ - Charlotte MICHEL - Training Mgr. E-mail : c.michel@dynasplus.com</p> <p>2017</p> <ul style="list-style-type: none">• Dec. 7th and 8th, “Composite materials” training w/Ala Tabiei• Dec. 14th and 15th "NVH Training" w/Yun Huang, LSTC	<p>LSTC classes@lstc.com</p> <p>2017</p> <ul style="list-style-type: none">• Dec. 11th Mon MI Intro to LS-PrePost Instructors: P. Ho / Q. Yan• Dec. 12-15 Tue-Fri MI Intro to LS-DYNA Instructor: A. Nair
<p>JMAG Users Conference</p> <p>2017</p> <ul style="list-style-type: none">• December 6-7 Tokyo Conference Center - Shingawa, Japan www.jmag-international.com/index.html	<p>15th Int'l LS-DYNA Conference & Users Mtg</p> <p>2018 Registration is now open</p> <ul style="list-style-type: none">• June 10th, 11th & 12th 2018 Dearborn, MI www.ls-dynaconferences.com <p>Abstract deadline extended to November 30th</p>

If you have any questions, suggestions or recommended changes, please let us know.

Contact: Marsha mv@feainformation.com

Developing CAE software systems for all simulation disciplines. Products: ANSA pre-processor/ EPILYSIS solver and META post-processor suite, and SPDRM, the simulation-process-data-and-resources manager, for a range of industries, incl. the automotive, railway vehicles, aerospace, motorsports, chemical processes engineering, energy, electronics...

Comprehensive Safety CAE For The All-New VOLVO S90/V90/V90CC



DON'T MISS THE VIDEO: <https://youtu.be/kfYjxiZaESI>

Volvo Cars, the premium car maker, has cemented its position amongst the leaders of automotive safety innovation with its new S90 sedan and V90 wagon by being the first car maker to score a full six points in the Autonomous Emergency Braking for Pedestrians (AEB Pedestrian) test procedure and an overall 5 Star rating for both cars.

The S90/V90/V90CC cars are the second group of cars built on Volvo's SPA platform (Scalable Platform Architecture) and the development has continued to be very CAE oriented. New ways of working with CAE-tools and method development, such as windscreen modelling, new joining verification tests, head impact evaluation methods and pedestrian safety in

early phases, have been developed in order to be capable of covering the complexity and accuracy of the CAE models.

The spectacular work in VCC was described by Mathias Retzlaff, P-A Eggertsen, Johan Jergeus, Ingrid Jenshagen, Michelle Khoo, Domenico Macri, Ulf Westberg and presented during the 7th BEFORE REALITY Conference of BETA CAE Systems. Mathias Retzlaff, on the podium, highlighted how ANSA and META were employed for the effective Safety simulation in VCC.

More from the 7th BEFORE REALITY Conference <https://www.beta-cae.com/conference07.htm>
Contact: BETA CAE Systems
Email: ansa@beta-cae.com www.beta-cae.com

d3VIEW is a data to decision platform that provides out-of-the box data extraction, transformation and interactive visualizations. Using d3VIEW, you can visualize, mine and analyze the data quickly to enable faster and better decisions.



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Overview - d3View can integrate with any High Performance Computing (HPC) systems to submit and track jobs, perform complex data transformations using a rich library of templates that can help turn data to information, help visualize thousands of data using rich powerful visualizations, export to reports to share and collaborate.

HPC Interactions - Using the HPC application, you can submit and track simulation or non-simulation jobs that require compute resources. You can upload single or multiple files in raw or archive formats or choose files previously uploaded as input files to the solvers. Get live previews of running simulations and control them using a simple interface. Using rich library of post-processing templates to perform post-simulation data extraction and organization.

Visualize your Data - View your data using extensive library of visualizations to understand your information and to help you make decisions quickly. You can customize your visualizations using any of the available dimensions that could consist of both simulation input and outputs.

Introducing Peacock beta - View your 3D data using our native Multi-threaded GPU-Powered Visualizer. After 3 years of Research and Development, we are announcing the introduction of Peacock. The current version supports animation, part selection, part transparency and image capture. It talks directly to d3VIEW to store captured images to allow seamless data visualization to 2D and 3D.

Track Key Performance Targets and Indexes

Define and track key performance targets across simulations and tests to help you identify your design performance. You can define numerical or class based targets to help you understand the influence of your design variables and to assist you to achieve your objectives. You can track historical simulations to identify patterns in your targets to improve your future processes. Using our built-in timeline analyzer, you can animate your targets as a function of time to view the evolution of your design and KPIs.

Design of Experiments (DOE) Data

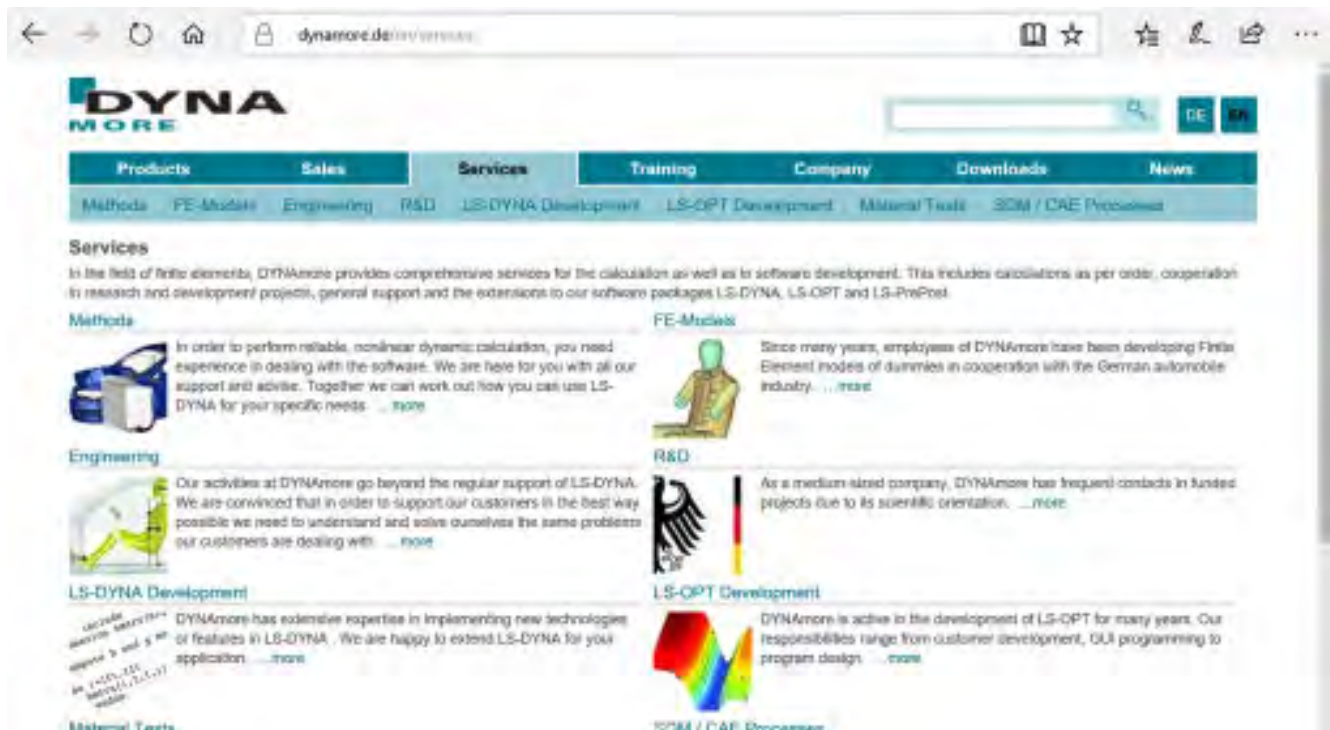
Visualizer - Viewing data from your DOE runs can be challenging when running simulations on the cloud or on-premise HPC system. Using d3VIEW's data visualizer, you can simplify this by aggregating or organizing simulations runs

and use a wide array of visualizers to understand relationships between your design and output. You can create pages of visualizations with custom layouts and have the interactive filters to quickly identify designs of interest.

Experimental Data - d3VIEW's data to decision framework supports storing, organizing and visualization of experimental data. You can manage all of our experiment results, search and compare them with other experiments or with simulations. Using our built-in data importer, you can seamlessly import data from any formats of Excel and directly compare them with simulations. You can use all the other features as in simulations such as data transformations and templates. You can share the data with others with only a read-only or write access without transferring the data.

DYNAmore is dedicated to supporting engineers solving non-linear mechanical problems numerically. Our tools to model and solve the problems are the FE software LS-DYNA as solver and LS-OPT for optimization. With 100 engineers in Europe we sell, teach, support, and co-develop the software and provide engineering services.

The full range of services from DYNAmore GmbH is located on their website - Training, Sales, Consulting, Technical Support, Development, Classes, Webinars.



At regular intervals a newsletter from DYNAmore informs you about new development in the LS-DYNA environment and upcoming events.

<https://www.dynamore.de/en/news/dmnews>

Sign Up: <https://www.dynamore.de/en/news/newsletter>

A leading innovator in Virtual Prototyping software and services. Specialist in material physics, ESI has developed a unique proficiency in helping industrial manufacturers replace physical prototypes by virtual prototypes, allowing them to virtually manufacture, assemble, test and pre-certify their future products.

ESI talk - The Virtual Prototyping Magazine.



ESI talk is ESI's bi-annual engineering news and applications magazine. Written for engineers and managers, ESI talk magazine showcases innovative software packages and solutions that enable End-to-End Virtual Prototyping in all industries, from automotive and transportation to aeronautics and aerospace, heavy industry and consumer goods

In this issue

Special report: Supporting the Industry 4.0 Transformation

Interview: 3 Questions for Dr. Slim Soua, TWI
Customer success

- ESI Virtual Performance Solution Helps ŠKODA Score 5-Star Rating from Euro NCAP
- ESI PAM-COMPOSITES Helps Kotobukiya Fronte Manufacture Sound Absorbing Automotive Carpets
- Mazda Adopts ESI CEM One Exclusively to Yield the Most Innovative Products
- JSP Improves the Accuracy of Their Seat Manufacturing with the Use of ESI Virtual Seat Solution
- Wall Colmonoy Limited (UK) Gets it Right the First Time with ESI ProCAST

Product news

- Virtual Performance Solution (VPS) 2017
- Launch of ESI Virtual Seat Solution 2017

- Efficient Design Space Exploration and Sensitivity Analysis with the Latest Release of ESI ACE+ Suite
- ESI SYSTUS 2017 Release Dedicated to the Energy Sector
- ESI Pro-SiVIC: Adding the Driver to the Simulation of Autonomous Vehicles
- Minimize Cost and Time for Car Body Manufacturing with ESI's Virtual Welding & Assembly Solution
- Growing Energy Demand Worldwide: How System Simulation Can Help Master the Challenge
- Simulating Rolling Noise from a Train for Silent Travel

Corporate news

- Meet ESI at the Following Events
- ESI, Ecotre & Colosio Receive the METEF 2017 Innovation Award
- ESI Hosts the 26th Annual Solidification Course
- The Czech Automotive Industry Association Awards MECAS ESI "Company of the Year 2016"

Financial news 2016 Annual Results & ESI Acquires Scilab Enterprises SAS

ETA has impacted the design and development of numerous products - autos, trains, aircraft, household appliances, and consumer electronics. By enabling engineers to simulate the behavior of these products during manufacture or during their use, ETA has been involved in making these products safer, more durable, lighter weight, and less expensive to develop.



Inventium Suite - From Concept to Product. The Inventium Suite is an enterprise-level CAE software solution. Inventium offers a streamlined product architecture which provides users access to all of the suite's software tools. By design it offers a high performance modeling and post-processing system, while providing a robust path for the integration of new tools and third party applications.

PreSys - Works the Way You Do Inventium's Core FE Modeling Toolset, PreSys is the successor to ETA's VPG/PrePost and FEMB products. PreSys offers an easy to use interface, with drop-down menus and toolbars, increased graphics speed and detailed graphics capabilities. These types of capabilities are combined with powerful, robust and accurate modeling functions.

VPG - Analyze Mechanical Systems Accurately VPG delivers a unique set of tools which allow engineers to create and visualize, through its modules--structure, safety, drop test, and blast analyses.

DYNAFORM - Complete Die System Simulation Solution The most accurate die analysis solution available today. Its formability simulation creates a "virtual tryout", predicting forming problems such as cracking, wrinkling, thinning and spring-back before any physical tooling is produced.

NISA - Solving Engineering Challenges NISA is a robust & comprehensive Finite Element Analysis (FEA) software toolset for engineering analysis. For over three decades scientists, engineers & researchers have come to depend on NISA to solve their most complex engineering problems. It can be used on its own or with PreSys.

FEA Information is dedicated to focusing on technical information for the engineering community with a number of websites and the FEA Information Engineering Solutions.

FEA Participants Attending the 15th International LS-DYNA Conference

Please visit the exhibitor booth(s)

100	ETA	www.eta.com
101	Oasys	www.oasys-software.com/dyna/en/
103	DatapontLabs	www.datapointlabs.com/
107	JSOL	www.jsol.co.jp/english/cae
201	BETA Simulation Solutions	www.beta-cae.com/
301	Predictive Engineering	www.predictiveengineering.com
303	Shanghai Hengstar Technology	www.hengstar.com
400	LSTC	www.lstc.com
401	FEA Information	www.feainformation.com

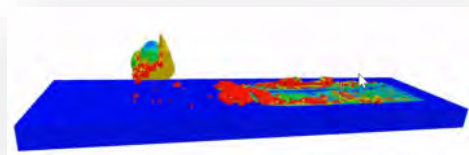
Website Showcase For November - www.fea-consulting.com/



FEA consultants use a wide range of software simulation programs for controlling the modeling and analysis of structures, systems, products and many other applications.

Consulting covers a range of requirements from drop testing, explosive modeling, civil engineering. From pre-design to post-design failures, consultants are used by industry, government, homeland security, court trials, to every aspect of what you see around you. It is a growing field of specialists needed by industry. With today's economy more industry is turning to outside consultants, for their software solutions, project work, and daily industry workload.

YouTube November Choice



A Moving Least-Squares based formulation is used to model large deformations of cohesive soil. SPH simulation performed in LS-Dyna, surface generated in Paraview, and rendered in Blender through VisualSPHysics.

<https://www.youtube.com/watch?v=Scp38PWbEOA>

Shanghai Hengstar Technology sells and supports LSTC's suite of products and other software solutions. These provide the Chinese automotive industry a simulation environment designed and ready multidisciplinary engineering needs. Sales, Consulting, Training & Support.



Hongsheng Lu welcomes you to Shanghai Hengstar Technology

Distributor in China, for FEA and CAE needs for engineers, professors, students, consultants.

Contact us for our LS-DYNA training courses, such as

- Crashworthiness Simulation with LS-DYNA
- Restraint System Design with Using LS-DYNA
- LS-DYNA MPP
- Airbag Simulation with CPM
- LS-OPT with LS-DYNA

Our classes are given by experts from LSTC USA, domestic OEMs, Germany, Japan, etc. These courses help CAE engineers to effectively use CAE tools such as LS-DYNA to improve car safety and quality, and therefore to enhance the capability of product design and innovation.

Sales & Consulting - Besides solver specific software sales, distribution and support activities, Shanghai Hengstar offers associated

training and consulting services to the Chinese automotive market since April 1st, 2013

Solutions - Our software solutions provide the Chinese automotive industry, educational institutions, and other companies a mature suite of tools - powerful and expandable simulation environment designed and ready for future multidisciplinary CAE engineering needs.

Shanghai Hengstar provides engineering services, consulting and training that combine analysis and simulation using Finite Element Methods such as LS-DYNA.

hongsheng@hengstar.com

Shanghai Hengstar Technology Co., Ltd
<http://www.hengstar.com>

Shanghai Enhu Information Technology Co., Ltd
<http://www.enhu.com>

JSOL supports industries with the simulation technology of state-of-the-art. Supporting customers with providing a variety of solutions from software development to technical support, consulting, in CAE (Computer Aided Engineering) field. Sales, Support, Training.

**JMAG Users Conference 2017****December 6-7, 2017****Tokyo Conference Center - Shingawa, Japan**www.jmag-international.com/index.html

Keynote Speech - *Nissan's EV Motor Development Strategy and History: Vision of Motor Development Strengthening with JMAG.*

Mr. Shunji Oki, Deputy General Manager, EV and HEV Component Engineering Dep.
Motor Engineering Group, Nissan Motor Co., Ltd.

Special Speech *Current Challenges and Future Solutions in Traction Motor Design for EVs*

Mr. Bernd Cebulski, Team Manager, Advance Development, IAV GmbH

NEWS - Introducing JMAG-Designer Ver.17.0 beta Complete Information visit:

www.jmag-international.com/products/jmag-designer/index_v170.html

1. Introduction to Special Functions - In JMAG-Designer Ver. 17.0, performance has greatly improved. In order to analyze complex physical phenomena in detail, the pre-post must operate smoothly, and appropriate mesh generation and calculation speed is necessary. Similarly for an optimal design requiring much processing, the job management system that allows the pre-post and distributed processing to execute smoothly for multi-case data must be stable.

For Ver.17.0, improvements have been made wherever possible in response all user cases.

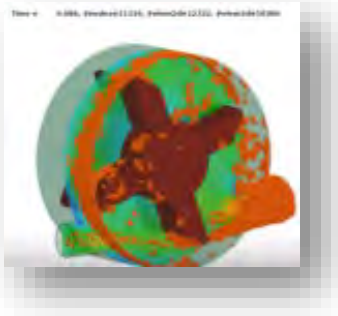
Additionally, functionality and capabilities such as the addition of a JMAG-RT motor type and

the ability to deal with arbitrary models have been enhanced.

2. Beta Version License Application - In order to use the beta release of JMAG-Designer Ver. 17.0, you will need to apply for a license. Application is located on the website shown above.

Additional information on 3. Install, 4. Confirmation of Operations and Using Sample Data, and Introducing JMAG-Designer Ver.10.0 - Ver.17.0 on JMAG can be read on the website.

A team of engineers, mathematicians, & computer scientists develop LS-DYNA, LS-PrePost, LS-OPT, LS-TaSC, and LSTC's Dummy & Barrier models, for use in various industries, including Automobile Design, Aerospace, Manufacturing, and Bioengineering. LS-DYNA's one code methodology includes Implicit, Explicit, SMP & MPP.



In this video DEM has capillary forces activated which results in adhesion and agglomeration of particles to the wall of the pump.

<https://www.youtube.com/watch?v=jANFupj02Dc>

LSTC Recent Developments, Features, Updates, News, Presentations

Editor: Yanhua Zhao - yanhua@feainformation.com

The complete papers - www.lstc.com/new_features

NOVEMBER - Thick Shell Element Form 5 in LS-DYNA - Lee P. Bindeman, LSTC

Excerpt: "...Thick shell form 5 in LS-DYNA is a layered 8 node brick element, with 4 nodes defining the bottom surface and 4 defining the top. For computational efficiency, each layer has one in-plane integration point. At least 2 layers are needed through the thickness, but there is no limit to the number of layers that may be defined..."

Among the Previous Months Postings

- A Customized Job Manager for Metal Forming Simulations with LS-DYNA
- Improvement of Mesh Fusion in LS-DYNA
- A 3D bond-based peridynamics model for dynamic brittle failure analysis in LS-DYNA®
- Conversion between FLD and Stress Triaxial Limit Curve
- A non-orthogonal material model of woven composites in the preforming process
- Best Fit GUI for Metal Forming in LS-PrePost® 4.5
- Modeling and Numerical Simulation of Afterburning of Thermobaric Explosives In a Closed Chamber
- Improvement of Sandwich Structure Part Adaptivity in LS-DYNA
- New Inflator Models in LS-DYNA®
- Improvement of Mesh Fusion in LS-DYNA
- Representative Volume Element (RVE) analysis using LS-DYNA
- New features of 3D adaptivity in LS-DYNA
- New Feature: Defining Hardening Curve in LS-DYNA®
- Improvements to One-Step Simulation in LS-DYNA
- LS-DYNA Smooth Particle Galerkin (SPG) Method

Providing engineering services to the composites industry since 1970. During this time, we have participated in numerous programs that demonstrate our ability to: perform advanced composite design, analysis and testing; provide overall program management; work in a team environment; and transition new product development to the military and commercial sectors.

MAT162 is a material model for use in LS-DYNA that may be used to simulate the onset and progression of damage in unidirectional and orthotropic fabric composite continua due to 3D stress fields. This failure model can be used to effectively simulate fiber

dominated failures, matrix damage, and includes a stress-based delamination failure criterion. This approach to predicting interlaminar failure is advantageous in cases when locations of delamination sites (i.e., interlaminar crack initiation surfaces) cannot be anticipated.

Examples are located at www.ccm.udel.edu/software/mat162/examples/

Example 1:

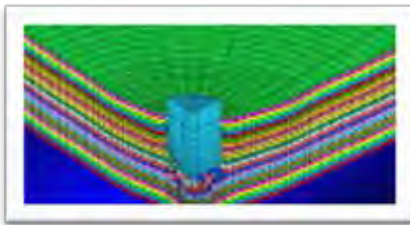
Sphere Impact on a Composite Laminate

Example 2:

Sphere Impact on a Perfectly Clamped Composite Plate

Example 3:

Sphere Impact on Elliptical Carbon/Epoxy Tube



High Velocity Impact of Square Plate using MAT161/162

www.youtube.com/watch?v=NgjncjfLKGw

Oasys Ltd is the software house of Arup and distributor of the LS-DYNA software in the UK, India and China. We develop the Oasys Suite of pre- and post-processing software for use with LS-DYNA.



Oasys REPORTER

www.oasys-software.com/dyna/en/software/reporter.shtml

Enables fast and convenient post-processing of LS-DYNA results through the use of templates and scripts.

Oasys REPORTER is a program that enables fast and convenient post-processing of LS-DYNA results through the use of templates and scripts.

The user creates a report template using Oasys REPORTER, this template forms the basic structure of the report, and defines areas on the pages that are intended for text, pictures or graphs. These are then linked to scripts either user-defined or from the built-in library that will generate the actual content .

When generating a report from a completed template Oasys REPORTER will execute each of the scripts, automatically opening D3PLOT and T/HIS to produce the required images, and place them at the defined position in the report.

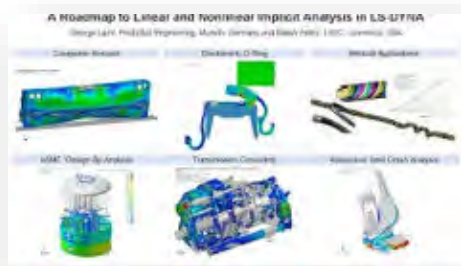
The user can also define variables which are passed between Oasys REPORTER and other Oasys programs as well as user-written scripts and programs. These variables can then be used to replace file and directory names, node and element numbers, or any other information the user wishes to include. This allows the user to

use the same report for multiple runs simply by specifying the value of a small set of variables when generating a report rather than having to edit a whole series of scripts and command files.

Main features:

- Full support for LS-DYNA version R9.0 and Oasys software
- Built in templates for many standard regulations and tests
- Compatible with scripts written in all major computer languages
- Supports files from a mixed UNIX / PC system
- Reports can be output in postscript, HTML, PDF and PowerPoint VBA formats
- Use of user defined variables allows one report templates to be used with a series of different models
- Eliminates the need for time consuming manual post-processing
- Enable easy review and comparison of large sets of data

Predictive Engineering provides finite element analysis consulting services, software, training and support to a broad range of engineering companies across North America. We strive to exceed client expectations for accuracy, timeliness and knowledge transfer. Our process is both cost-effective and collaborative, ensuring all clients are reference clients.



Predictive Engineering

www.youtube.com/user/PredictiveEngr

A Roadmap to Linear and Nonlinear Implicit Analysis in LS DYNA Presentation at the 11th Intl LS DYNA

A condensed presentation of our paper "A Roadmap to Linear and Nonlinear Implicit Analysis in LS-DYNA" that we presented at the 11th International LS-DYNA User's Conference in Salzburg, Austria on May 9-11, 2017.

Here's the Abstract: The default LS-DYNA settings are tailored for running large explicit analyses. For new and even experienced users, it can be challenging setting up an implicit LS-DYNA analysis to match analytical solutions or other standard implicit FEA codes. For example,

the default element formulations are based on single-point integration whereas implicit analyses benefits, from full-integration.

A series of example problems are provided that will allow the simulation engineer to exactly match industry standard implicit codes (complete keyword decks can be found at DYNAsupport.com). Along with these example decks, CPU-scaling results will be presented for each implicit analysis type from linear to nonlinear.

Offering industry-leading software platforms and hardware infrastructure for companies to perform scientific and engineering simulations. Providing simulation platforms that empower engineers, scientists, developers, and CIO and IT professionals to design innovative products, develop robust applications, and transform IT into unified, agile environments.

Rescale Partners with X-ISS to Provide Professional Services for Migrating from On-Premise Systems to Rescale - November 7, 2017 - <https://blog.rescale.com/>



San Francisco, CA — Rescale, the leading provider of enterprise big compute and cloud high performance computing (HPC) today announced a partnership with X-ISS, an HPC systems integration firm focused on on-premise HPC management solutions, to additionally offer professional services to enterprises migrating HPC workloads to the cloud.

Rescale’s ScaleX platform provides a managed HPC cloud environment by seamlessly connecting to public cloud providers, bare metal providers, or a customer’s hardware system whether on or off-premise, to enable a centrally-managed hybrid compute system. Similarly, X-ISS provides deployment, management, and analytics for on-premise clusters. The partnership will enable X-ISS’ on-premise customers to take advantage of HPC in the cloud. As a Rescale partner, X-ISS will perform integration services with Rescale’s ScaleX platform, including hybrid integration, private networking implementation, and integration of custom applications, amongst others.

Tyler Smith, Rescale’s Head of Partnerships, says that the arrangement is perfect for large enterprises: “As cloud HPC adoption accelerates, our partnership with X-ISS will make it easier for the enterprise to leverage cloud without disrupting workloads on existing

on-premise infrastructure. Bursting to cloud or migrating certain workloads offers a more elastic and scalable HPC environment, and Rescale working with X-ISS will aim to provide the optimal solution.”

Deepak Khosla at X-ISS also praised the partnership, saying, “At X-ISS, we are very excited to partner with Rescale to eliminate the compute ceilings and queuing wait times that our customers sometimes deal with. Together, X-ISS and Rescale will provide a comprehensive HPC solution and services that will delight our joint customers.”

About Rescale: Rescale is the global leader for high-performance computing simulations and deep learning in the cloud. For complete Information visit www.rescale.com .

About X-ISS: X-ISS has been providing cross-platform management and analytics solutions for the High Performance Computing (HPC) and Big Data industry for over 15 years. For complete Information visit www.x-iss.com .

CAE software sale & customer support , initial launch-up support, periodic on-site support. Engineering Services. Timely solutions, rapid problem set up, expert analysis . material property test Tension test, compression test, high-speed tension test and viscoelasticity test for plastic, rubber or foam materials. We verify the material property by LS-DYNA calculations before delivery.

For the entire list of products, within each category, please visit Terrabyte Website

FE analysis

- LS-DYNA is a general-purpose FE program capable of simulating complex real world problems. It is used by the automobile, aerospace, construction, military, manufacturing and bioengineering industries.
- ACS SASSI is a state-of-the-art highly specialized finite element computer code for performing 3D nonlinear soil-structure interaction analyses for shallow, embedded, deeply embedded and buried structures under coherent and incoherent earthquake ground motions.

CFD analysis

- AMI CFD software calculates aerodynamics, hydrodynamics, propulsion and aero elasticity which covers from concept design stage of aircraft to detailed design, test flight and accident analysis.

EM analysis

- JMAG is a comprehensive software suite for electromechanical equipment design and development. Powerful simulation and analysis technologies provide a new standard in performance and quality for product design.

Plastic Mold

- FormView focuses on thermoforming process (sheet reheat, forming and solidification). It helps to optimize blow moulding process to reduce defects, cycle time and manufacturing cost.

Metal sheet

- JSTAMP is an integrated forming simulation system for virtual tool shop based on IT environment. JSTAMP is widely used in many companies, mainly automobile companies and suppliers, electronics, and steel/iron companies in Japan.

Pre/ Post

- **PreSys** is an engineering simulation solution for FE model development. It offers an intuitive user interface with many streamlined functions, allowing fewer operation steps with a minimum amount of data entry.
- **JVISION** - Multipurpose pre/post-processor for FE solver. It has tight interface with LS-DYNA. Users can obtain both load reduction for analysis work and model quality improvements.

Biomechanics

- **The AnyBody Modeling System™** is a software system for simulating the mechanics of the live human body working in concert with its environment.

CADFEM Medical - Simulation in Medicine and Biomechanics

Simulation is growing in significance in medicine and biomechanics. Therefore, we have assembled our own team of specialists for medical technology and founded a dedicated company called CADFEM Medical GmbH. Based on commercial CAE-Software platforms CADFEM Medical develops automated software solutions, which are tailored to specific medical problems. These can be, for example, virtual strength tests of patient specific implants or the optimization of surgical procedures beforehand on the computer. Furthermore, CADFEM Medical offers consultancy services e.g. to pre-simulate the physical product test (ASTM, ISO) which are required for the FDA clearance.

CADFEM Medical collaborates closely with medical doctors, research facilities and hospitals and together with them CADFEM Medical seeks for new applications of simulation in the medicine.



CADFEM Medical Magazine

Here you will find samples from the current CADFEM Medical Magazine and previous editions with contributions from the field of patient-specific simulation in medicine.



CADFEM Medical “Training on the Job”

A training training course for simulation engineers from the medical device industry. The training course provides basic medical know-how to enable the participants to perform medical simulations. The training course is developed together with esocaet and the University of Witten/Herdecke.

www.esocaet.com/studies/uwh.html

China FEA News Participants



eta

www.eta.com



make design⁺

www.flotrend.com.tw



恒士达科技

Hengstar Tech.

www.hengstar.com



AutoCAE

really customer focused

www.autocae.cn



ARUP

www.oasys-software.com/dyna



Dynawe

www.dynawe.com



AgileSim

www.agilesim.com.tw



PAN-i

www.pan-i.com



DUFK

<http://dalianfukun.com>

FEA Information China - For Sign Up or to offer Articles Contact:

Editors: Yanhua Zhao - Yanhua@feainformation.com



BETA CAE Systems.

www.beta-cae.com

BETA CAE Systems - ANSA

An advanced multidisciplinary CAE pre-processing tool that provides all the necessary functionality for full-model build up, from CAD data to ready-to-run solver input file, in a single integrated environment. ANSA is a full product modeler for LS-DYNA, with integrated Data Management and Process Automation. ANSA can also be directly coupled with LS-OPT or LSTC to provide an integrated solution in the field of optimization.

Solutions for:

Process Automation - Data Management – Meshing – Durability - Crash & Safety NVH - CFD
- Thermal analysis - Optimization - Powertrain
Products made of composite materials - Analysis Tools -
Maritime and Offshore Design - Aerospace engineering - Biomechanics

BETA CAE Systems μ ETA

Is a multi-purpose post-processor meeting diverging needs from various CAE disciplines. It owes its success to its impressive performance, innovative features and capabilities of interaction between animations, plots, videos, reports and other objects. It offers extensive support and handling of LS-DYNA 2D and 3D results, including those compressed with SCAI's FEMZIP software

Engineering Solutions



DatapointLabs

DatapointLabs

www.datapointlabs.com

Testing over 1000 materials per year for a wide range of physical properties, DatapointLabs is a center of excellence providing global support to industries engaged in new product development and R&D.

The company meets the material property needs of CAE/FEA analysts, with a specialized product line, TestPaks®, which allow CAE analysts to easily order material testing for the calibration of over 100 different material models.

DatapointLabs maintains a world-class testing facility with expertise in physical properties of plastics, rubber, food, ceramics, and metals.

Core competencies include mechanical, thermal and flow properties of materials with a focus on precision properties for use in product development and R&D.

Engineering Design Data including material model calibrations for CAE Research Support Services, your personal expert testing laboratory Lab Facilities gives you a glimpse of our extensive test facilities Test Catalog gets you instant quotes for over 200 physical properties.

Invention Suite™

Invention Suite™ is an enterprise-level CAE software solution, enabling concept to product. Invention's first set of tools will be released soon, in the form of an advanced Pre & Post processor, called PreSys.

Invention's unified and streamlined product architecture will provide users access to all of the suite's software tools. By design, its products will offer a high performance modeling and post-processing system, while providing a robust path for the integration of new tools and third party applications.

PreSys

Invention's core FE modeling toolset. It is the successor to ETA's VPG/PrePost and FEMB products. PreSys offers an easy to use interface, with drop-down

menus and toolbars, increased graphics speed and detailed graphics capabilities. These types of capabilities are combined with powerful, robust and accurate modeling functions.

VPG

Advanced systems analysis package. VPG delivers a unique set of tools which allow engineers to create and visualize, through its modules--structure, safety, drop test, and blast analyses.

DYNAFORM

Complete Die System Simulation Solution. The most accurate die analysis solution available today. Its formability simulation creates a "virtual tryout", predicting forming problems such as cracking, wrinkling, thinning and spring-back before any physical tooling is produced

ESI Group

www.esi-group.com

Visual-Environment is an integrative simulation platform for simulation tools operating either concurrently or standalone for various solver. Comprehensive and integrated solutions for meshing, pre/post processing, process automation and simulation data management are available within same environment enabling seamless execution and automation of tedious workflows. This very open and versatile environment simplifies the work of CAE engineers across the enterprise by facilitating collaboration and data sharing leading to increase of productivity.

Visual-Crash DYNA provides advanced preprocessing functionality for LS-DYNA users, e.g. fast iteration and rapid model revision processes, from data input to visualization for crashworthiness simulation and design. It ensures quick model browsing, advanced mesh editing capabilities and rapid graphical assembly of system models. Visual-Crash DYNA allows graphical creation, modification and deletion of LS-DYNA entities. It comprises tools for checking model quality and simulation parameters prior to launching calculations with the solver. These tools help in correcting errors

and fine-tuning the model and simulation before submitting it to the solver, thus saving time and resources.

Several high productivity tools such as advanced dummy positioning, seat morphing, belt fitting and airbag folder are provided in **Visual-Safe**, a dedicated application to safety utilities.

Visual-Mesh is a complete meshing tool supporting CAD import, 1D/2D/3D meshing and editing for linear and quadratic meshes. It supports all meshing capabilities, like shell and solid automesh, batch meshing, topo mesh, layer mesh, etc. A convenient Meshing Process guides you to mesh the given CAD component or full vehicle automatically.

Visual-Viewer built on a multi-page/multi-plot environment, enables data grouping into pages and plots. The application allows creation of any number of pages with up to 16 windows on a single page. These windows can be plot, animation, video, model or drawing block windows. Visual-Viewer performs automated tasks and generates customized reports and thereby increasing engineers' productivity.



ESI Group

www.esi-group.com

Visual-Process provides a whole suite of generic templates based on LS-DYNA solver (et altera). It enables seamless and interactive process automation through customizable LS-DYNA based templates for automated CAE workflows.

All generic process templates are easily accessible within the unique framework of Visual-Environment and can be customized upon request and based on customer's needs.

VisualDSS is a framework for Simulation Data and Process Management which connects with Visual-Environment and supports product

engineering teams, irrespective of their geographic location, to make correct and realistic decisions throughout the virtual prototyping phase. **VisualDSS** supports seamless connection with various CAD/PLM systems to extract the data required for building virtual tests as well as building and chaining several virtual tests upstream and downstream to achieve an integrated process. It enables the capture, storage and reuse of enterprise knowledge and best practices, as well as the automation of repetitive and cumbersome tasks in a virtual prototyping process, the propagation of engineering changes or design changes from one domain to another.

JSOL Corporation

www.jsol.co.jp/english/cae/

HYCRASH

Easy-to-use one step solver, for Stamping-Crash Coupled Analysis. HYCRASH only requires the panels' geometry to calculate manufacturing process effect, geometry of die are not necessary. Additionally, as this is target to usage of crash/strength analysis, even forming analysis data is not needed. If only crash/strength analysis data exists and panel ids is defined. HYCRASH extract panels to calculate it's strain, thickness, and map them to the original data.

JSTAMP/NV

As an integrated press forming simulation system for virtual tool shop

the JSTAMP/NV meets the various industrial needs from the areas of automobile, electronics, iron and steel, etc. The JSTAMP/NV gives satisfaction to engineers, reliability to products, and robustness to tool shop via the advanced technology of the JSOL Corporation.

JMAG

JMAG uses the latest techniques to accurately model complex geometries, material properties, and thermal and structural phenomena associated with electromagnetic fields. With its excellent analysis capabilities, JMAG assists your manufacturing process



Livermore Software Technology Corp.

www.lstc.com

LS-DYNA

A general-purpose finite element program capable of simulating complex real world problems. It is used by the automobile, aerospace, construction, military, manufacturing, and bioengineering industries. LS-DYNA is optimized for shared and distributed memory Unix, Linux, and Windows based, platforms, and it is fully QA'd by LSTC. The code's origins lie in highly nonlinear, transient dynamic finite element analysis using explicit time integration.

LS-PrePost: An advanced pre and post-processor that is delivered free with LS-DYNA. The user interface is designed to be both efficient and intuitive. LS-PrePost runs on Windows, Linux, and Macs utilizing OpenGL graphics to achieve fast rendering and XY plotting.

LS-OPT: LS-OPT is a standalone Design Optimization and Probabilistic Analysis package with an interface to LS-DYNA. The graphical preprocessor LS-OPTui facilitates

definition of the design input and the creation of a command file while the postprocessor provides output such as approximation accuracy, optimization convergence, tradeoff curves, anthill plots and the relative importance of design variables.

LS-TaSC: A Topology and Shape Computation tool. Developed for engineering analysts who need to optimize structures, LS-TaSC works with both the implicit and explicit solvers of LS-DYNA. LS-TaSC handles topology optimization of large non-linear problems, involving dynamic loads and contact conditions.

LSTC Dummy Models:

Anthropomorphic Test Devices (ATDs), as known as "crash test dummies", are life-size mannequins equipped with sensors that measure forces, moments, displacements, and accelerations.

LSTC Barrier Models: LSTC offers several Offset Deformable Barrier (ODB) and Movable Deformable Barrier (MDB) model.



Material Sciences Corporation

www.materials-sciences.com

Materials Sciences Corporation has provided engineering services to the composites industry since 1970. During this time, we have participated in numerous programs that demonstrate our ability to: perform advanced composite design, analysis and testing; provide overall program management; work in a team environment; and transition new product development to the military and commercial sectors. MSC's corporate mission has expanded beyond basic research and development now to include transitioning its proprietary technologies from the research lab into innovative new products. This commitment is demonstrated through increased staffing and a more than 3-fold expansion of facilities to allow in-house manufacturing and testing of advanced composite materials and structures

Materials Sciences Corporation (MSC) MAT161/162 - enhanced features have been added to the Dynamic Composite Simulator module of LS-DYNA.

This enhancement to LS-DYNA, known as MAT161/162, enables the most effective and accurate dynamic progressive failure modeling of composite structures to enable the most effective and accurate dynamic progressive

failure modeling of composite structures currently available.

MSC/LS-DYNA Composite Software and Database -

Fact Sheet: <http://www.materials-sciences.com/dyna-factsheet.pdf>

- MSC and LSTC have joined forces in developing this powerful composite dynamic analysis code.
- For the first time, users will have the enhanced ability to simulate explicit dynamic engineering problems for composite structures.
- The integration of this module, known as 'MAT 161', into LS-DYNA allows users to account for progressive damage of various fiber, matrix and interply delamination failure modes.
- Implementing this code will result in the ability to optimize the design of composite structures, with significantly improved survivability under various blast and ballistic threats.

MSC's LS-DYNA module can be used to characterize a variety of composite structures in numerous applications—such as this composite hull under blast



Oasys Ltd. LS-DYNA Environment

www.oasys-software.com/dyna

The Oasys Suite of software is exclusively written for LS-DYNA® and is used worldwide by many of the largest LS-DYNA® customers. The suite comprises of:

- Contact penetration checking and fixing
- Connection feature for creation and management of connection entities.
- Support for Volume III keywords and large format/long labels
- Powerful scripting capabilities allowing the user to create custom features and processes

Oasys PRIMER

Key benefits:

- Pre-Processor created specifically for LS-DYNA®
- Compatible with the latest version of LS-DYNA®
- Maintains the integrity of data
- Over 6000 checks and warnings – many auto-fixable
- Specialist tools for occupant positioning, seatbelt fitting and seat squashing (including setting up pre-simulations)
- Many features for model modification, such as part replace
- Ability to position and depenetrate impactors at multiple locations and produce many input decks automatically (e.g. pedestrian impact, interior head impact)

www.oasys-software.com/dyna

Oasys D3PLOT

Key benefits:

- Powerful 3D visualization post-processor created specifically for LS-DYNA®
- Fast, high quality graphics
- Easy, in-depth access to LS-DYNA® results
- Scripting capabilities allowing the user to speed up post-processing, as well as creating user defined data components

Engineering Solutions



www.predictiveengineering.com

Predictive Engineering provides finite element analysis consulting services, software, training and support to a broad range of engineering companies across North America. We strive to exceed client expectations for accuracy, timeliness and knowledge transfer. Our process is both cost-effective and collaborative, ensuring all clients are reference clients.

Our mission is to be honest brokers of information in our consulting services and the software we represent.

Our History

Since 1995, Predictive Engineering has continually expanded its client base. Our clients include many large organizations and industry leaders such as SpaceX, Nike, General Electric, Navistar, FLIR Systems, Sierra Nevada Corp, Georgia-Pacific, Intel, Messier-Dowty and more. Over the years, Predictive Engineering has successfully completed more than 800 projects, and has set itself apart on its strong FEA, CFD and LS-DYNA consulting services.



Shanghai Hengstar

www.hengstar.com

Center of Excellence: Hengstar Technology is the first LS-DYNA training center of excellence in China. As part of its expanding commitment to helping CAE engineers in China, Hengstar Technology will continue to organize high level training courses, seminars, workshops, forums etc., and will also continue to support CAE events such as: China CAE Annual Conference; China Conference of Automotive Safety Technology; International Forum of Automotive Traffic Safety in China; LS-DYNA China users conference etc.

On Site Training: Hengstar Technology also provides customer customized training programs on-site at the company facility. Training is tailored for customer needs using LS-DYNA such as material test and input keyword preparing; CAE process automation with customized script program; Simulation result correlation with the test result; Special topics with new LS-DYNA features etc..

Distribution & Support: Hengstar distributes and supports LS-DYNA, LS-OPT, LS-Prepost, LS-TaSC, LSTC FEA Models; Hongsheng Lu, previously was directly employed by LSTC before opening his distributorship in China for LSTC software. Hongsheng visits LSTC often to keep update on the latest software features.

Hengstar also distributes and supports d3View; Genesis, Visual DOC, ELSDYNA; Visual-Crash Dyna, Visual-Process, Visual-Environment; EnkiBonnet; and DynaX & MadyX etc.

Consulting

As a consulting company, Hengstar focuses on LS-DYNA applications such as crash and safety, durability, bird strike, stamping, forging, concrete structures, drop analysis, blast response, penetration etc with using LS-DYNA's advanced methods: FEA, ALE, SPH, EFG, DEM, ICFD, EM, CSEC..

Engineering Solutions

lenovo

Lenovo

www.lenovo.com

Lenovo is a USD39 billion personal and enterprise technology company, serving customers in more than 160 countries.

Dedicated to building exceptionally engineered PCs, mobile Internet devices and servers spanning entry through supercomputers, Lenovo has built its business on product innovation, a highly efficient global supply chain and strong

strategic execution. The company develops, manufactures and markets reliable, high-quality, secure and easy-to-use technology products and services.

Lenovo acquired IBM's x86 server business in 2014. With this acquisition, Lenovo added award-winning System x enterprise server portfolio along with HPC and CAE expertise.

Cloud - HPC Services - Subscription

Contact: JSOL Corporation Engineering Technology Division cae-info@sci.jsol.co.jp



Cloud computing services
for
JSOL Corporation LS-DYNA users in Japan

JSOL Corporation is cooperating with chosen
cloud computing services

JSOL Corporation, a Japanese LS-DYNA distributor for Japanese LS-DYNA customers.

LS-DYNA customers in industries / academia / consultancies are facing increased needs for additional LS-DYNA cores

In calculations of optimization, robustness, statistical analysis, we find that an increase in cores of LS-DYNA are needed, for short term extra projects or cores.

JSOL Corporation is cooperating with some cloud computing services for JSOL's LS-DYNA users and willing to provide short term license.

This service is offered to customers using Cloud License fee schedule, the additional fee is less expensive than purchasing yearly license.

**The following services are available
(only in Japanese). HPC OnLine:**

NEC Solution Innovators, Ltd.

http://jpn.nec.com/manufacture/machinery/hpc_online/

Focus

Foundation for Computational Science

<http://www.j-focus.or.jp>

Platform Computation Cloud

CreDist.Inc.

PLEXUS CAE

Information Services International-Dentsu, Ltd.

(ISID) <https://portal.plexusplm.com/plexus-cae/>

SCSK Corporation

<http://www.scsk.jp/product/keyword/keyword07.html>

Cloud - HPC Services - Subscription

www.rescale.com



Rescale: Cloud Simulation Platform

The Power of Simulation Innovation

We believe in the power of innovation. Engineering and science designs and ideas are limitless. So why should your hardware and software be limited? You shouldn't have to choose between expanding your simulations or saving time and budget.

Using the power of cloud technology combined with LS-DYNA allows you to:

- Accelerate complex simulations and fully explore the design space
- Optimize the analysis process with hourly software and hardware resources
- Leverage agile IT resources to provide flexibility and scalability

True On-Demand, Global Infrastructure

Teams are no longer in one location, country, or even continent. However, company data centers are often in one place, and everyone must connect in, regardless of office. For engineers across different regions, this can cause

connection issues, wasted time, and product delays.

Rescale has strategic/technology partnerships with infrastructure and software providers to offer the following:

- Largest global hardware footprint – GPUs, Xeon Phi, InfiniBand
- Customizable configurations to meet every simulation demand
- Worldwide resource access provides industry-leading tools to every team
- Pay-per-use business model means you only pay for the resources you use
- True on-demand resources – no more queues

ScaleX Enterprise: Transform IT, Empower Engineers, Unleash Innovation

The ScaleX Enterprise simulation platform provides scalability and flexibility to companies while offering enterprise IT and management teams the opportunity to expand and empower their organizations.

Cloud - HPC Services - Subscription

Rescale Cloud Simulation Platform

www.rescale.com

ScaleX Enterprise allows enterprise companies to stay at the leading edge of computing technology while maximizing product design and accelerating the time to market by providing:

- Collaboration tools
- Administrative control
- API/Scheduler integration
- On-premise HPC integration

Industry-Leading Security

Rescale has built proprietary, industry-leading security solutions into the platform, meeting the

needs of customers in the most demanding and competitive industries and markets.

- Manage engineering teams with user authentication and administrative controls
- Data is secure every step of the way with end-to-end data encryption
- Jobs run on isolated, kernel-encrypted, private clusters
- Data centers include biometric entry authentication
- Platforms routinely submit to independent external security audits

Rescale maintains key relationships to provide LS-DYNA on demand on a global scale. If you have a need to accelerate the simulation process and be an innovative leader, contact Rescale or the following partners to begin running LS-DYNA on Rescale's industry-leading cloud simulation platform.

LSTC - DYNAmore GmbH JSOL Corporation

Rescale, Inc. - 1-855-737-2253 (1-855-RESCALE) - info@rescale.com

944 Market St. #300, San Francisco, CA 94102 USA

Cloud - HPC Services - Subscription

ESI Cloud Based Virtual Engineering Solutions

www.esi-group.com



ESI Cloud offers designers and engineers cloud-based computer aided engineering (CAE) solutions across physics and engineering disciplines.

ESI Cloud combines ESI's industry tested virtual engineering solutions integrated onto ESI's Cloud Platform with browser based modeling,

With ESI Cloud users can choose from two basic usage models:

- An end-to-end SaaS model: Where modeling, multi-physics solving, results visualization and collaboration are conducted in the cloud through a web browser.
- A Hybrid model: Where modeling is done on desktop with solve, visualization and collaboration done in the cloud through a web browser.

Virtual Performance Solution:

ESI Cloud offers ESI's flagship Virtual Performance Solution (VPS) for multi-domain performance simulation as a hybrid offering on its cloud platform. With this offering, users can harness the power of Virtual Performance Solution, leading multi-domain CAE solution for virtual engineering of crash, safety, comfort, NVH (noise, vibration and harshness), acoustics, stiffness and durability.

In this hybrid model, users utilize VPS on their desktop for modeling including

geometry, meshing and simulation set up. ESI Cloud is then used for high performance computing with an integrated visualization and real time collaboration offering through a web browser.

The benefits of VPS hybrid on ESI Cloud include:

- Running large concurrent simulations on demand
- On demand access to scalable and secured cloud HPC resources
- Three tiered security strategy for your data
- Visualization of large simulation data sets
- Real-time browser based visualization and collaboration
- Time and cost reduction for data transfer between cloud and desktop environments
- Support, consulting and training services with ESI's engineering teams

Cloud - HPC Services - Subscription

www.esi-group.com

VPS On Demand

ESI Cloud features the Virtual Performance Solution (VPS) enabling engineers to analyze and test products, components, parts or material used in different engineering domains including crash and high velocity impact, occupant safety, NVH and interior acoustics, static and dynamic load cases. The solution enables VPS users to overcome hardware limitations and to drastically reduce their simulation time by running on demand very large concurrent simulations that take advantage of the flexible nature of cloud computing.

Key solution capabilities:

- Access to various physics for multi-domain optimization
- Flexible hybrid model from desktop to cloud computing
- On demand provisioning of hardware resources
- Distributed parallel processing using MPI (Message Passing Interface) protocol
- Distributed parallel computing with 10 Gb/s high speed interconnects

Result visualization

ESI Cloud deploys both client-side and server-side rendering technologies. This enables the full interactivity needed during the simulation workflow along with the ability to handle large data generated for 3D result visualization in the browser, removing the need for time consuming data transfers. Additionally ESI Cloud visualization engine enables

the comparisons of different results through a multiple window user interface design.

Key result visualization capabilities:

- CPU or GPU based client and server side rendering
- Mobility with desktop like performance through the browser
- 2D/3D VPS contour plots and animations
- Custom multi-window system for 2D plots and 3D contours
- Zooming, panning, rotating, and sectioning of multiple windows

Collaboration

To enable real time multi-user and multi company collaboration, ESI Cloud offers extensive synchronous and asynchronous collaboration capabilities. Several users can view the same project, interact with the same model results, pass control from one to another. Any markups, discussions or annotations can be archived for future reference or be assigned as tasks to other members of the team.

Key collaboration capabilities:

- Data, workflow or project asynchronous collaboration
- Multi-user, browser based collaboration for CAD, geometry, mesh and results models
- Real-time design review with notes, annotations and images archiving and retrieval
- Email invite to non ESI Cloud users for real time collaboration

Distribution, Consulting, Training

Canada **Metal Forming Analysis Corp MFAC** galb@mfac.com

www.mfac.com

LS-DYNA LS-OPT LS-PrePost LS-TaSC
LSTC Dummy Models LSTC Barrier Models eta/VPG
eta/DYNAFORM INVENTIUM/PreSys

Mexico **COMPLX** Armando Toledo
www.complx.com.mx/ armando.toledo@complx.com.mx

LS-DYNA LS-OPT LS-PrePost
LS-TAsc Barrier/Dummy Models

United States **DYNAMAX** sales@dynamax-inc.com
www.dynamax-inc.com

LS-DYNA LS-OPT LS-PrePost LS-TaSC
LSTC Dummy Models LSTC Barrier Models

United States **Livermore Software Technology Corp** sales@lstc.com
LSTC www.lstc.com

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Weld Planner

Visual-Environment

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INVENTIUM/PreSy

NISA

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LS-DYNA

LS-OPT

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United States

Predictive Engineering

george.laird@predictiveengineering.com

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NX Nastran

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LS-PrePost

LS-TaSC

LSTC Dummy Models

LSTC Barrier Models

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LSTC Dummy Models LSTC Barrier Models

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DSDM Products LSTC Dummy Models FEMZIP
LSTC Barrier Models DIGIMAT

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Distribution, Consulting, Training

Germany

DYNAmore GmbH

uli.franz@dynamore.de

www.dynamore.de

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Primer	FEMZIP	GENESIS	Oasys Suite
TOYOTA THUMS		LSTC Dummy & Barrier Models	

The Netherlands

Infinite Simulation Systems B.V

j.mathijssen@infinite.nl

www.infinite.nl

ANSYS Products	CivilFem	CFX	Fluent
LS-DYNA	LS-PrePost	LS-OPT	LS-TaSC

Russia

Limited Liability DynaRu

office@lsdyna.ru

www.lsdyna.ru

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	LSTC Barrier Models	DIGIMAT		
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	FormingSuite	LSTC Dummy Models		
		LSTC Barrier Models		
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	DIGIMAT Simpleware	LSTC Dummy Models		
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	www.eta.com/cn					
	Inventium	VPG	DYNAFORM	NISA		
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LS-OPT LSTC Dummy Models LS-PrePost
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India **CADFEM India** info@cadfem.in
www.cadfem.in
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LS-DYNA LS-OPT LS-PrePost

India **Kaizenat Technologies Pvt. Ltd** support@kaizenat.com
<http://kaizenat.com/>
LS-DYNA LS-OPT LSTC Dummy Models LS-PrePost
Complete LS-DYNA suite of products LSTC Barrier Models LS-TaSC

Distribution, Consulting, Training

Japan	CTC www.engineering-eye.com	LS-dyna@ctc-g.co.jp		
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	CmWAVE	
Japan	JSOL www.jsol.co.jp/english/cae		Oasys Suite	
	JSTAMP	HYCRASH	JMAG	
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	TOYOTA THUMS	
Japan	FUJITSU http://www.fujitsu.com/jp/solutions/business-technology/tc/sol/			
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	LSTC Dummy Models	LSTC Barrier Models	CLOUD Services	
	Inventium PreSys	ETA/DYNAFORM	Digimat	
Japan	LANCEMORE www.lancemore.jp/index_en.html	info@lancemore.jp		
	Consulting			
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	LSTC Dummy Models	LSTC Barrier Models		
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Distribution, Consulting, Training

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	LSTC Dummy Models	LSTC Barrier Models	eta/VPG	Planets
	eta/DYNAFORM	FormingSuite	Simblow	TrueGRID
	JSTAMP/NV	Scan IP	Scan FE	Scan CAD
	FEMZIP			

Korea	KOSTECH	young@kostech.co.kr		
	www.kostech.co.kr			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM
	eta/DYNAFORM	DIGIMAT	Simuform	Simpack
	AxStream	TrueGrid	FEMZIP	

Distribution, Consulting, Training

Taiwan **AgileSim Technology Corp.**

www.agilesim.com.tw

LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM

Taiwan **Flotrend**

www.flotrend.com.tw

LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM

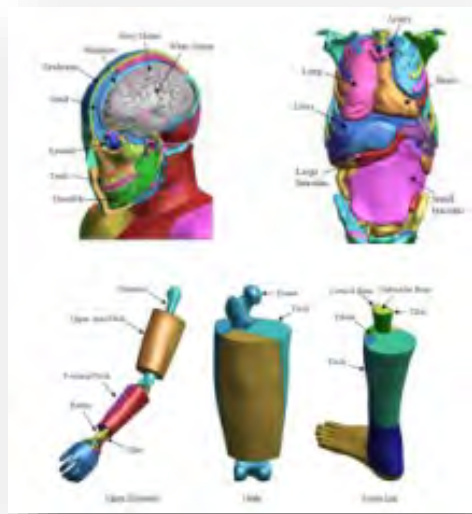
Taiwan **SIMWARE Inc..**

www.simware.com.tw

LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM

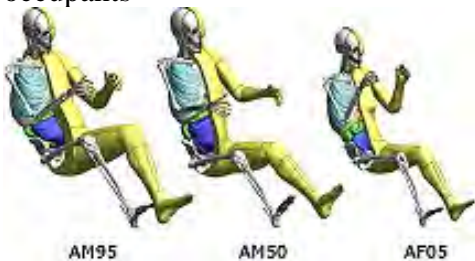
ATD - Human Models - Barrier

TOYOTA - Total Human Model for Safety – THUMS

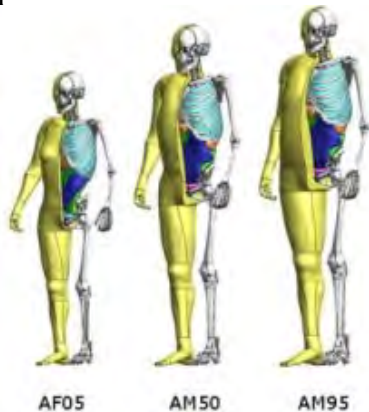


The Total Human Model for Safety, or THUMS®, is a joint development of Toyota Motor Corporation and Toyota Central R&D Labs. Unlike dummy models, which are simplified representation of humans, THUMS represents actual humans in detail, including the outer shape, but also bones, muscles, ligaments, tendons, and internal organs. Therefore, THUMS can be used in automotive crash simulations to identify safety problems and find their solutions.

Each of the different sized models is available as sitting model to represent vehicle occupants



and as standing model to represent pedestrians.



The internal organs were modeled based on high resolution CT-scans.

THUMS is limited to civilian use and may under no circumstances be used in military applications.

LSTC is the US distributor for THUMS. Commercial and academic licenses are available.

For information please contact: THUMS@lstc.com

THUMS®, is a registered trademark of Toyota Central R&D Labs.

ATD - Human Models - Barrier

LSTC – Dummy Models

LSTC Crash Test Dummies (ATD)

Meeting the need of their LS-DYNA users for an affordable crash test dummy (ATD), LSTC offers the LSTC developed dummies at no cost to LS-DYNA users.

LSTC continues development on the LSTC Dummy models with the help and support of their customers. Some of the models are joint developments with their partners.

e-mail to: atds@lstc.com

Models completed and available (in at least an alpha version)

- Hybrid III Rigid-FE Adults
- Hybrid III 50th percentile FAST
- Hybrid III 5th percentile detailed
- Hybrid III 50th percentile detailed
- Hybrid III 50th percentile standing
- EuroSID 2
- EuroSID 2re
- SID-IIIs Revision D
- USSID
- Free Motion Headform
- Pedestrian Legform Impactors

Models In Development

- Hybrid III 95th percentile detailed
- Hybrid III 3-year-old
- Hybrid II
- WorldSID 50th percentile
- THOR NT FAST
- Ejection Mitigation Headform

Planned Models

- FAA Hybrid III
- FAST version of THOR NT
- FAST version of EuroSID 2
- FAST version of EuroSID 2re
- Pedestrian Headforms
- Q-Series Child Dummies
- FLEX-PLI

ATD - Human Models - Barrier

LSTC – Barrier Models

Meeting the need of their LS-DYNA users for affordable barrier models, LSTC offers the LSTC developed barrier models at no cost to LS-DYNA users.

LSTC offers several Offset Deformable Barrier (ODB) and Movable Deformable Barrier (MDB) models:

- ODB modeled with shell elements
 - ODB modeled with solid elements
 - ODB modeled with a combination of shell and solid elements
 - MDB according to FMVSS 214 modeled with shell elements
 - MDB according to FMVSS 214 modeled with solid elements
 - MDB according to ECE R-95 modeled with shell elements
 - AE-MDB modeled with shell elements
 - IIHS MDB modeled with shell elements
 - IIHS MDB modeled with solid elements
 - RCAR bumper barrier
 - RMDB modeled with shell and solid elements
- e-mail to: atds@lstc.com.

Training - Webinars - Events - Conferences

15th International LS-DYNA® Users Conference & Users Meeting



June 10-12, 2018

**Edward Hotel &
Convention Center
Dearborn, MI, USA**

For Booth & Sponsorship information contact Dilip@lstc.com

The conference will host a forum for engineers, professors, students, consultants, industry leaders, and interested parties to exchange their ideas, and listen to the latest in industry and academic presentations..

The presenter (1) One Presenter of the accepted paper will receive a complimentary (no fee) conference registration, when they register using the "LSTC Conference" group registration code at the Edward Hotel.

Conference Dates:

Sunday	06/10/2018	Registration	Exhibition Area	Reception
Monday	06/11/2018	Registration	Exhibition Area	Banquet
Tuesday	06/12/2018	Registration	Exhibition Area	Closing
Wednesday/Thursday	06/13-14/2018	Training Classes		

Information:

Abstracts & papers papers@lstc.com
Participation, Registration conference@lstc.com

Abstract Deadline - November 30th, 2017

Paper Submission: Deadline: February 14, 2018 FIRM

Notification and templates will be provided by DYNAmore
For any questions please write papers@lstc.com

Registration/Classes: www.ls-dynaconferences.com

Training - Webinars - Events - Conferences



Participant's Training Classes

Webinars

Info Days

Class Directory

Directory

Arup	www.oasys-software.com/dyna/en/training
BETA CAE Systems	www.beta-cae.com/training.htm
DYNAMore	www.dynamore.de/en/training/seminars
ESI-Group	https://myesi.esi-group.com/trainings/schedules
ETA	www.eta.com
KOSTECH	www.kostech.co.kr/
LSTC - (corporate)	www.lstc.com/training
LS-DYNA OnLine - (Al Tabiei)	www.LSDYNA-ONLINE.COM

Social Media



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YOUTUBE Channel	WebSite URL
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CADFEM	www.cadfem.de
ESI Group	www.esi-group.com
ETA	www.eta.com
Lancemore	www.lancemore.jp/index_en.html
Lenovo	

GOOGLE+

BETA CAE Systems	