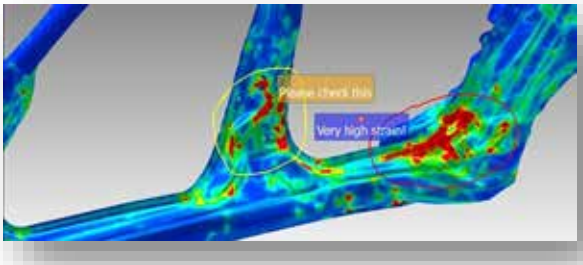
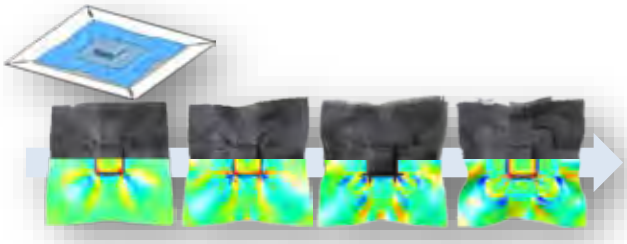
Volume 7, Issue 01, January 2018

www.feainformation.com www.lstc.com www.feaiej.com www.feapublications.com

BETA CAE Systems

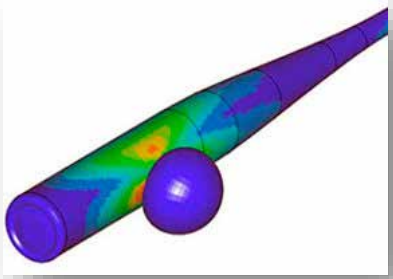


JSOL



ETA

Predictive



ESI Group

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

FEA Engineering Solutions

www.feapublications.com

Contact: Marsha - mv@feainformation.com

FEA Information China Engineering Solutions

Simplified and Traditional Chinese

Contact: Yanhua - yanhua@feainformation.com

Platinum Particpants

Platinum Particpants

BETA SIMULATION SOLUTIONS

MSC Materials Sciences Corporation

eta

esi get it right

JSOL

恒士达科技 Hengstar Tech.

Oasys The Software House of Arup

rescale

Finite Element Analysis Predictive Engineering

FEA Not To Miss

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Announcements

Monthly blog **from our new participant** **FEA Not To Miss**	**Announcement and Call for Papers** **15th German LS-DYNA Forum 2018** **October 15 - 17 2018, Bamberg, Germany** **www.dynamore.de/forum2018-e**

New Area

LS-DYNA Conference(s) & Forum(s)
Editor: Christian Frech of DYNAmore, GmbH

Please visit FEA Participants at the 15th International LS-DYNA Conference booth(s)

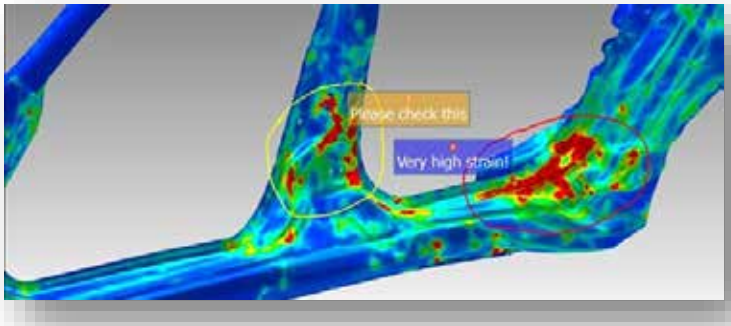
100	ETA	www.eta.com
101	Oasys	www.oasys-software.com/dyna/en /
103	DatapontLabs	www.datapointlabs.com/
107	JSOL	www.jsol.co.jp/english/cae
201	BETA Simulation Solutions	www.beta-cae.com /
301	Predictive Engineering	www.predictiveengineering.com
303	Shanghai Hengstar Technology	www.hengstar.com
400	DYNAmore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

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…

BETA CAE Systems announces the release of the v18.1.0 of its software suite



BETA CAE Systems announces the release of version 18.1.0 of its software suite with brand new tools and capabilities.

https://www.beta-cae.com/news/20171222_announcement_suite_v18.1.0.htm

This first-point release of v18x brings the software to a next level of maturity and functionality richness. We put a lot of effort to incorporate as many of your requirements as possible and paid a lot of attention to the software quality and performance. We are proud to make this new release of our software suite available to you, so that you begin the new year with a bigger potential.

Enhancements in ANSA: ANSA extends its collaboration capabilities with the implementation of the Sketch tool. With this tool you can highlight areas of interest on the model and add notes in the form of annotations, for further check/review. The Web Interface capabilities are also expanded to full ANSA Interface broadcasting.

The new version, introduces a brand new methodology to facilitate the synthesis of modular assemblies. This new approach, powered by the marking capabilities of Assembly Points and Sets, the versatility of Bolts and Connectors, and the file management functionality of ANSA DM, brings a solution to many of the usual bottlenecks of model building process that are related to the interdependencies between the different subsystems. As a result, the maintenance of each subsystem becomes much easier, the assembly of the complete model is carried-out faster and the validation of the assembly after model changes comes at no cost for the analyst.

A brand new Loadcase Manager for Abaqus brings loadcasing capabilities to a new dimension, in compliance with the support of distributions for Abaqus materials and multiple Step Managers in Abaqus deck.

Functionality initially introduced with v18.0.0 is further improved. The Light Volume Representation has been enhanced with the addition of clipping planes. Solid elements can be extruded with minimum user interaction. The seat de-penetration functionality comes with the support of non-linear characteristics of the cushion material, and the Laminate Tool has been enriched with the parametric definition of Laminates and Composites, on top of the Template Layers.

The introduction of the Octree entity allows you to create and preview the result of octree based algorithms, such as, Surface Wrapping, Hextreme, and Cavity meshing. This accelerates the overall generation process as it provides quick leak detection and cutting planes visualization tools, contour plots of mesh size distribution and more, extending the capabilities and performance in the CFD domain.

Polyhedral mesh conversion has now improved speed and memory consumption and can produce ANSA Volume result or Light Volume representation result. Fixing quality for volume meshes has been accelerated and is now available also for polyhedral and Light Volume representation meshes. Significant enhancements have been made in the CFD solvers as well, such as speed enhancements in Fluent Output and improved handling of TGRID meshes with hanging nodes in Fluent Input, Light Volume Representation support for Baffle, CyclicACMI and multi-region in OpenFOAM, Thermal Links Wizard and El Temp Menu, displaying temperatures directly on the model, in TAI Therm.

Implementations such as the material homogenization, the support of xMCF format and of new FEMSITE version, as well as updates in CGNS format (HDF5 I/O, Light Volume Representation I/O, Hybrid Output) are just representative cases of the vast developments that have taken place in v18.1.0.

For more details about the new software features, enhancements and corrections please, refer to the Release Notes document.

Enhancements in EPILYSIS: Apart from the continuous enhancements in the overall performance and accuracy, Topology Optimization has also been enriched with new manufacturing constraints. Sizing optimization is now available including application on composites while mode analysis has also been added to the optimization solution (200).

For more details about the new software features, enhancements and corrections please, refer to the Release Notes document.

Enhancements in META

META also extends its collaboration capabilities with the implementation of the Sketch tool, for pointing out areas of interest on the model and adding notes in the form of annotations.The Web Interface capabilities are also expanded to full META Interface broadcasting.

The capabilities of Virtual Reality have been augmented. Full support of Oculus Rift /HTC Vive is provided, in compliance with a complete VR tablet GUI with animation, focus, and inspection planes features and capabilities. Furthermore, animation speed in High Quality rendering has been significantly accelerated.

The Modal Parameter Estimation is now supplementing the suite with NVH calculations available in META, enabling the assessment of modal parameters and eigenvectors from a provided set of transfer function results.

Through an attempt to couple RETOMO with the rest of the BETA products, META v18.1.0 can now import RETOMO volumes and proceed with rendering.

As for discipline enhancements, vortex tracking and CGNS are supported now in the CFD area. ATFX for I/O in NVH field, JT 10 CAE export, Autoform, Moldex 3D and ADAMS view with flex bodies for Multibody dynamics are also implemented in this version, together with a new toolbar for Fatigue Safety factors calculation.

2D and 3D plots are embedded in vector format ensuring high quality images irrespectively of the image size, while units, curve linked calculations and updates, as well as undo functionality for curves is now supported for 2D plots.

For more details about the new software features, enhancements and corrections please, refer to the Release Notes document.

New Documentation - Best Practices

- Best Practices on Batch Mesh Manager with a new approach to improve the Batch Mesh result
- Features and their characteristics identification and handling through the Feature Manager
- Enhanced mesh improvement and treatment functionality of the new FE Perimeters entities
- Apply Design Actions on features through the Features Manager
- New techniques and tools for a perfect middle surface mesh extraction

For more details about the new software features, enhancements and corrections please, refer to the Release Notes document.

Compatibility and Supported Platforms: ANSA files saved by all the first and second point releases of a major version are compatible to each other. New major versions can read files saved by previous ones but not vice versa.

META Project files saved from version 18.1.0 are compatible and can be opened by META version 16.0.0 or later. To be readable by META versions earlier than v16.0.0, they have to be saved selecting the option "Version <16.0.0".

Support for 32-bit platform has been discontinued for all operating systems.

Download - Where to download from

Customers who are served directly by BETA CAE Systems, or its subsidiaries, may download the new software, examples and documentation from their account on our server. They can access their account through the "user login" link at our web site.
Contact us if you miss your account details. The Downloads menu items give you access to the public downloads.

Customers who are served by a local business agent should contact the local support channel channel for software distribution details.

What to download

All files required for the installation of this version reside in the folder named "BETA_CAE_Systems_v18.1.0" and are dated as of December 22, 2017. These files should replace any pre-releases or other files downloaded prior to that date.
The distribution of this version of our pre- and post-processing suite is packaged in one, single, unified installation file, that invokes the respective installer and guides the procedure for the installation of the required components.

For the installation of the software on each platform type, the.sh installer file residing in the folder with respective platform name, for Linux and MacOS or the respective .msi installer file for Windows, 64bit, have to be downloaded.

In addition to the above, optionally, the META Viewer is available to be downloaded for each supported platform.

The tutorials and the example files reside in the folder named "TUTORIALS". This folder includes the complete package of the tutorials and example files, and a package with only the updated ones.

The Abaqus libraries required for the post-processing of Abaqus .odb files are included in the installation package and can be optionally unpacked.

Earlier software releases are also available in the sub-directory called "old" or in a folder named after the product and version number.

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BETA CAE Systems
Open Meeting in Germany
February 8, 2018
Leinfelden-Echterdingen, Germany
hosted by LASSO Engineering

BETA CAE Systems
Open Meeting in France
February 15, 2018
Etablissement SAFRAN PARIS-SACLAY
hosted by SAFRAN Engineering Services

BETA CAE Systems India
Open Meeting in Chennai
February 27, 2018
Hilton Chennai

BETA CAE Systems India
Open Meeting in Bangalore
March 1, 2018
Sheraton Grand Bangalore

BETA CAE Systems India
Open Meeting in Pune
March 6, 2018
The Westin Pun

BETA CAE Systems Nordic
Open Meeting
March 20, 2018
Lindholmen Conf. Center & Science Park

Previously: DON'T MISS THE VIDEO:
Comprehensive Safety CAE For The All-New VOLVO S90/V90/V90CC

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.

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.

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…

Visualize your Data - View your data using extensive library of visualizations to understand your information and to help you make decisions quickly….

Introducing Peacock beta - View your 3D data using our native Multi-threaded GPU-Powered Visualizer….

Track Key Performance Targets and Indexes Define and track key performance targets across simulations and tests to help you identify your design performance…

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..

Experimental Data - d3VIEW's data to decision framework supports storing, organizing and visualization of experimental data…

Author: Christian Frech christian.frech@dynamore.de Contact: forum@dynamore.de

Announcement and Call for Papers

15th German LS-DYNA Forum 2018
October 15 - 17 2018, Bamberg, Germany
www.dynamore.de/forum2018-e

Call for Papers
DYNAmore kindly invites you to participate at the 15th German LS-DYNA® Forum 2018 and encourages you to actively contribute to the conference agenda by submitting a presentation about your experience with the LSTC product range. Participation without a presentation is also worth-while to exchange your knowledge and discuss new solution approaches with other users. Besides presentations from users, there will be also selected keynote lectures of renowned speakers from industry and universities as well as developer presentations from LSTC and DYNAmore. The popular workshops on various topics will also be continued.

We hope that we have stimulated your interest and are looking forward to receiving your abstract and to seeing you in Bamberg.

Attending
In user presentations from industry and academia you will learn more about the software packages LS-DYNA®, LS-OPT®, LS-TaSC™ and LS-PrePost®, as well as their application possibilities for virtual product design.

Presenting
Communicate your work with international colleagues to share knowledge and to stimulate discussions with other users about new solution approaches.

Exhibiting and sponsoring
If you want to contribute, please request additional exhibitor and sponsoring information.

Venue
Welcome Kongresshotel Bamberg
Mußstraße 7, 96047 Bamberg, Germany
www.welcome-hotels.com/welcome-kongresshotel-bamberg

Conference languages
German and English

Contact
DYNAmore GmbH
Industriestr. 2, D-70565 Stuttgart, Germany
Tel. +49 (0) 7 11 - 45 96 00 - 0
E-Mail: conference@dynamore.de
www.dynamore.de

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 Cloud **Cloud Based Virtual Engineering Solutions - Start Your Free Trial**

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, visualization, and real-time collaboration tools.

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

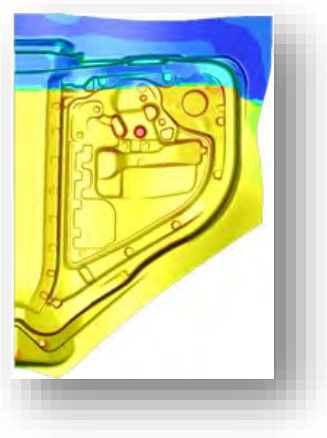
1. An end-to-end SaaS model: Where modeling, multi-physics solving, results visualization and collaboration are conducted in the cloud through a web browser.
2. A Hybrid model: Where modeling is done on desktop with solve, visualization and collaboration done in the cloud through a web browser.

ESI Cloud users will enjoy the following benefits:

- **Reliability -** CAE solutions extensively used across industries by OEMs and Tier-1 suppliers
- **Accessibility -** Cloud hosted with browser based user interface accessible anywhere
- **Scalability -** Flexible software and hardware offering with pay as you go pricing
- **Easy-to-use -** Templates and workflows for enhanced productivity
- **Collaboration -** Real-time multi-user collaboration with data, project and workflow sharing
- **Security -** Multiple layers of security to data protection based on strict industry standards

For additional product information, please feel free to visit our website, contact any of the local ESI subsidiaries or contact Andrea Gittens, Product Marketing Manager for ESI Visual-Environment.

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.



DYNAFORM is a simulation software solution, which allows organizations to bypass soft tooling, reducing overall tryout time, lowering costs, increasing productivity & providing complete confidence in die system design. It also allows for the evaluation of alternative and unconventional designs & materials. By simulating every detail during the design stage, DYNAFORM ensures the highest quality formed part & most efficient manufacturing process possible.

DYNAFORM Modules:

Blank Size Engineering (BSE) - BSE is widely used for estimating blank size, along with blank nesting for maximum material usage, scrap & piece price. The plug-in is used to predict thinning, thickening & also to generate a forming limit diagram (FLD).

Formability Simulation (FS) - FS facilitates the rapid development & validation of single-station & progressive die designs. It uncovers hidden problem areas & enables designers to optimize designs based on accurate forming results.

Die Evaluation (D-Eval) - Since most tooling designs are done in a CAD environment, DYNAFORM's D-Eval Module was specially created to support and analyze CAD based tooling and engineering designs.

Die System Analysis (DSA) - DSA efficiently predicts many stamping related concerns within the die production line. It is used to analyze scrap shedding/removal, die structural integrity & sheet metal transferring/handling.

Optimization Platform - This module helps users to go beyond identifying problem areas, by incorporating design optimization to improve performance and quality - reducing wrinkling, thinning and tearing.

DYNAFORM Modules in NX

BSE-in-NX - BSE is a complete solution for accurately estimating blank size along with blank nesting for maximum material utilization, minimum scrap and piece costs—all within the familiar NX environment.

D-Eval-in-NX - Analyze CAD Based Die Designs in NX. DYNAFORM's D-Eval-in-NX Module was specially created to support and analyze CAD based tooling and engineering designs within the native NX environment.

Training DYNAFORM www.eta.com/training

January 17 - 18

February 21 - 22

March 21 - 22

April 18 - 19

For more information, please visit - www.eta.com .

FEA Not To Miss, is a weekly internet blog on helpful videos, tutorials and other Not To Miss important internet postings. Plus, a monthly email blog.

Welcome to Monday - grab a cup of coffee, tea or protein drink and join me for FEA Not To Miss Monday

Postings every Monday on what you have missed

Posted on January 14, 2018 And Not To Miss Art Shapiro's first blog on Kids That Code.

So, there you are a mechanical engineer, drinking your Monday morning coffee. And, I bet you always wanted to try Electromagnetics, but never found the courage to go through the keywords and theory! AHA! I just knew I was right - look no further!

Now, take your coffee and off you go down the internet rural road, just a few miles, to the LS-DYNA Multiphysics channel, where you will find the road to a series of tutorials. How do I know this will help you? you want to know? Okay, Inaki told me!

SO, guaranteed, it will help regarding the use of the EM solver for metal forming applications. Physics, keywords, numerical concepts, examples. (I used Greg shorthand to take down that sentence from Inaki)

BUT ALL WILL SUDDENLY BECOME CLEAR, AS YOU GO THROUGH THIS STEP BY STEP EXPERIENCE!

Magic! Your days will be transformed - you will be able to impress your colleagues with little known facts about the Maxwell equations, at coffee break! GO FOR IT! LS-DYNA Multiphysics

For coffee refunds or Electromagnetic questions, please do not contact me - I know what not to miss - not how engineers do it.

Monthly blog sent via email directly to your mailbox

Send your name and email to feaanswer@aol.com Subject "add"

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.

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n 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.

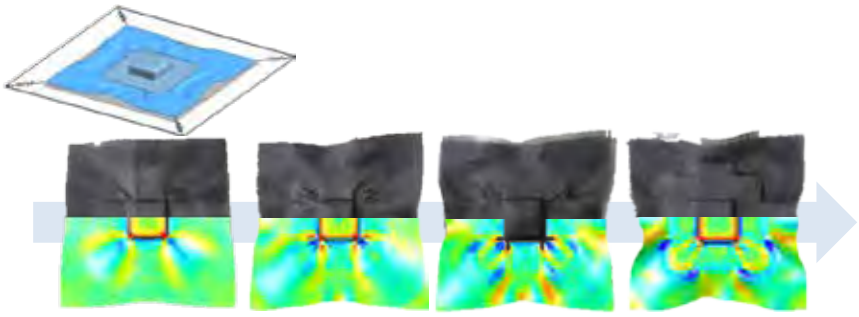
For Article and higher resolution **Contact; cae-info@sci.jsol.co.jp**

J-Composites - New tool series for process and process-chain simulations of composite materials

JSOL Corporation, a Japanese LS-DYNA distributor, released the J-Composites series. A series of new software tools to help LS-DYNA users easily conduct process/process-chain simulations of fiber reinforced composites.

Fiber reinforced composites are good alternatives for metals used in load transmission structures. The increasing requirement for high performance and weight reduction in industry has gradually expanded the use of composites. Finite element analysis as an alternative approach for experimental study is effective in designing fiber reinforced composite products because there are many design parameters. Process/process-chain simulations are especially important because the performance of the final composite part strongly depends on changes in fiber orientation during the process. In this context, JSOL is developing the J-Composites series. A series of new software tools to help LS-DYNA users easily conduct process/process-chain simulations of fiber reinforced composites.

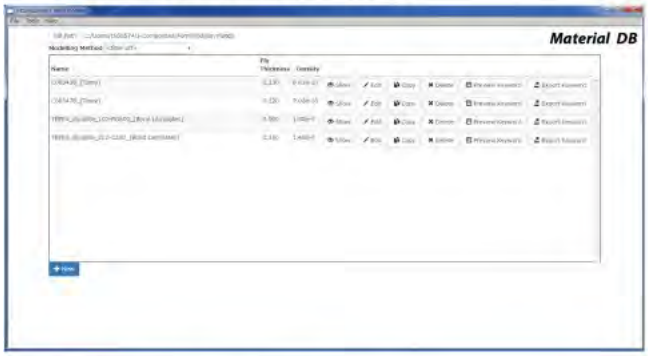
The first software tool, called J-Composites/Form Modeler, was released in August 2017, in Japan. This tool is for creating FE models for continuous fiber reinforced composite forming simulation. Users can create models that, when used with LS-DYNA, will accurately predict the macroscopic forming behavior of laminate plies made of dry fabric and thermoplastic/thermoset pre-pregs. Through simulation, this tool can help the user detect forming defects like wrinkling, fiber bridging and rupture, which leads to reduced development time and cost.



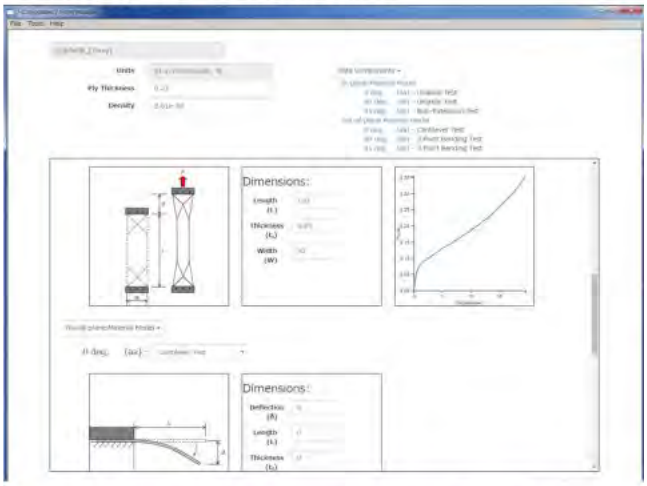
Accurate prediction of wrinkle development (Carbon fiber fabric)

The key features of Form Modeler are easy build-up of material models with automatic parameter identification based on material testing results, efficient setup of laminate modeling with the easy-to-use UI, and the mapping of forming information to crash simulation models.

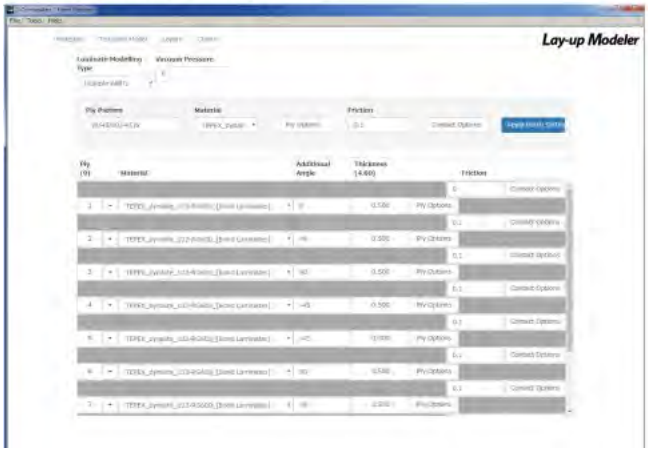
Standard material database included



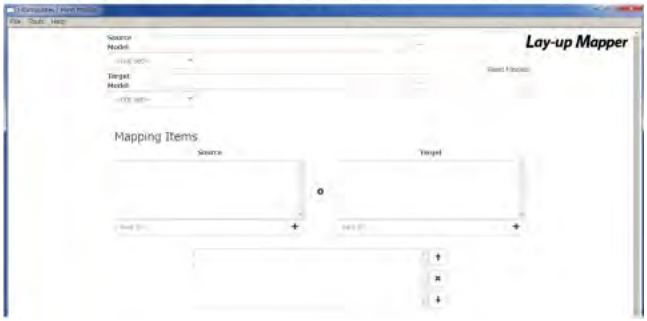
Material parameter identification



Setup laminate composition



Forming information mapping to crash model



Main functions of Form Modeler

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

A team of engineers, mathematicians, & computer scientists develop LS-DYNA, LS-PrePost, LS-OPT, LS-TaSC, and LSTC's Dummy & Barrier models.

Article with full resolution graphics is located at: http://www.lstc.com/new_features

LSTC WinSuite – a complete solution for the Windows platform

Anders Jernberg, DYNAmore Nordic AB
Dilip Bhalsod, Guanhua Zhang, Gunther Blankenhorn LSTC

Introduction

With the release of LS-DYNA R10, a new installer called WinSuite has been released for Windows. This installer contains a complete environment for running the major products from LSTC; LS-DYNA, LS-PrePost, LS-OPT and LS-TaSC. It also includes the new program LS-Run which can act as a control center when running LS-DYNA. WinSuite contains everything needed to get started using LS-DYNA on Windows including self-study tutorials and support for queuing up jobs on the local computer.

For LSTC WinSuite download information please contact gunther@lstc.com or your local distributor

The content:

The single installation file contains several individual packages (LS-DYNA, LS-PrePost, LS-OPT, LS-TaSC and LS-Run). These can later be updated individually when new updated versions for these programs becomes available. The most recent release version of LS-DYNA is also included.

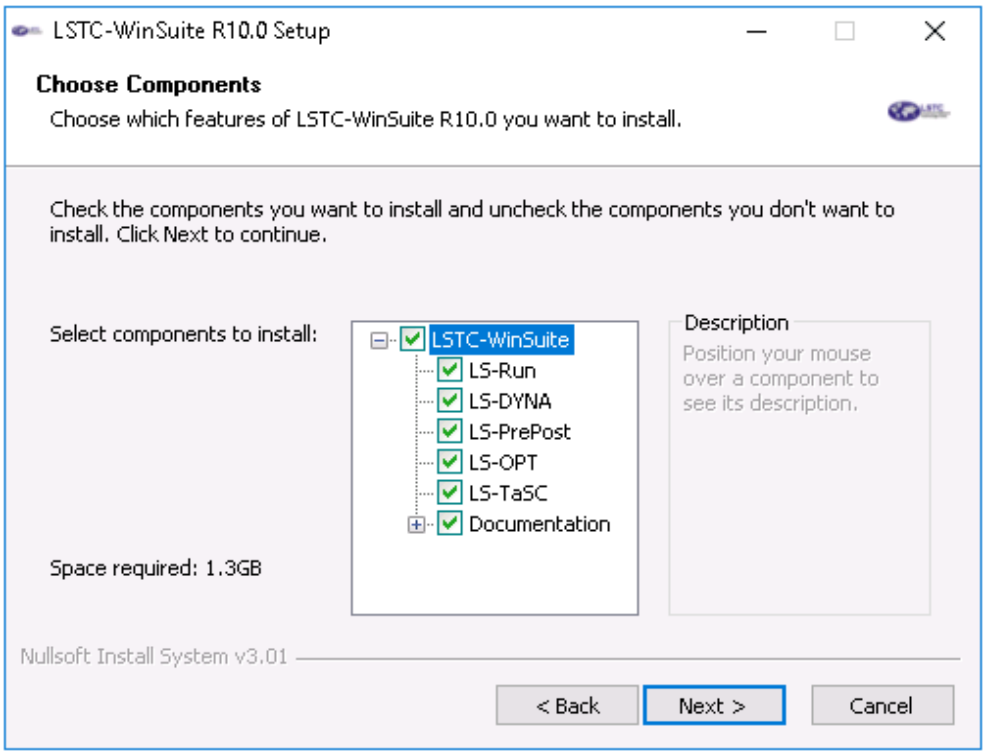
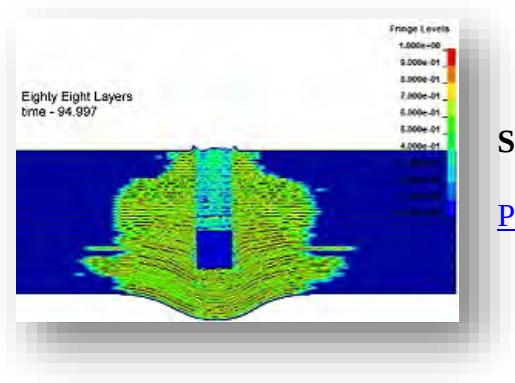


Figure 1 Installation options

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.

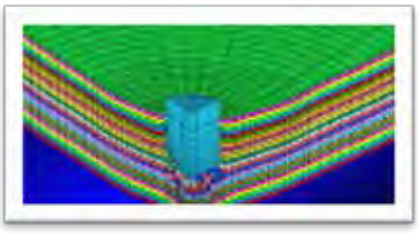


Simulation Movie

Penetration and Perforation of Moderately Thick Composites

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 LS-DYNA Environment - YouTube

Oasys PRIMER: Model Build/Databases

Gavin Newlands, Arup Associate and developer of the Oasys PRIMER software presents this free webinar, which describes and demonstrates the process of building multiple models within Oasys PRIMER, using a PRIMER model database and positioning impactors at multiple locations.

The Oasys PRIMER pre-processor is designed to make preparation and modification of LS-DYNA models as fast and as simple as possible, improving user productivity and efficiency and reducing the time spent manipulating and developing models suitable for LS-DYNA.

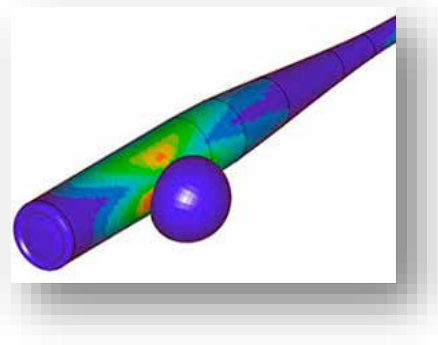
Our priority with Oasys PRIMER is to provide complete support for every LS-DYNA keyword. The user can be assured that every model read in and written out will lose no data.

Main features:

- Full support for LS-DYNA version R9.0
- Connections function for defining various connections (e.g. spotwelds, bolts) including a Autoweld function that does not require an input file
- Quick-pick menu for on-screen manipulation of entity display characteristics
- Quick-pick menu for on-screen editing of LS-DYNA keywords
- Easy access to part data through the Part Tree navigation menu, and Part Table
- Cross reference viewer menu for tracking how different entities refer to each other
- Airbag Folding including mesh-independent airbag folding
- Seatbelt fitting including automatic seatbelt re-fitting after dummy re-positioning
- Mechanisms
- Keyboard shortcut keys for most of the common functions
- Simple meshing capability.
- Full support for LS-DYNA parameters
- Background image and image/model alignment function

Complete Information Oasys PRIMER

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.



Baseball Bat Mechanics

NCAA Baseball Bat Impact Analysis with Elastomeric Ball

YouTube Video

Analysis: LS-DYNA

To understand the mechanics of aluminum bat/ball interaction. A FEA model was constructed of an aluminum bat based on geometric and material property data supplied by the client.

Modeling Assumptions and Details: A FEA model was constructed of an aluminum bat based on geometric and material property data supplied by the client. The model was validated by weight and modal analysis. The FEA model of the baseball was based on mechanical test data of a ball being squeezed between two rigid platens. This limited mechanical test data was then fitted to the FEA model and then calibrated for an appropriate value of internal damping against experimental NCAA BESR test data. One experimental data point was used as the calibration value and then validated against four other experimental data points. Good correlation was shown.

The calibrated model was then exercised through various scenarios to investigate the effects of increased bat stiffness (higher Mode 1 frequencies), hoop stiffness, Moment-of-Inertia (MOI) variation with attendant bat velocity change, and lastly, bat end-cap effects.

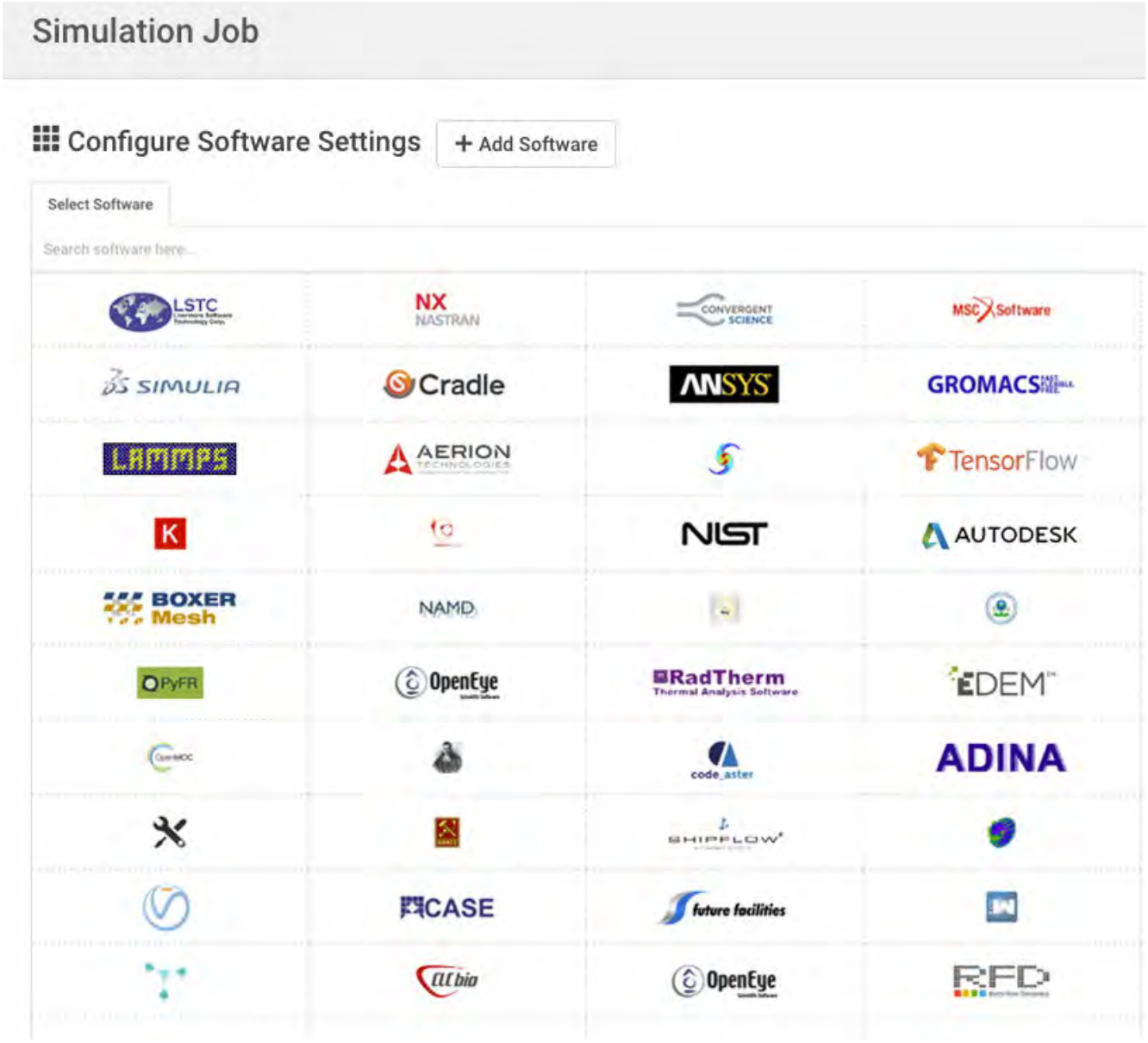
Results and Summary: FEA results clearly show the advantages of a stiffer handle, softer barrel and a low MOI. Conversely, it was shown that a stiffer End-Cap and a high MOI are deleterious to the bat's performance.

Some comments are also made about the utility of the BESR versus the T-Stand testing apparatus.

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.

Turn-key access to 200+ simulation software packages.

Pay-as-you-go for the license or bring your own license server.



Turn-key access to 200+ simulation software packages.

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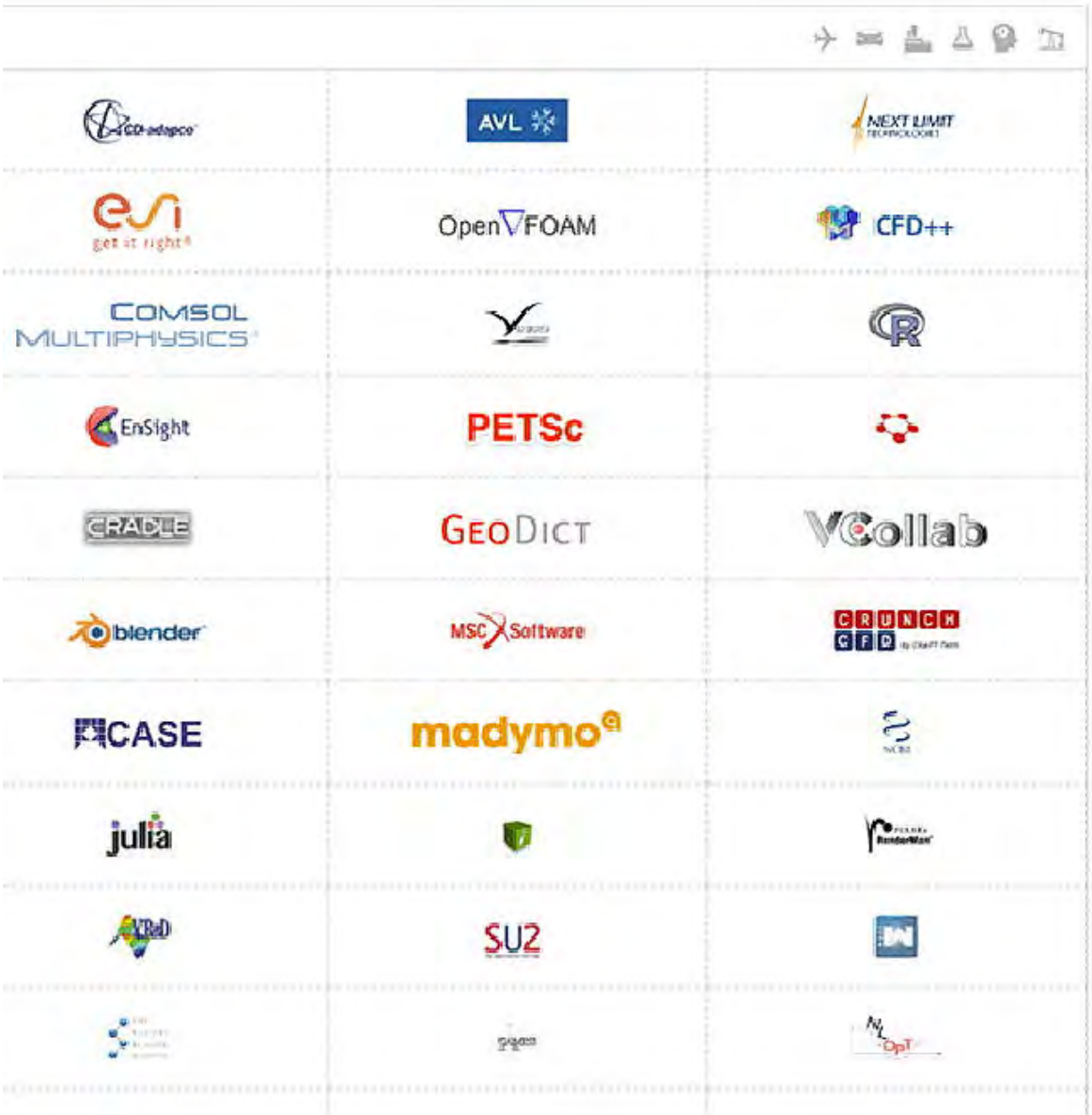

CAE software sale & customer support , initial launch-up support, periodic on-site support. Engineering Services. Timely solutions, rapid problem set up, expert analysis . material property test Tension test, compression test, high-speed tension test and viscoelasticitiy test for plastic, rubber or foam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

The paper is featured in full on www.feaiej.com - January issue

Impact Analysis of Reinforced Concrete Walls Using LS-DYNA: Application to Impact of Wind-Blown Vehicles due to Tornadoes

Manoj Madurapperuma and Kazukuni Niwa - Terrabyte Corporation

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 aerocraft 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.

China FEA News Participants

www.eta.com

www.flotrend.com.tw

恒士达科技
Hengstar Tech.
www.hengstar.com

Dynawe
www.dynawe.com

ARUP
www.oasys-software.com/dyna

AgileSim
www.agilesim.com.tw

PAN-i
www.pan-i.com

DLFK
http://dalianfukun.com

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Editors: Yanhua Zhao - Yanhua@feainformation.com

BETA
SIMULATION SOLUTIONS

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 of LSTC to provide an integrated solution in the field of optimization.

BETA CAE Systems μETA

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

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

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 compary 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.

ETA – Engineering Technology Associates **www.eta.com**

etainfo@eta.com

Inventium Suite™

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

Inventium'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

Inventium'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

get it right®

Latest Release is ESI Visual-Environment 12.0

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.

Visual*DSS* 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. Visual*DSS* 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

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:

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)
- 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

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

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.

恒士达科技
Hengstar Tech.

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..

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 epensive 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

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

Distribution, Consulting, Training

United States **ESI Group N.A** **info@esi-group.com**

www.esi-group.com

PAM-STAMP

QuikCAST	SYSWELD	PAM-COMPOSITES	CEM One
VA One	CFD-ACE+	ProCAST	
	Weld Planner	Visual-Environment	IC.IDO

United States **Engineering Technology Associates – ETA** etainfo@eta.com
www.eta.com

INVENTIUM/PreSy	NISA	VPG	LS-DYNA
LS-OPT	DYNAform		

United States **Predictive Engineering** info@predictiveengineering.com
www.predictiveengineering.com

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

Distributor for Siemens PLM Software at www.AppliedCAx.com (FEMAP, NX Nastran, STAR CCM+, NX CAD/CAM/CAE)

Distribution, Consulting, Training

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	www.dynasplus.com		Oasys Suite	
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	DYNAFORM	VPG	MEDINA	
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	DSDM Products		LSTC Dummy Models	FEMZIP
	LSTC Barrier Models		DIGIMAT	

Germany	**CADFEM GmbH**		lsdyna@cadfem.de	
	www.cadfem.de			
	ANSYS	LS-DYNA	optiSLang	
		AnyBody		
	ANSYS/LS-DYNA			

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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			
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Russia	**Limited Liability DynaRu**		office@lsdyna.ru	
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	DSDM Products		LSTC Dummy Models	FEMZIP	
	LSTC Barrier Models		DIGIMAT		
Sweden	**DYNAmore Nordic**		marcus.redhe@dynamore.se		
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	LS-PrePost	LS-TaSC	FastFORM	DYNAform	
	FormingSuite		LSTC Dummy Models		
			LSTC Barrier Models		
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UK	**ARUP**	dyna.sales@arup.com			
	www.oasys-software.com/dyna		TOYOTA THUMS		
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	LS-TaSC		PRIMER	D3PLOT	T/HIS
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	DIGIMAT	Simpleware	LSTC Dummy Models		
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	www.oasys-software.com/dyna			
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	DIGIMAT	FEMZIP	LSTC Barrier Models	LS-TaSC
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	LS-DYNA	LS-TaSC	LSTC Barrier Models	D3VIEW
	LS-PrePOST	LS-OPT	LSTC Dummy Models	
	Genesis	VisualDoc		ELSDYNA
	Visual-Crahs DYNA	Visual-Proeces		DynaX & MadyX
	Enki Bonnet	Visual Environement		

India	**Oasys Ltd. India**		lavendra.singh@arup.com	
	www.oasys-software.com/dyna			
	PRIMER	D3PLOT	T/HIS	
			LS-OPT	LSTC Dummy Models	LS-PrePost
			LS-DYNA	LSTC Barrier Models	LS-TaSC

India	**CADFEM India**		info@cadfem.in	
	www.cadfem.in			
	ANSYS	VPS	optiSLang	
	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**	LS-dyna@ctc-g.co.jp		
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	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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Japan	**LANCEMORE**	info@lancemore.jp		
	www.lancemore.jp/index_en.html			
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Japan	**Terrabyte**	**English:**		
	www.terrabyte.co.jp	www.terrabyte.co.jp/english/index.htm		
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	LSTC Dummy Models	LSTC Barrier Models	AnyBody	

Distribution, Consulting, Training

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	www.lsdyna.co.kr		Oasys Suite	
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	LSTC Dummy Models	LSTC Barrier Models	eta/VPG	Planets
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	JSTAMP/NV	Scan IP	Scan FE	Scan CAD
	FEMZIP			

Korea	**KOSTECH**	young@kostech.co.kr		
	www.kostech.co.kr			
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	LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM
	eta/DYNAFORM	DIGIMAT	Simuform	Simpack
	AxStream	TrueGrid	FEMZIP	

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

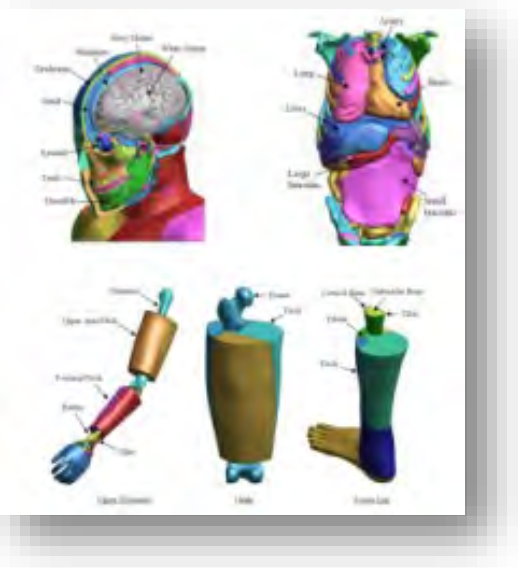
LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM

Taiwan **SiMWARE Inc..**

www.simware.com.tw

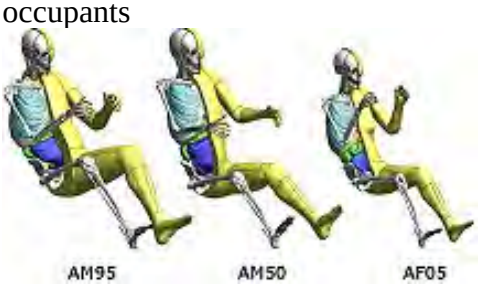
LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM

TOYOTA - Total Human Model for Safety – THUMS

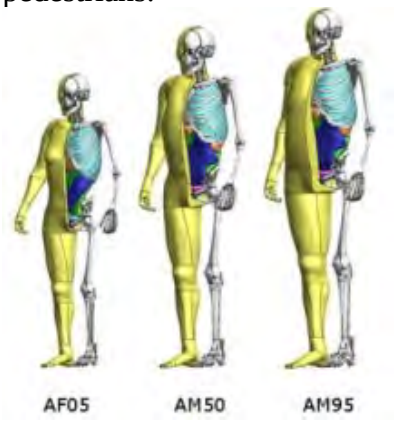


The Total Human Model for Safety, or THUMS®, is a joint development of Toyota Motor Corporation and Toyota Central R&D Labs. Unlike dummy models, which are simplified representation of humans, THUMS represents actual humans in detail, including the outer shape, but also bones, muscles, ligaments, tendons, 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.

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-IIs 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

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

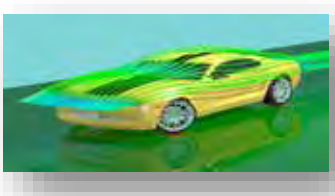
- MDB according to FMVSS 214 modeled with shell elements
- MDB according to FMVSS 214 modeled with solid elements
- MDB according to ECE R-95 modeled with shell elements
- AE-MDB modeled with shell elements

- 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.

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

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
Dynardo	http://www.dynardo.de/en/wost.html
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

Training - Dynamore

Author: Christian Frech christian.frech@dynamore.de

New seminar brochure 2018

Visit the website for complete overview and registration www.dynamore.de/seminars

Download full seminar brochure (pdf): www.dynamore.de/seminarbroschure2018

Selection of trainings from January to March

Introduction	
Introduction to LS-DYNA	30 Jan-01 Feb (V) 20-22. Feb 13-15March (Z) 20-22 March
Introduction to LS-PrePost	19 Feb/12 March (Z) 19 March
Nonlinear implicit Analyses	16 March
Basic/Theory	
User Interfaces in LS-DYNA	5 February
Element Types and Nonlinear Aspects	23 February
Crash/Short-Term-Dynamics	
Failure of Fiber Reinforced Polymer Components	15 February
Crash Analysis	5-8 March (G)
Joining Techniques in LS-DYNA	5 March
Passive Safety	
LS-DYNA Dummy and Pedestrian Impactor Modeling	6 February
Introduction to Passive Safety	8 March
Material	
Material Failure	20 March (T)
Particle Methods	
Smoothed Particle Hydrodynamics	13 March

Information days (free of charge)

Optimization with ANSA, LS-OPT and META	5 February
Cloud Solutions for LS-DYNA	26 February
Process Automation and SDM	26 February
Composite Analysis/ENVYO®	12 March
New Features in LS-DYNA and LS-OPT	27 March (V)

If not otherwise stated, the event location is Stuttgart, Germany. Other event locations are:
G = Gothenburg, Sweden; L = Linköping, Sweden V = Versailles, France; T = Turin, Italy,
Tr = Traboch, Austria, Z = Zurich, Switzerland

We hope that our offer will meet your needs and are looking forward to welcoming you at one of the events.

15th Weimar Optimization and Stochastic Days 2018

June 21-22, 2018

Conference for CAE-based parametric Optimization, stochastic analysis and Robust Design Optimization (RDO).

Motto 2018:
Parameter identification in virtual product development - from model calibration to the real-time analysis of machine conditions using digital twins

The conference offers focused information and training in practical seminars and interdisciplinary lectures. Users can talk about their experiences in parametric optimization, service providers present their new developments and scientific research institutions inform about state-of-the-art RDO methodology.

Information and registration at:
http://www.dynardo.de/en/wost.html

Veranstaltungsort / Venue:
congress centrum neue weimarhalle
Seminar Building
UNESCO-Platz 1
99423 Weimar

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January

29-30	Mon-Tues	MI	Airbag Folding	2	R. Chivukula
31- Feb 1	Wed-Thurs	MI	Airbag Modeling in LS-DYNA	2	A. Nair

February

9	Fri	CA	Material Characterization	1	S. Bala
26-28	Mon-Wed	CA	ALE	3	M. Souli
26	Mon	MI	Intro to LS-PrePost	1	P. Ho / Q. Yan
27- Mar 2	Tues-Fri	MI	Intro to LS-DYNA	3.5	A. Nair

March

1-2	Thurs-Fri	CA	SPH	2	M. Souli
5-6	Mon-Wed	MI	LS-DYNA Advanced	2	S. Bala
19	Mon	CA	Intro to LS-PrePost	1	P. Ho / Q. Yan
20-23	Tues-Fri	CA	Intro to LS-DYNA	3.5	A. Tabiei

April

25-27	Wed-Fri	CA	Advanced ALE & S-ALE Applications	3	I. Do
23	Mon	MI	Intro to LS-PrePost	1	P. Ho / Q. Yan
24-27	Tues-Fri	MI	Intro to LS-DYNA	3.5	A. Nair

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YOUTUBE Channel	WebSite URL
BETA CAE Systems	www.beta-cae.com
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Lancemore	www.lancemore.jp/index_en.html
Lenovo	

GOOGLE+

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Editor: Yanhua Zhao - yanhua@feainformation.com

January - The paper is featured in full on www.feapublications.com
January issue

Excerpt from: Impact Analysis of Reinforced Concrete Walls Using LS-DYNA: Application to Impact of Wind-Blown Vehicles due to Tornadoes

Manoj Madurapperuma and Kazukuni Niwa
Terrabyte Corporation, 3-10-7, Bunkyo-ku, Tokyo 113-0034, Japan

Abstract: Protection of critical facilities against impact of heavy objects during tornadoes has drawn much attention after the recent destructive tornadoes. Analysis of reinforced concrete walls due to impact of wind-blown vehicles is becoming an important consideration particularly for nuclear facilities. In the present study, impact damage to reinforced concrete walls is evaluated using detailed finite element models using LS-DYNA. It is seen that damage to the impacted wall varies depending on vehicle type, speed and impact orientation. Set of equations are proposed to approximately estimate peak impact force on walls due to impact of these vehicles. Further, vehicle velocity limits for scabbing damage and perforation damage to impacted walls are also presented.

Abstract

January - The paper is featured in full on LSTC New Features

Excerpt From: Modeling of Ductile Failure in Destructive Manufacturing Processes Using the Smoothed Particle Galerkin Method

Youcai Wu, C.T. Wu, Wei Hu

Livermore Software Technology Corporation (LSTC)
7374 Las Positas Road, Livermore, CA 94551, U.S.A.

In this paper, ductile failure in destructive manufacturing processes such as friction drilling of metals is modeled using an authentic meshfree method, i.e., the smoothed particle Galerkin (SPG) method. To improve the efficiency and stability of the numerical scheme, the SPG weak form is integrated using the direct nodal integration (DNI) technique that is stabilized by a non-residual penalty type stabilization term derived from displacement. The SPG theory is briefly reviewed and the SPG bond failure mechanism for material failure analysis is elaborated in this paper. The setup for an LSDYNA® SPG analysis is also presented. To demonstrate the performance of the SPG method, a metal friction drilling process is analyzed using the SPG formulation. The sensitivity of the numerical results to the SPG bond failure criteria, the nodal support size, the frequency of SPG kernel updating, and the coefficient of friction is thoroughly studied in the numerical example. The results are also compared to limited experimental data.

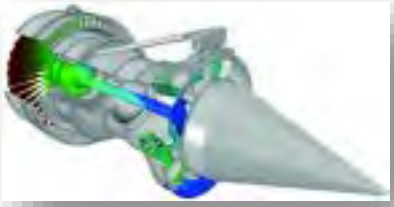
Editor: Yanhua Zhao - yanhua@feainformation.com

Among the Previous Months Postings on New Features

- Thick Shell Element Form 5 in LS-DYNA
- 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

LS-DYNA Implicit Analysis

www.lstc.com



Jet Engine

LS-DYNA® provides a comprehensive set of analysis tools for engineering applications. Implicit and explicit solutions use the same elements and materials enabling users to have one model for static and dynamic analyses.

Seamless switching between implicit and explicit solutions during a simulation increases the level of applicability. Implicit linear and nonlinear solutions can be either static or dynamic. Dynamic solutions can be performed in either the time or frequency domains. Furthermore, there are powerful tools for examining frequency content for model verification and validation, a capability that can be used stand-alone or incorporated in an implicit or explicit transient simulation to include the effect of prestress. Resulting modes can be used to build reduced linearized models for use in design studies by modal analysis or employed by the frequency domain analysis tools.

Applications:

Implicit analysis can be used on a wide variety of application areas, including but not limited to;

Automotive

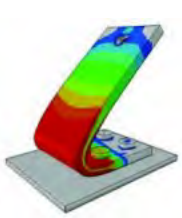
- Gravity Loading
- Dummy Seating
- Door Sag
- Roof Crush
- Seat Pull

Aerospace

- Fuselage Drop Test
- Jet Engine Start Up
- Analysis of Seats
- Consumer Goods
- Satellite Stress and Vibration Tests
- Drop Test
- Vibration computations for Acoustical Analysis

Features

- Linear Analysis
- Vibration Analysis
- Nonlinear Static and Dynamic Analysis
- Constraint and Attachment Mode Analysis



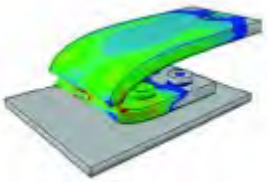
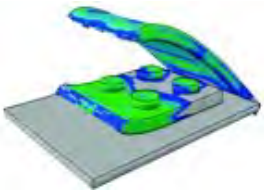
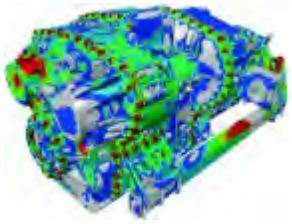
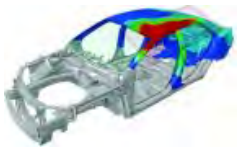


Plate Failure





Bolt Preload



Roof Crush

No Fee, 30-day demo license, contact sales@lstc.com to start using LS-DYNA

15th LS-DYNA Int'l Conf. & Users Mtg

Christian Frech - DYNAmore GmbH www.ls-dynaconferences.com

Among the papers to be presented and/or published

15th LS-DYNA® International Conference & Users Mtg.
June 10th, 11th & 12th 2018
Edward Hotel & Convention Center - Dearborn, MI

We are pleased to share that we have over 210 papers accepted for the conference. Below in alpha order is a few of the title, all titles are copyright to the respective authors.

Join us at the conference - Register Now -

- A Customized Job Manager for Metal Forming Simulations with LS-DYNA
- A non-orthogonal material model of woven composites in the preforming process
- A peridynamic model for damage prediction of fiber reinforced composite laminate
- A study on delamination behavior between aluminum and CFRTP
- A study on scatter during production process using statistical approach
- A unified environment for collaborative CAE and immersive simulation results' processing
- ACP-OpDesign: Optimal Design Gateway : Reveal the path to optimized products
- Advanced results databases compression techniques to allow their efficient use in results data management systems
- Advances in fatigue analysis with LS-DYNA
- Advances in LS-DYNA for Metal Forming (I)
- Advances in LS-DYNA for Metal Forming (II)
- Airbag Folding with JFOLD - Latest Developments and Case Studies
- Airdrop sequence simulation using LS-DYNA ICFD solver and FSI coupling
- AN ENGINEERING APPROACH TO ESTIMATING PARTIALLY SATURATED SOIL CONSTITUTIVE PROPERTIES
- An Enhanced Assumed Strain (EAS) Solid Element for Nonlinear Implicit Analyses
- An Enhancement of LS-DYNA XFEM Shell for Dynamic Ductile Failure Analysis
- Application of a Full-Field-Calibration Concept for Parameter Identification of HS-Steel with LS-OPT®

15th LS-DYNA Int'l Conf. & Users Mtg

- Bake-Hardening Effect in Dual-Phase Steels: Experimental and Numerical Investigation
- CFD Validations with FDA Benchmarks of Medical Devices Flows
- Classification-based Optimization Probabilistic Analysis Using LS-OPT
- Cloud-based Pedestrian Safety App
- Comments on Compressible Flows, Gaseous Explosions, and compressible FSI Capabilities for the CESE and Chemistry Solvers in LS-DYNA®
- Connection modeling using LS-DYNA implicit
- Constitutive modeling of soft biological tissues
- Corrugated Fiber Board as a Packaging Material: Experimental and Numerical Analysis of the Mechanical Behavior
- Development of New Simulation Technology for Compression Molding of Long Fiber Reinforced Plastics using LS-DYNA
- DIC-based Full-Field Calibration using LS-OPT: An Update
- Discussion on NVH analysis with various eigensolvers in LS-DYNA®.
- Door System Multimaterial Lightweighting Using ACP OpDesign Optimization-Led Design Software and the LSTC Software Suite (LS-TaSc, LS-OPT and LS-DYNA)
- Dynamic Constitutive Model for Polymers with Considering Strength-Differential Effect and Strain Rate Dependency
- Electro-Physiology using LS-DYNA
- Facing Future Challenges in Crash Simulation Engineering -- Model Organization, Quality and Management at Porsche
- Fluid Flow Modeling with SPH in LS-DYNA
- Fluid structure interaction simulation of bonnet flutter
- FSI simulation of a double-deck bus cornering under crosswind effects
- Full-Field Calibration of Biological Tissue using LS-OPT
- Gaudi's Sagrada Familia Basilica, Barcelona
- Getting your model ‘right’ – Checking before, during and after your LS-DYNA Analysis
- Higher Order Solid Elements in LS-DYNA®
- ICFD: summary of recent and future developments

- Implementation of MCEER TR 14-0006 Blast Load Curves in LS-DYNA and Benchmark to Commonly Practiced Blast Loading Application Methods
- Improvement of Mesh Fusion in LS-DYNA
- In Core Adaptivity
- Increasing the Scale of LS-DYNA Implicit Analysis
- Investigating the post processing of LS-DYNA in an fully immersive workflow environment
- J-Composites - Introducing new software tools for process and process chain simulations of composite materials
- Li-Ion battery modeling strategies for electric vehicle crash applications
- Linear Analysis of a full vehicle models for NVH and Durability Load Cases
- LS-DYNA®'s Linear Solver Development — Phase1: Element Validation Part II.
- LS-DYNA®'s Linear Solver Development — Phase2: Linear Solution Sequence.
- MLS-based SPH in LS-DYNA for increased accuracy and tensile stability
- Model Set up, Analysis and Results of the Inverse Forming tool in ANSA
- Modelling of crazing in rubber-toughened materials
- Multiscale Simulations of Material with Heterogeneous Structures Based on Representative Volume Element Techniques
- Numerical Investigation of Homogeneous Equilibrium Model and Fluid-Structure Interaction for Multiphase Flows
- Numerical Simulation of Aircraft Seat Compliance test using LS-DYNA Implicit solver
- Occupant Injury Criteria, a complete solution for the evaluation of occupant and structural, simulation and physical test results in META
- One the significance of the spatial discretization for crashworthiness,studies: Shell vs. Solid elements
- Optimisation of Fixturing Clamps to Improve Panel Measurement Robustness
- Parametric and Convergence Studies of the Smoothed Particle Galerkin (SPG) Method in Semi-brittle and Ductile Material Failure Analyses
- Performance of the projected subgradient method in LS-TaSC™
- process2product simulation: Closing incompatibilities in constitutive modelling and spatial discretization with ENVYO
- Randles circuit parameters set up for battery simulations in LS-DYNA
- Rapid simulations of Welding and AM using LS-DYNA and LS-PREPOST
- Recent developments in *DEFINE_PRESSURE_TUBE for simulating pressure tube sensors in pedestrian crash
- Recent Developments in Isogeometric Analysis for LS-DYNA

- Recent Developments in Isogeometric Analysis with Solid Elements in LS-DYNA
- Recent improvements in LS-DYNA hot metal forming for convergence and efficiency
- Recent Updates to the Structural Conjugate Heat Transfer Solver
- Re-using crash models for static load cases with minimal effort
- Scalability study of particle method with dynamic load balancing
- Shape optimization for MDO with LS-DYNA suite
- Sheet metal forming simulation with IGA in LS-DYNA
- Simulation for crush behavior of glass mat reinforced thermoplastic composite material
- Simulation of the Performance of Passenger Rail Vehicles under Blast Conditions in LS-DYNA
- Smoothed Particle Galerkin Method with a Second-order Accurate Momentum-Consistent Algorithm for Free Surface Flow Simulation
- Sound absorbing Porous Material In Statistical Energy Analysis
- The Immersed Smoothed Particle Galerkin Method for Modeling and Failure Analysis of Fiber-Reinforced Solid Structures
- The Role of LS-DYNA in the Design of the new London Electric Taxi
- Topology optimization of Stamping Die Structure using LS-TaSC
- Tube adaptivity for mesh fission/fusion in LS-DYNA
- Update on Resistive Spot Welding (RSW) capabilities in LS-DYNA
- Zero thickness cohesive element approach for dynamic crack propagation

If you would like an exhibitor booth contact dilip@lstc.com

Announcement and Call for Papers

15th German LS-DYNA Forum 2018

October 15 - 17 2018, Bamberg, Germany

www.dynamore.de/forum2018-e