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FEA Information Inc.

A publishing company founded April 2000 – published monthly since October 2000.

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

FEA Information Inc. publishes:

FEA Information Engineering Solutions

FEA Information Engineering Journal

FEA Information China Engineering Solutions

Livermore Software Technology, Corp. (LSTC) Developer of LS-DYNA One Code Methodology.

LS-DYNA provides fully integrated, strongly coupled, solvers for extensive multiphysics capabilities.   Integrated, at no additional cost. Optimized for shared and distributed memory for Unix, Linux, & Windows Based platforms.

DYNAmore GmbH – LSTC's Master Distributor in the EU

DYNAmore is dedicated to sales, support, training engineers with LS-DYNA to solve non-linear mechanical   problems numerically. Employs 85 engineers in Europe. Co-develops the LSTC software and provide engineering services.

FEA Information Engineering Solutions – Dedicated To:

Finite Element Analysis * Hardware * Software * Cloud * Consulting * CAD * CAE Distribution* * Implicit * Explicit *Applications * Press Releases * Events * Training

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Models - THUMS - ADT - Barrier

Social Media

Oasys LS-DYNA UK Users' Meeting 2016 - Thursday 28th January 2016

14th International LS-DYNA Conference

Abstracts have been accepted and notices are being sent out – send in your abstracts to papers@lstc.com for presenting at the 14th International LS-DYNA Conference.

Visit by Hongsheng Lu

FEA Information Engineering Solutions US was recently visited by Hongsheng Lu of Shanghai Hengstar Technology Co., Ltd. - Tel. +86 21-61630122 ext. 222 http://www.hengstar.com/   -   Email: hongsheng@hengstar.com

We will soon be announcing Hengstar's 2016 training courses in China, and welcome his articles for consulting, technical support and introducing new features of LS-DYNA to our readers in the China FEA edition.

FEA Information had a successful exhibitor booth at the LS-DYNA Conference in China.

November in China FEA Information was represented by Yanhua Zhao and Grace Su. Additionally, they will be at the US 14th International LS-DYNA Conference in the US.

· **Yanhua Zhao - LSTC and Editor in Chief of FEA Information Engineering Solutions China edition.**
· **Grace Su of ETA China, and FEA Information Engineering Solutions China edition**

Sincerely,
Marsha Victory   Trent Eggleston   Marnie Azadian
Suri Bala   Dilip Bhalsod   Yanhua Zhao

FEA Information Engineering Solutions US Edition

Website: http://www.oasys-software.com/dyna/en/events/users_jan-16/users_jan-16.shtml

13th Annual UK Oasys LS-DYNA Users' Meeting
Location: Arup Campus, Solihull, UK

The thirteenth in a series of update meetings for Oasys LS-DYNA Users will be held at the Arup office in Solihull, UK, on Thursday 28th January 2016.

As in previous years this event will bring together around 100 UK users of the Oasys and LS-DYNA software to provide information on upcoming features of Oasys and LS-DYNA, and to learn more about current and new applications, as well as other related software products.

We are looking forward to talks from the Oasys team at Arup as well as special guest speakers, Brian Wainscott and Paul Du Bois

The event will be followed by a complimentary meal at The Boot Inn in Lapworth. Please note that The Boot Inn has a limited capacity so please ensure you register in advance to ensure your place at the evening meal.

Registration This event is free of charge. To register for the event and the evening meal simply send an email with your company/affiliation and contact details to **Alison Harper.** Please also let us know if you have any particular dietary requirements when you register.

Please note: in line with our company sustainability policy we do not plan to provide printed copies of the presentations for each attendee at the event; the presentations will be made available to download after the event. If you particularly require a printed copy on the day please let us know when you register.

BETA CAE Systems Announces The Release of the v16.1.0 of its software suite

Announcing new solver Eπilysys, as well as by providing new tools and functions per domain and per discipline.

BETA CAE Systems announces the release of the v16.1.0 of its software suite

About this release: BETA CAE Systems S.A. announces the release of the version 16.1.0 of the ANSA / Eπilysis / μETA suite with new tools and capabilities to further augment functionality and facilitate CAE processes.

The ANSA / Eπilysis / μETA v16x suite, brings BETA CAE Systems software suite to a new dimension, by providing complete solutions in the CAE field. Loyal to our commitment to deliver best-in-class software, we achieve our goal by introducing the new solver Eπilysys, as well as by providing new tools and functions per domain and per discipline.

The 16x version of the ANSA pre- processor provides full compatibility with previous major versions. As with every major release, a broad range of new features and enhancements to existing ones add value to our solutions, reinforce overall process consistency,

accelerate user performance, and provide a considerable boost on productivity.

The Eπilysis solver is the new addition to the BETA CAE Systems analysis tools family and is available with the ANSA / Eπilysis / μETA suite. Named after the Greek word for solution, it operates as a solution in the field of Finite Element Analysis embodying the accumulated knowledge from 25 years of collaboration with the CAE community. Eπilysis covers numerous solution types and intends to bridge the gap between pre- and post- processing for disciplines such as Structural, NVH, Optimization, and more.

The v16x version of the μETA post-processor builds upon the tools available in previous releases, now supporting an increased array of new interfaces including Eπilysis, the in-house solver of BETA CAE Systems, as well as enhancing the multi-disciplinary tools.

The most important additions and fixes implemented in v16.1.0 are listed below.

Understanding the Software Release Schedule

The plan: We are committed in delivering improved and enhanced software releases, the soonest possible, in order to meet the requirement of our customers for the continuous improvement of their experience and work. Therefore, we are working in releasing new software versions with code corrections, new software features and enhancements, in regular, frequent intervals.

- A major software version is released every year.
- First point releases, such as v16.1.0, v16.2.0, v16.3.0 and so on, with code corrections but also with additional software features and enhancements are released every three months.
- Second point releases, such as v16.0.1, v16.0.2 etc. mainly with code corrections only upon their parent first point release, are scheduled on a monthly basis.

Each software release is accompanied by a detailed description of the introduced corrections and/or additions so that our customers can decide whether it is critical to implement this release in their environment.

This release: This release of v16.1.0 brings additional features and code corrections on v16.0.x.

New features in ANSA: PDM to ANSA

CATProduct model definition can now be imported in the in the Product Tree Editor offering better control and facilitating the translation process.

New improvements in the Stand-alone Translator offer a more intuitive interface, and increased capabilities in settings handling.

NX UGOpen: Weld spots properly defined in NX, are now automatically recognized by the translator and converted to spotwelds. The connectivity is also filled-in automatically for each spotweld on parts' Module Ids.

Geometric entities handling: Handling Geometric entities, such as, Faces, CONs and Hot Points can now be automated through scripting.

Meshing

Shell mesh: A new Wrap [Constant Length] function offers now enhanced capabilities and the advantage of making modifications throughout the entire process.

Volume Mesh: Layers generation at concave areas is now improved to minimize squeezing.

Hexa Block: The steps to create both the box structure and the mesh, can now be stored for later reproduction reducing significantly preparation time.

New and enhanced functionality that significantly improves and facilitates complicated and high demanding meshing requirements for biomechanics applications.

The Jacobian quality criterion can now be effectively handled through the ability to set the desired calculation options.

Connections / Assembly: The capabilities of ANSA connection handling has been expanded in Bolt and Adhesive representations (FE elements) which can now be automatically converted to connection entities.

Solver Interfaces: The visualization of Material Orientation is now improved by continuous lines that define the orientation. This applies also on the Layers of composites.

The Mass Balanced tool has been improved to offer new features and a more user-friendly interface. The new features include an alternative calculation method that takes into account the Inertia values and, the ability to add masses on only the necessary regions.

Matereality: A new tool has been developed, in cooperation with Matereality LLC, that integrates material model data feeds into ANSA.

Safety: The coupling of the dummy to the seat has been facilitated through a stepwise assistant enabling quick coupling of their Kinematic Configurations.

NASTRAN: New Thermal Analysis solution keywords have been introduced for NASTRAN.
RADIOSS: Support of the version 13.0.

Information of Encrypted properties can now be read.

TAU: A new special interface for setting-up models for the TAU solver has been introduced.

Kinetics

Bodies: The option to merge two or more bodies into a single one is now provided.

Design Analysis>D.Simulator: More than one Objective can now be selected to issue results for either Design Studies or Design of Experiments.

New features in Eπilysis

Interface: It is now possible to define the number of arguments for the post processing in μETA.

Output: Output of stress results per layer on composite models is now supported.

Elements: Support of the PROJTOL option for CWELD elements in NASTRAN>Auxiliaries>Header

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

New features in μETA

Mechanical & Sound Intensity Flow Paths

A new tool has been introduced to visualize mechanical and sound intensity results as flow paths.

Supported Interfaces

- μETA further augments the support of solvers through:
- ANSYS material properties.
- Abaqus connector orientation.
- Abaqus TRUSS and PC3D elements.
- EnSight adaptive mesh and meshless results.
- Fluent wall shear stress results.
- H3D files for VDI2014 results' calculation.
- LS-DYNA Results from d3eigv files in the NVH Tools.
- Nastran temperature, enthalpy and flux results and keywords.
- OpenFOAM FEMZIP NodeIdMap.
- TechPlot polyhedral and polygon elements.
- TechPlot models automatically created skin display for volume properties.
- Solid elements from universal files of dataset 780.

Fringebar

- The transparency of colors can now be adjusted from a slider in the context menu.
- Selected color palettes can now be saved as session files.
- Vector drawing on free nodes is now supported.

NVH Calculators

- Improved performance of the Modal Response tool by utilizing CPU multi-threading.
- The FRF Assembly tool now takes into account non-symmetric transfer functions of universal files.
- The FRF Assembly tool now considers local coordinate systems per DoF for MPC connectors.
- In the FRF Assembly tool a new option is available for TPA Fractions calculations to plot transfer functions, connection forces and point mobility results as complex curves over the frequency range.
- The Modal Response tool can now calculate nodal stress responses and their participations.

Section Forces

- Section force calculations of SC/Tetra results are now supported.
- It is now possible to plot the variation of section forces across the path of an animating plane.

2D Plots

- LS DYNA version 7.1.1 elout is now supported as ASCII and binout entity type.
- Template complex curves for Pamcrash ERF files are now supported.
- HIC results can now be calculated for accelerometer entities of Radioss T01 files automatically.

Editor

- Support of images and hyperlinks inserted in cells.
- User-created spreadsheets can now be saved in μETA Project files.

User Toolbars

- The Pedestrian toolbar supports comparing results from multiple target points' files and separate folders with results.
- The IIHS toolbar now supports the processing of small overlap analysis results.

BETA CAE Systems Announces The Release of the v16.1.0 of its software suite

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.

The .metadb Project files saved with μETA version 16.1.0 are compatible and can be opened by μETA version 16.0.0 or later. To open 16.1.0 files with versions earlier than 16.0.0, the corresponding saving option must be activated.

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

For Download Instructions please visit the article located at
Under DOWNLOAD
   www.beta-cae.com/news/20151118_announcement_ansa_meta_v16.1.0.htm

CRAY - University of Warsaw Selects Cray XC40 Supercomputer

University of Warsaw Selects Cray XC40 Supercomputer for Mathematical and Computational Modelling

SEATTLE, WA -- (Marketwired) -- 11/16/15 -- Global supercomputer leader Cray Inc. (NASDAQ: CRAY) today announced the Company has been awarded a contract to provide a Cray® XC40™ supercomputer to the Interdisciplinary Centre for Mathematical and Computational Modelling (ICM) at the University of Warsaw in Poland.

The six-cabinet Cray XC40 system will be located in ICM's OCEAN research data center, and will enable interdisciplinary teams of scientists to address the most computationally complex challenges in areas such as life sciences, physics, cosmology, chemistry, environmental science, engineering, and the humanities. ICM is Poland's leading research center for computational and data driven sciences, and is one of the premier centers for large-scale high performance computing (HPC) simulations and big data analytics in Central and Eastern Europe.

"The new Cray XC40 substantially increases our HPC capabilities," said Professor Marek Niezgódka, managing director of ICM. "Contemporary science is undergoing a paradigm shift towards data-intensive scientific discovery. The unprecedented availability of large quantities of data, new algorithms and methods of analysis has created new opportunities for us, as well as new challenges. By selecting the Cray XC40 as our next generation compute platform, we're investing in our ability to conduct cutting edge research for years to come."

"Cray and ICM are both actively working toward the convergence of supercomputing and big data and we are excited to partner in this pursuit," said Peter Ungaro, president and CEO of Cray. "Cray supercomputers are uniquely designed to allow customers to take advantage of increasingly complex, data-intensive problems. We're thrilled ICM selected the XC40 supercomputer as their platform-of-choice for conducting their important research."

This contract marks Cray's second Cray XC™ supercomputer delivery in Poland this year. In the first quarter of 2015, a Cray XC30™ supercomputer was installed at Stalprodukt S.A., a leading global steel processor, for structural analysis modeling used in the testing of steel designs. The Cray XC40 system at the University of Warsaw will be the largest Cray system in Central and Eastern Europe, and is expected to be delivered in 2015.

Cray XC40 supercomputers are engineered to meet the performance challenges of today's most demanding HPC users. Special features of the Cray XC40 supercomputer include: the industry-leading Aries system interconnect; a Dragonfly network topology that frees applications from locality constraints; optional DataWarp applications I/O flash SSD accelerator technology; innovative cooling systems to lower customers' total cost of ownership; the next-generation of the scalable, high performance and tightly integrated Cray Linux Environment that supports a wide range of applications; Cray's HPC optimized programming environment for improved performance and programmability, and the ability to handle a wide variety of processor types, including Intel® Xeon® processors, Intel® Xeon Phi™ coprocessors, and NVIDIA® Tesla® GPU accelerators.

About Cray Inc. - Global supercomputing leader Cray Inc. (NASDAQ: CRAY) provides innovative systems and solutions enabling scientists and engineers in industry, academia and government to meet existing and future simulation and analytics challenges. Leveraging more than 40 years of experience in developing and servicing the world's most advanced supercomputers, Cray offers a comprehensive portfolio of supercomputers and big data storage and analytics solutions delivering unrivaled performance, efficiency and scalability. Cray's Adaptive Supercomputing vision is focused on delivering innovative next-generation products that integrate diverse processing technologies into a unified architecture, allowing customers to meet the market's continued demand for realized performance. Go to www.cray.com for more information

For Complete Safe Harbor Statement please read
http://investors.cray.com/phoenix.zhtml?c=98390&p=irol-newsArticle&ID=2112741
Safe Harbor Statement - This press release contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934 and Section 27A of the Securities Act of 1933, including, but not limited to, statements related to the timing and delivery of the system purchased by ICM and Cray's ability to deliver a system that meets ICM's requirements. These statements involve current expectations, forecasts of future events and other statements that are not historical facts. Inaccurate assumptions and known and unknown risks and uncertainties can affect the accuracy of forward-looking statements and cause actual results to differ materially from those anticipated by these forward-looking statements. Factors that could affect actual future events or results include, but are not limited to, the risk that the system required by ICM is not delivered in a timely fashion or does not perform as expected and such other risks as identified in the Company's quarterly report on Form 10-Q for the quarter ended September 30, 2015, and from time to time in other reports filed by Cray with the U.S. Securities and Exchange Commission. You should not rely unduly on these forward-looking statements, …..Cray is a registered trademark of Cray Inc. in the United States and other countries, and XC40, XC and XC30 are trademarks of Cray Inc. Other product and service names mentioned herein are the trademarks of their respective owners.

Cray Media: N. Davis   206/701-2123 pr@cray.com
Cray Investors: P. Hiemstra 206/701-2044 ir@cray.com
Source: Cray Inc.

Christina Capasso Jamerson, Marketing Coordinator

Training:
- Dec 03 - ANSYS DesignModeler for FEA
- Dec 07 - Introduction to ANSYS Mechanical (Workbench)
- Dec 10 - ANSYS Mechanical (Workbench) - Structural Nonlinearities
- Feb 11 - Finite Element Analysis Fundamentals

Reconstruction of Tullio's Adam

The conservators turned to CAE Associates for the strength analysis of the critical joins of the statue.

https://caeai.com/resources/reconstruction-tullios-adam
Complete article at above link CAEAI

On November 10, 2014, The Metropolitan Museum of Art unveiled a reconstructed statue of Adam, created by 15th-century Renaissance sculptor Tullio Lombardo. In 2002, the pedestal on which the statue was displayed collapsed and Adam fell to the floor, breaking into 28 large pieces and hundreds of small fragments. What followed was a twelve-year effort that has in many ways changed the world of monumental stone sculpture conservation......

.......The conservators turned to CAE Associates for the strength analysis of the

critical joins of the statue. Using the digital model of the assembled pieces, CAEA's Pat Cunningham and Mike Bak created structural finite element models of the entire statue, with particular focus on the left ankle and left knee. By parametrically defining the pin size and location in the joins, CAE Associates provided the Met's conservators with a tool that could evaluate the need the for pins as well as determine the optimum numbers of pins, their size and location.

Among Our BLOGS for November - https://caeai.com/blog

Patrick Cunningham,
M.S.M.E., Senior Engineering Manager
Is My Coupled Field Model Truly Coupled, or is it a One-Sided Relationship?

By Peter Barrett, M.S.C.E., P.E. - VP
Using FEA to Model Shape Memory Alloys

Jonathan Dudley, Ph.D., Project Engineer
Random Data Analysis Part 6: The Short-Time Fourier Transform

A series of informal articles about one engineer's usage of LS-DYNA to solve a variety of non-crash simulation problems.

By: George Laird, PhD, PE
Principal Mechanical Engineer, Predictive Engineering

I come from a background in implicit analysis where element quality can often be swept under the rug by the use of dense meshes and since models run quickly no one really cares about model size, i.e., ten million DOF. Whereas, what I enjoy about explicit is that it demands the upmost model preparation from the choice of element types to the creation of perfect quad and hex dominant meshes having the absolute minimum number of DOF.

What I have been noticing over the last couple of years in the explicit world is the creation of gigantic meshes that are justified by saying "It runs just fine in four hours using 32 CPU-cores." Although it runs, I wonder how much time was spent in debugging this beast and also whether the mesh density was justified by experience or by the economy of using an off-shore meshing service.

What's the Point?

I remember this saying by a famous mechanician that no model should run more than 20 minutes. In my practice, it seems that I have to make dozens of runs before I feel comfortable with the results. This 20 minute rule resonates with me and we strive to build economical models to expedite the debugging, verification and if we are lucky the validation process. Since we are all explicit experts (viz. we are using LS-DYNA), the goal of this little article is just to share some of my observations on building numerically efficient and accurate explicit models and in no way to say that we are special or have some inside lock on building the perfect explicit model. What I have learned over the years is that it is tricky building good models and if you think you have no sins, you'll get your ass handed to you rather quickly with LS-DYNA.
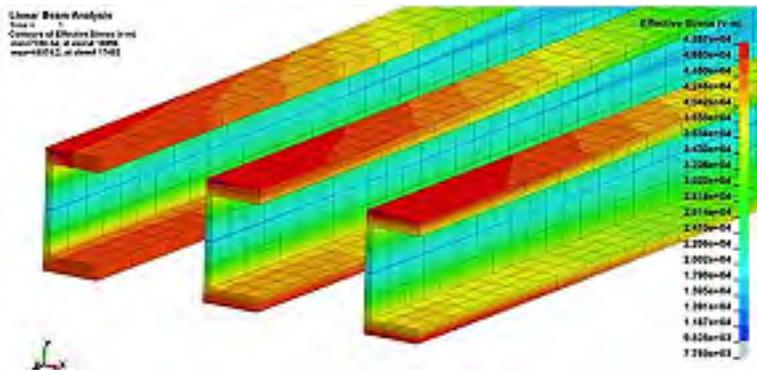
Solid Element Meshing: Let's Talk About Mesh Density and Let's Get Over It

Whenever someone tells me that one needs to have at least two or four hex elements through thickness to capture bending stress – I flinch. As a generality this approach is lacking and misleading. Take a look at Figure 1. We have a stress results for a symmetric I-Beam meshed with solid elements under simple-supported bending. The flange of the I-Beam is meshed through thickness with 1, 2 and 4 hex elements. The top row of results show a linear analysis while the bottom row was run using MAT_24 with material plasticity. The figure shows that the linear and nonlinear results vary by a couple of percent. The beam's mechanical behaviors don't quite match one-to-one but one might say they match good enough.

Linear Analysis: Maximum von Mises stress: 47.7, 48.4 and 48.5 ksi

Non-Linear Analysis: Maximum Plastic Strain: 61.8, 63.0 and 59.7%

Figure 1: Effects of mesh density on a deep-section I-Beam

Of course, if the load was tensile, than one element through thickness would be perfect and likewise, if it was a solid bar, then one would need two fully-integrated or four under-integrated elements to capture the mechanical response.

Before one tosses this example under the bus as unique and not applicable to your model, let's just say that it is all an idealization and that all models are lacking in one manner or another. I strive for mesh economy and only after the model is running and all the other problems have been debugged, only then will I go back and play with mesh density. My perception is that many people over mesh since it is the low hanging fruit of model building or at times, it is out of their control.

Plate Meshing: A World of Recommendations

A good reference on how to estimate your meshing error is that provided by Schwer in his paper: "Is Your Mesh Refined Enough?" As one might suspect, the technique referenced in this paper requires the analyst to refine their meshes to assess the discretization error. This is often the rub since by the time one has the model up and running, you are loath to touch it and also, perhaps you have run out of time and budget to do any more work. Please don't get me wrong, but I'm all on-board with doing a mesh convergence assessment and Schwer hits it dead-on in the conclusion section of his paper

about the importance of engineering judgement.

For plate meshes, I'm keen on high quality and regularity. I try to shape the elements toward known high-stress locations and always try to remember what a seasoned engineer from Boeing taught me about load line mechanics: "always draw a straight line between the applied load and its constraint, whenever the structure deviates from this straight line, you'll find a hot spot." So I try to grade the mesh where it is going to do the most good. And what discussion of mesh quality would be complete without saying that one quality quad plate element is better than four bad ones.

I don't want to harp on it, since we have all heard the horror stories about poor quality meshes, but Figure 2 provides a nice illustration about the saying "if it looks good, it is good". On the left-hand side the mesh is distorted (i.e., warped) while on the right-hand side, the mesh is regular. Since it is an example to scare newbies, the skewed mesh gives stress values that are -20 to +40% over the clean mesh where the stress value is 100. The whole point is that a trained simulation engineer understands element formulations and the underlying mechanics, they just know that one should always aim for a clean pattern (if it looks good….) and that stress results are never accepted blindly. Or as my friend Mark Sherman says, "Whenever you see a stress contour plot, just assume it is wrong."
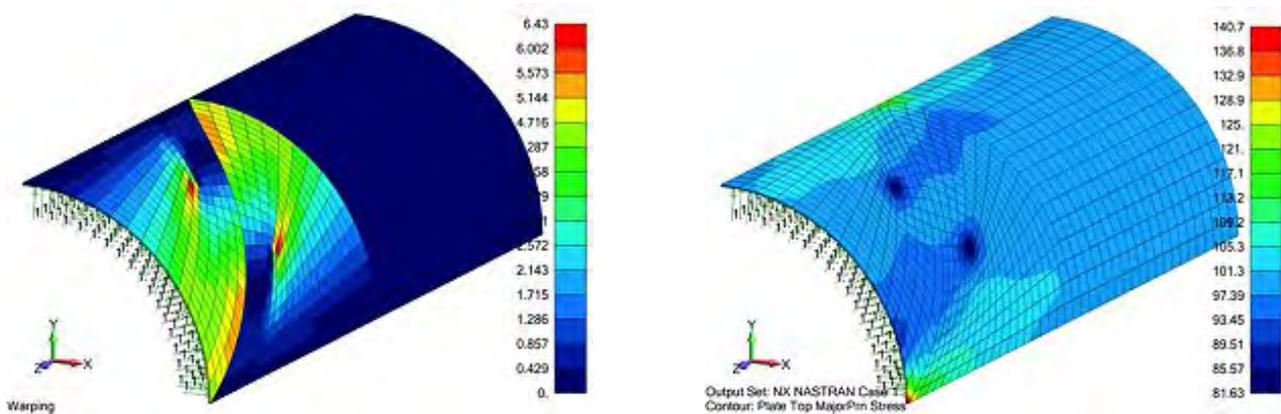
Figure 2: The specter of high skewed results due to poor element quality (i.e., warping) is often used to scare newbies to FEA

Then What Is The Secret To Meshing for Explicit Success?

There's this saying that is attributed to Sir William Bragg (Nobel Prize in Physics 1915) "Never confuse hard work with hard thinking." It has been my observation that many analysts obsess on the mesh since it provides many hours of hard work while ignoring the many other elephants in the room (hard thinking) that contribute to far more inaccuracies to the model. In a lot of cases, we have a poor understanding of the loads and even worse understanding of the material behavior that goes into our models. It is a balancing act to say the least. At the end of the day, there are no short cuts or easy one-stop-shopping metrics to create an accurate explicit mesh. What I can advocate is to focus on clean mesh patterns using high-quality elements and most likely you'll be within 10% of reality.

Last Blurb: During dinner at a LS-DYNA conference, I was talking about the complexities of building a good mesh and this person sitting at our table remarked "you build your own meshes – what a waste of time!" It did make me feel rather out-of-date but so it goes. As the preface of this article says – we don't do crash and hence we don't have to build endless "bodies in white" and I understood where this person was coming from, i.e., doing repetitive meshing work. However, we are generalists and see different types of structures every month. From my experience, there is just no better way to get familiar with a structure than having to mesh it. And since explicit analysis extracts such a high-penalty for sloppy meshing, whether of poor quality or having too much of a good thing, I think we'll stay old-fashioned for now.

Some Reference Materials: Leonard E. Schwer, Is Your Mesh Refined Enough? Estimating Discretization Error using GCI, LS-DYNA Anwenderforum, Bamberg 2008.

Laird and Waterman, See Analysis Data's True Colors, Desktop Engineering, March 2011.

Kaizenat Concludes Successful LS-DYNA Conference in India

Conference Highlights

Kaizenat Technologies Pvt. Ltd. is pleased to announce the successful conclusion of its LS-DYNA Conference & Training. It attracted close to 250 engineers, managers and simulation experts to Bangalore on 2nd & 3rd November and Pune on 5th & 6th November.

The proceedings and training were conducted by Mr. Suri Bala and Dr. Anirban Basudhar, of Livermore Software Technology Corporation. Attendees had the opportunity to speak directly with them about their applications and publications.

Conference Highlights:
- Kaizen-Dyna – a LS-DYNA android app launched (IOS App & windows versions are about to be launched)

- Two experts from LSTC shared their expertise on different applications
- Dedicated sessions on LS-OPT and material modeling
- Close to 250 participants attended
- Close to 50 companies were represented
- Participants from highly reputed Universities also attended
- Customer presentations on new technologies like DES Solver, Frequency Domain - SSD, ICFD solver, LS-Opt etc.
- The only LS-DYNA conference in India where most diverse applications were presented utilizing the full strength of LSTC tools.

Lenovo Announces Enterprise Innovation Center Collaborations

http://news.lenovo.com/article_display.cfm?article_id=2092

New state-of-the-art Enterprise Innovation Center (EIC) in Beijing will open in early 2016.

- New Innovation Center Opening January in Beijing
- Expanded relationship with Barcelona Supercomputing Center and new partner, the University of Oxford
- Lenovo and Intel® Collaborating on Intel® Scalable System Framework and OpenHPC Initiative

Lenovo Announces Enterprise Innovation Center Collaborations

AUSTIN, TX- November 17, 2015: Lenovo (HKSE:992) (ADR: LNVGY) today announced at the Supercomputing 2015 Conference (SC15) a brand new state-of-the-art Enterprise Innovation Center (EIC) in Beijing will open in early 2016. Lenovo also announced an expanded relationship with Barcelona Supercomputing Centre and a new partner in EIC projects, the University of Oxford. Additionally, Lenovo is unveiling multiple new initiatives with Intel® under the Intel® Scalable System Framework, focused on future high-performance computing (HPC) system design and optimization. Lenovo will be a founding member of OpenHPC which aims to bring open-source economics to HPC users.

Lenovo Enterprise Innovation Centers
Equipped with nearly one thousand servers, the Beijing EIC joins Lenovo's Stuttgart, Germany EIC that opened earlier this year, offering a combined global reach for innovative collaboration. Research in areas such as HPC,

big data analytics, cloud and the hyperscale data center will focus on industries such as life sciences, manufacturing, energy and engineering.

Lenovo has teamed with industry leaders such as Intel®, NVIDIA and Red Hat to establish a collective environment where partners, providers and customers can work together within the EIC to be the incubators of tomorrow's technology in areas such as: •Intel® Xeon® processors, Intel® Xeon Phi™ coprocessors, Intel® Omni-Path Architecture, and Intel® Solutions for Lustre*

- High Performance GPGPU's for machine learning and HPC applications
- Enhanced connectivity – up to 100G for clusters
- Cloud application optimization
- Energy efficient systems for hyperscale IP data centers
- Trusted Security platforms

Lenovo Announces Enterprise Innovation Center Collaborations

New Collaborations with the University of Oxford and Barcelona Supercomputing Center(BSC)

The University of Oxford becomes Lenovo's latest Innovation Center collaboration partner. Working together on improving HPC energy efficiency within large data volume environments, we are also embarking on a joint evaluation project developing a stack of open-source software designed to reduce HPC deployment costs and help smaller organizations realize the potential of the technology. In addition, Lenovo and Barcelona Supercomputing Centre (BSC) have extended our ongoing collaboration to include working on scheduling, performance tools, energy efficiency and big data. Both of these engagements support our commitment to OpenHPC and our open source initiatives.

Partnering for Future HPC Capabilities

In an effort to increase value across the entire stack and address a wide range of data analysis, machine learning and visualization workloads customers are needing, Lenovo is announcing products based on the Intel® Scalable System Framework. Early next year, we will introduce systems using next-generation Intel® Xeon® and Intel® Xeon Phi™ processors, Intel® OmniPath Architecture and the Intel® Enterprise Edition of Lustre software to serve these needs. Customers can already test drive Intel® OmniPath Architecture and Intel® solutions for Lustre in the Stuttgart EIC and we plan to upgrade the cluster to next-generation Intel® Xeon® processors as soon as they become available.

Quotes

"Lenovo's enterprise strategy is built on the delivery of open, flexible and innovative value and we will continue to challenge the envelopes of high performance computing. Enhancing our Innovation Center capacity and forging close partnerships with industry leaders will help us deliver ever better high performance computing to customers around the world." Said Brian Connors, general manager HPC and vice president, Strategic Alliances and Business Development, Enterprise Business Group, Lenovo.

"We're excited to collaborate with Lenovo in their new Beijing Center for HPC, cloud and data analytics," said Charles Wuischpard, vice president and general manager of HPC Platform Group at Intel. "As with the current Innovation Center in Germany, the new center in Beijing gives clients early access to a broad range of ever-advancing technology and scale, including full support of the Intel® Scalable System Framework — allowing users of all sizes to experience its benefit."

"Oxford University Advanced Research Computing Centre (ARC) has agreed to become a Lenovo HPC Stuttgart Innovation Center partner working with Lenovo on future and emerging technologies," said Andrew Richards, Head of Advanced Research Computing and Associate Director - Oxford e-Research Centre, University of Oxford.

Lenovo Announces Enterprise Innovation Center Collaborations

"The research projects, focused on energy efficiency and open-source software eco-systems, are aimed at developing more cost effective HPC solutions helping smaller commercial clients realize the benefit of high performance computing."

"We are convinced that Lenovo will be one of the leaders in the HPC market very soon, and we are delighted to collaborate with them in achieving this objective." Said Mateo Valero, professor at Universitat Politècnica Catalunya and director of Barcelona Supercomputing Centre.

For the latest Lenovo server news:

www.lenovo.com/systems

About Lenovo
 Lenovo (HKSE: 992) (ADR: LNVGY) is a $46 billion global Fortune 500 company and a leader in providing innovative consumer, commercial, and enterprise technology. Our portfolio of high-quality, secure products and services covers PCs (including the legendary Think and multimode YOGA brands), workstations, servers, storage, smart TVs and a family of mobile products like smartphones (including the Moto brand), tablets and apps. Join us on LinkedIn, follow us on Facebook or Twitter (@Lenovo) or visit us at www.lenovo.com.

http://jweld.jsol.co.jp/en/index.html
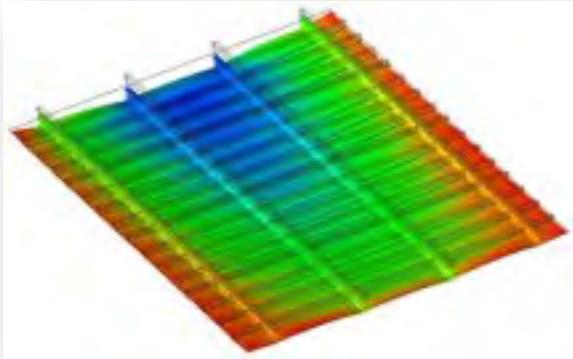
JWELD

**Software For Structure Welding
and Assembly**

Deformations and stresses by welding and assembly can be evaluated for increasing product quality and reducing manufacturing cost.

High Speed Solution
 Structure welding and assembly process having numbers of welding lines can be simulated within a few minutes.

Evaluation of Process Parameters
 Various process parameters including welding & assembly process, JIG constraints, and welding conditions can be evaluated.

Process Optimization
 Optimized welding & assembly processes can be designed through understanding of residual deformation, residual stress, and plastic strain of structure.

Introduction:
· Calculation time is within a few minutes using Local Deformation DB and fast FEM solver.
· Welding & assembly processes can be simulated considering various process parameters including welding process and conditions, JIG constraints, assembly order, etc.
· Seamless operation of pre-processing, solving, and post-processing can be done through Create Geometry / Set Conditions / Execute Solver / Post-processing windows specialized Jvision for JWELD.
· JWELD is consisted of Jvision for JWELD, Local Welding Deformation DB, and JWELD Solver.

Copyright ESI-Group Website – Complete Pictures/article at ESI Group

ESI's Immersive Virtual Prototyping solution allows Daher's engineers to immerse themselves inside their factory to set-up and fine-tune their aircraft final assembly lines.

Image©: ESI Group website copyright to Daher

ESI and DAHER showcase Immersive Virtual Prototyping at the French-German Digital Conference in Paris

Paris, France – November 20, 2015 – ESI Group, pioneer and world-leading solution provider in Virtual Prototyping for manufacturing industries, was invited to participate in the French-German Digital Conference, held on October 27 at the Elysée Palace in Paris. During the conference, French Minister Emmanuel Macron and German Minister Sigmar Gabriel presented their "Action Plan" for an ambitious digital strategy in Europe, and related societal challenges. They were then joined by French President François Hollande, German Chancellor Angela Merkel, and President of the European Commission Jean-Claude Junker to witness demonstrations of selected innovative technologies, including ESI's Immersive Virtual Prototyping solution as used by aircraft manufacturer Daher.

French company Daher uses ESI's Virtual Reality solution ESI IC.IDO to optimize their assembly lines and increase productivity. Thanks to Virtual Reality, Daher's engineers can assess assembly processes very early in the product development phase, before they commit to major investments and before any real prototype is built. The demonstration at the Elysée showed officials how Daher uses ESI's solution to fine-tune the final assembly lines (FAL) of the TBM 900, the latest addition to the Daher's very fast turboprop aircraft family.

Nicolas Orance, Chief Innovation Officer of Daher comments: *"One of the current challenges of industrial companies is the digital transformation, and Daher has been implementing a number of solutions for the Aerospace and Nuclear sectors. Virtual Reality helps us bridge the gap between design solutions and ideas, and the shop floor implementation, by gaining time and efficiency."*

During the demonstration, an ESI engineer connected from the Elysée Palace in Paris to a colleague based at ESI's subsidiary in Stuttgart, Germany. Remotely, both engineers were immersed in the same 3D scene. They demonstrated a typical collaborative project review, working on the same virtual prototype — a best practice to enable reliable decision making, upfront in the product development process.

Vincent Chaillou, COO, ESI Group comments: *"With its unique Virtual Prototyping offering addressing various industrial sectors, ESI is well equipped to support European initiatives for developing digital technologies, such as Industries du Futur and Industry 4.0."*

Fouad El-Khaldi, General Manager of Strategy and Innovation, ESI Group, puts it in the context of the local economic development: *"This event illustrates the great potential of European companies, and especially Mid-Cap companies, to drive industrial growth in Europe with the help of digital technologies. Such collaborations with industrial players, as well as governmental bodies act as an efficient catalyst to increase*

Europe's innovation ecosystem and industrial competitiveness. To this aim, ESI takes part in many research projects financed by the European Union through Private-Public Partnership, including EFFRA and EGVI."

For videos of ESI's Immersive Virtual Prototyping solutions, please visit ESI's dedicated YouTube playlist.

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For company information about ESI Group and about Dahler, visit
– Complete Pictures/article at ESI Group

The 2nd China LS-DYNA Users Conference was successfully held in Shanghai on Nov. 9-11, 2015, organized by Livermore Software Technology Corporation of United States and Dalian FuKun Technology Corporation of China.

2015 2nd China LS-DYNA Users' Conference main venue

The conference was associated with the LS-DYNA distributors in China: ETA China; ARUP China, Shanghai Hengstar. It was sponsored by the FEA Information.inc of United States; D3Vies, USA; JSOL Corporation, Japan; Shanghai Mass Computing Co.Ltd; EaseGroup Shanghai. The conference received 80 technical papers and presentations. There were 287 participants from seven countries and regions. On behalf of the organizers, Heartfelt thanks to all the sponsors and participants

Dr. John O. Hallquist, who is a member of American Academy of Engineering, and founder and president of Livermore Software Technology Corporation, gave the opening remarks, and expressed his thanks and appreciation to the LS-DYNA China users. He introduced the LSTC software products: LS-DYNA, LS-PrePost, LS-OPT, LS-TASC. And the Finite Element Dummies and Barrier models, He also addressed the overall LSTC's software development strategy and recent developments projects and features.

The organizer of the conference invited Professor Zhong-Qin Lin, who is the member

of China Academy of Engineering, Shanghai Jiaotong University vice president; Professor Zhou Qing from Tsinghua University; Dr. James C. Cheng, Senior manager, Passive Safety Research and Innovation Center, Ford Motor Company; Mr. Uli Franz, co-founder and managing director of DYNAmore Germany. Respectively, they presented Simulation on Advanced Forming and Joining Technology in LS-DYNA; Challenges of Crash Safety in Future Urban Commute; Safety CAE Technology Advancement and Emerging Challenges; Current topics in crash and safety analysis from a European view point.

There were 20 LSTC developers from USA attended the conference, they have introduced a full range of LS-DYNA latest research, applications and development progress and trends. Besides that, there were 70 technical presentations divided into 8 parallel sessions.

After the conference, the organizer arranged four technical training classes. A total of 105 people participated in the technical training class and has been issued technical training certificate by the respective instructors

14TH International LS-DYNA Users Conference - Welcome Reception Sunday, June 12, 2016

FEA Information Inc., D3View and the following FEA Information Participating LS-DYNA distributors will be hosting the Welcome Reception at the 14th International LS-DYNA Conference .

During the reception each participant will be announced giving you the opportunity to meet and know the FEA Information LS-DYNA's global representatives.   We will be adding additional co-sponsors to our list each month. **Please join us in 2016**

From China:
· Shanghai Hengstar Technology Co., Ltd.
· Dalian Fukun
· ARUP China

From Korea:
· THEME
· KOrea Simulation TECHnology Co.,Ltd

From Sweden:

· DYNAmore Nordic AB

From Germany:
· DynaMORE GmbH
· CADFEM GmbH

From India:
· Kaizenat Technologies Pvt. Ltd.
· Arup India Pvt Ltd

From the US
· Dynamax
· LSTC

From the UK
· ARUP UK

From France
· DynaS+

FEA Information Editors – Marsha Victory & Marnie Azadian

Keynote speaker Paul DuBois who will be presenting a joint presentation at the conference:

> **A new versatile tool for simulation of failure in LS-DYNA**
> **and the application to aluminum extrusions**
>
> - **Paul Du Bois, Consulting engineer**
> - **Dr. Tobias Erhart, Dr. Filipe Andrade, Dr. Andre Haufe, Dynamore GmbH**
> - **Drs. Frieder Neukamm, Dr.Markus Feucht, Daimler AG**
>
>
> **Presentation Contents**
>
> - **Aluminium extrusions**
> - **Material modeling of Aluminium extrusions**
> - **Concept of a generalized failure model**
> - **Example of anisotropic damage**
> - **Example of volumetric/deviatoric damage**
> - **Plane stress anisotropic failure : directional dependency upon the state of stress**
> - **Failure model for aluminum extrusion**
> - **Example of a bumper component**
> - **Conclusions**

Welcome 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) of the accepted paper will receive a complimentary (no fee) registration, when they register using the "LSTC Conference Registration," at the Royal Dearborn Hotel.

Corporate Participation: Platinum, Gold, Silver, Bronze

Conference Dates
Sunday, June 12, 2016:
    Registration Exhibition Area, Reception
Monday, June 13, 2016:
    Registration Exhibition Area Banquet
Tuesday, June 14, 2016:
    Registration Exhibition Area Closing
Wednesday & Thursday, June 15 & 16, 2016:
    Training Classes

Contact Information
Abstracts & papers:
        papers@lstc.com
Participation, Registration:
    Marsha Victory vic@lstc.com

Abstract Submisson
• Deadline: November 30, 2015
• Length: Approx. 300 words, include figures
• Format: 7" x 8½", MS Word template provided

Notification: December 31, 2015

Paper Submission
• Deadline: March 05, 2016
• Length: 3,000 word maximum
• Format: 8½" x 11" paper, single-spaced
        MS Word template provided

Conference Call For Papers
Applying LS-DYNA and its strongly coupled integrated solvers:

• Acoustics
• Aerospace
• Automotive
— Crashworthiness
— Durability
— NVH
• Ballistics and Penetration
• Biomechanics
• Civil Engineering
• Electromagnetics
• Fluid Dynamics
— Compressible
— ALE (Lagrangian, Eulerian)
— CESE
— Incompressible
• Granular Flow
• Heat Transfer
• Impact and Drop Testing
• Manufacturing Processes
• Metal Forming
• Modeling Techniques
• Nuclear Power
• Occupant Safety
• Particle Method
— Airbag Particle Method
— Discrete Elements
— Element Free Galerkin
— Smooth Particle Hydrodynamics
• PrePost Processing
• Seismic Engineering
• Ship Building

Conference Schedule & Training

Sunday, June 12, 2016:
- Registration for early arrivals,
- Training opportunities during day
- Exhibitors open in evening,
- Reception

Monday, June 13:
- Registration,
- Conference,
- Banquet

Tuesday, June 14, 2016.
- Registration,
- Conference
- Closing session - about 3pm

Wednesday, June 15
Thursday,   June 16
- 1& 2-day Training at U-M Dearborn

Conference Sponsorship and Booth Information

For information on Sponsorships and Booths please contact Marsha vic@lstc.com

Previous Sponsors and Exhibitors: If you would like the same booth that you hosted, at the last conference, please let me know so I can quickly reserve your booth placement.

AUTOMOTIVE NEWS & EVENTS

Dilip Bhalsod

The purpose of this section is to provide a place, for our automotive readers, to share news and events relative to their company and/or products.

The criteria for submitting information is as follows:

- · It has to be public information
- · An internet URL
- · Be technical, informational, or human interest.
- · We do not accept financial quarterly information

We would welcome the opportunity to share information about your company with our readership.

You may send Title to your information and the accompanying URL to Dilip Bhalsod at agiac99@aol.com - Subject Line please use " Automotive News"

Submissions should be received by the 15th of each month, of the month you want your article placed. For example: We would need the title of the news or event by December 15th, 2015 to be featured in the December 2015 FEA newsletter.

Submission publications is at the sole discretion of FEA Information Inc.

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Ford Launching Technology-Packed New Escape; More Connectivity, Innovative Features Make Driving Safer, Easier

· New Ford Escape gives SUV customers even more of what they want – additional innovative features to make their daily drive safer and easier, greater connectivity, two new EcoBoost® engines and technology that saves fuel in heavy traffic
· Escape is first Ford vehicle in the world with SYNC® Connect – customers can unlock and lock their doors, start engine, even locate vehicle through smartphone app
· Driver-assist technologies including enhanced active park assist, lane-keeping system, and adaptive cruise control and forward collision warning with brake support make driving easier and safer
· Environmentally friendly Auto Start-Stop standard with Escape's two new EcoBoost engines – a 1.5-liter and 2.0-liter twin-scroll; technology shuts off engine in common stops so the vehicle uses no gas, improving fuel economy by 4 percent to 6 percent in stop-and-go traffic

LOS ANGELES, Nov. 17, 2015 – The popular Ford Escape SUV is newly engineered to make customers feel unstoppable – with even more driver-assist technologies to help enable safer and easier driving, new mobile connectivity that allows owners to interact with their vehicle from anywhere through a smartphone app, and two new efficient EcoBoost® engines.

The new Escape is the first Ford vehicle in the world with available SYNC® Connect, allowing users to unlock doors, check fuel level and even locate where a vehicle is parked.

To help drivers feel more confident behind the wheel, driver-assist technologies available for the new Escape include adaptive cruise control and forward collision warning with brake support, a lane-keeping system and enhanced active park assist. That's all packed in a vehicle that has been redesigned from the inside out, including a driver and front passenger area upgraded with more storage space and mobile device charge ports.

"The compact SUV segment is the largest and most competitive in the United States, and the new Escape delivers even more of what our customers want – more technology they can really use to make their daily drive safer and easier," said Joe Hinrichs, Ford president, The Americas.

SYNC Connect keeps drivers in touch with remote vehicle access

Need to lock your new Escape from across town? There is an app for that.

With SYNC Connect, owners can remotely start their vehicle and schedule future starts, as well as lock and unlock their Escape using their smartphones. The technology provides vehicle location, as well as key vehicle information such as tire pressures, battery and fuel levels.

SYNC Connect, available with SYNC® 3 for the new Escape, comes with complimentary activation for five years. A user enables the system through a two-step authentication process designed to protect personal information. SYNC 3 features faster performance, conversational voice recognition, intuitive smartphone-like touch screen and easier-to-understand graphical interface.

Driver-assist technologies SUV drivers want
Other driver-assist features available help make the daily commute safer and easier for drivers of the new Ford Escape:

- ·Adaptive cruise control and forward collision warning with brake support: Sensors detect when Escape is approaching a slow-moving vehicle, and adjust cruise control accordingly
- Enhanced active park assist: Provides steering assistance to park the vehicle in a parallel or reverse perpendicular parking spot, and pull out from tight parallel parking spots; driver controls brake, accelerator and shifter.

Technology includes side park distance control

- Lane-keeping system: The system includes lane-keeping alert, which alerts drivers when they drift unintentionally from their lane, and lane-keeping aid, which provides steering assistance to guide an unintentionally drifting vehicle back into its lane
- Driver Alert System: Using data from the lane-keeping system, the Driver Alert System can detect signs of fatigued driving and provide a warning on the instrument cluster

Already available driver-assist features for the new Escape include:

- Blind Spot Information System with cross-traffic alert: BLIS® can alert drivers when a vehicle enters the defined blind spot in a neighboring lane. An indicator light provides a warning in the side mirror corresponding to the side on which the vehicle is approaching
- Hill-start assist: The feature holds the vehicle stationary on a hill long enough for the driver to transition from brake to gas pedal
- Auto high-beam control: System automatically switches from high to low beams, and vice versa, depending on ambient lighting
- Hands-free, foot-activated liftgate: Opens liftgate with the simple kick of a key fob-carrying customer's foot beneath rear bumper – perfect for those whose hands are loaded with gear

Two new EcoBoost engines with Auto Start-Stop

Escape is the first Ford vehicle to make Auto Start-Stop standard with either of two EcoBoost engines new to the model – a 1.5-liter and 2.0-liter twin-scroll. The technology senses when the vehicle is sitting idle and shuts off the engine to conserve fuel, resulting in a 4 percent to 6 percent improvement in fuel economy in stop-and-go traffic. The engine restarts automatically – in less than half a second – when the driver releases the brake pedal.

"Auto Start-Stop is the equivalent of turning off the lights when you leave a room, or turning off a water faucet when you're done washing dishes," said Milton Wong, Escape chief engineer. "It's a high-tech approach to more efficient driving."

Escape SE and Titanium trim levels come standard with the new 1.5-liter four-cylinder EcoBoost, while the powerful new twin-scroll 2.0-liter EcoBoost is optional. A six-speed automatic transmission is standard across the line, with new paddle-shift technology available for Escape SE and Titanium.

The twin-scroll turbocharged 2.0-liter EcoBoost delivers 245 horsepower and 275 lb.-ft. of torque, along with greater efficiency and improved noise, vibration and harshness performance. New pistons provide a higher, more efficient compression ratio, and a newly designed, integrated exhaust manifold is optimized for the twin-scroll turbo system.

The aluminum-block, twin-cam 1.5-liter EcoBoost with integrated exhaust manifold is projected to deliver horsepower and torque output comparable to the 1.6-liter – an expected 180 horsepower and 185 lb.-ft. of torque.

Along with the new EcoBoost offerings, the 2.5-liter i-VCT four-cylinder engine carries over as standard equipment for the Escape S series.

Three trim levels, with new Sport Appearance Package

Escape customers can continue to select from S, SE and Titanium trim levels, as well as a new Sport Appearance Package available for SE and Titanium.

Charcoal Black with subtle Deep Space black trim is available for Escape Titanium. Salerno leather seats feature a unique horizontal pattern. Titanium customers can also opt for Medium Stone seats to contrast with the black interior.

Escape will be offered in three new colors – Canyon Ridge, White Gold and Lightning Blue. Six new wheel designs are also available.

Built to lead in a growing segment

Overall SUV sales continue to trend higher – both in North America and around the world. SUVs now account for about one third of the U.S. auto industry, a number Ford projects will grow to 40 percent by 2020. In the United States, SUV sales are expected to exceed 5 million units in 2015 for the first time ever.

Small SUVs play an increasingly larger role, and Escape remains one of the most popular. Since its launch in 2000, more than 3 million units have been sold in the United States, including a record 306,212 Escape vehicles in North America in 2014. Ford expects Escape sales this year will exceed that figure.

Daimler test track in Stuttgart

Negotiating the steep-bank curve at 100 kilometres per hour. A new S 511 HD is available for internal visitor groups at the testing grounds in Stuttgart-Untertürkheim.

Driving along the steep-bank curve

· S 511 HD new visitor vehicle on Stuttgart test track in the Daimler plant
· Driving demonstrations on uphill and downhill stretches
· ComfortClass 500 vehicle rounds off Setra anniversary "60 years of club coaches"

Visitors can now "experience" the Daimler test track in Stuttgart-Untertürkheim in a very comfortable and, above all, safe way with a new S 511 HD club coach. Ulrich Bastert, Head of Marketing, Sales and After Sales Daimler Buses, handed over the Setra ComfortClass 500 vehicle to Frank Deiss, Site Manager of the Mercedes-Benz plant in Untertürkheim, the district that is also home to the 8.4-hectare testing grounds.

The S 511 HD measuring 10,465 mm in length went on sale at the start of the year as the shortest model in the innovative model series.

It is the successor to an S 411 HD from the Setra TopClass 400 series, which was used here as a visitor coach for over six years. Thanks to its compact vehicle dimensions, the club coach offers groups of guests a superlative experience which also includes driving on uphill and downhill sections.

The culmination of the demonstration drives, which include evasive and braking manoeuvres at various speeds, takes the form of negotiating a steep-bank curve which has a radius of 60 metres. The S 511 HD negotiates the section at a speed of 100 kilometres per hour, tilting up to 90 degrees in the process.

The design of the new demonstration bus promotes the non-profit Association Star Care e.V., an initiative of Daimler AG employees, partner companies and private individuals. Star Care supports social projects for children in the region who are ill and in need of help.

2500 visitors a year: The testing grounds in the Daimler main plant Stuttgart-Untertürkheim have been up and running since the end of the 1960s and provide an impressive experience for around 2500 visitors every year. Various route profiles are included on a total length of over 15 kilometres, which are used by the Group's test engineers for different testing programmes. All the types of road and terrain here are faithful reproductions of actual routes around the world.

Efficient and successful - the Setra ComfortClass 500: The S 511 HD is a Setra ComfortClass 500 vehicle. The Setra model series embodies the established, classic Setra attributes of innovation, comfort, economy and safety in a new style. The Setra ComfortClass 500 demonstrated outstanding energy efficiency in a spectacular record run soon after its market launch. In this highly acclaimed comparison drive, the test vehicle cut fuel consumption by 8.2 percent compared with the Euro 5 predecessor model. The 500th Setra

It all began with the compact S 6: Six decades lie between the S 511 HD and the presentation of the very first club coach. With a length of 6700 mm, the S 6 in the Setra 10 series was the smallest Setra coach ever built - and the world's first compact coach with a unitised body design. The coach celebrated its premiere at the Geneva Motor Show in 1955. 1172 S 6 coaches were built and sold up to

1964. In 1965, Setra presented the S 7 as the successor to the S 6. The 7670 mm long coach already sported the angular shape of the Setra 100 series that would roll off the production line two years later. 1968 saw the manoeuvrable S 80 from the 100 series go into volume production as a further development of the S 7. The 34-seater coach had a total length of 7690 mm. The shortest version of the 200 series was the S 208 H. 494 units of the 7600 mm long coach were produced between 1979 and 1983. The S 210 HD also has its firm place in the lineage of Setra club coaches. The 9340 mm long coach was the first high-decker among the compact coaches following the discontinuation of the S 208 H in 1983. The S 309 HD, which was introduced by the Setra brand in 1994, accommodated customers' wishes for the 300 series also to include a touring coach of under nine metres in length. At the same time, the vehicle also broke new ground with a composite design consisting of a steel base frame and aluminium body. The shortest variant of the Setra TopClass 400, the S 411 HD measuring 10,160 mm in length, was also firmly established among coach operators throughout Europe in the exclusive club travel segment. Following the comprehensive facelift of the Setra touring coaches in 2008, its compact length, a wheelbase of 3760 mm and an overhang of 2215 mm at the front and 2960 mm at the rear remained synonymous with superb agility.ComfortClass 500 vehicle was delivered in Germany in the spring of 2015.

AEROSPACE NEWS & EVENTS

Marnie Azadian

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- · Be technical, informational, or human interest.
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Unmanned Systems: Enhancing our Warfighting Capabilities Today and in the Future
(Source: US Navy; issued November 19, 2015)
By Rear Adm. Robert Girrier, Director,
Unmanned Warfare Systems (OPNAV N99)

This is an exciting time to be serving as the Navy's Director, Unmanned Warfare Systems (N99) partnered with Secretary Frank Kelley as the Deputy Assistant Secretary of the Navy (DASN) for Unmanned Systems. We were able to speak a couple of weeks ago at an event for the Association for Unmanned Vehicle Systems International, and I want to share with you some thoughts and information about our newly formed directorate we discussed at the event.

We are living in a world that is connected more than ever with the surge of technology and rapid information sharing. We are also living in an increasingly dangerous world with contested regions on the sea, in the air, under the sea and in cyberspace. My job, drawing on fleet experience, is to see how unmanned systems and technology can help solve problems we face in contested regions around the world. How can unmanned systems help leverage the capabilities of our ships, submarines and aircraft?

While many of you are broadly aware of unmanned capabilities today, some of you have actually worked with these vehicles first hand. Fire Scout and Scan Eagle have been used for several years supporting Operation Iraqi Freedom and Enduring Freedom. Currently, Fire Scout is employed in conjunction with a manned helicopter aboard USS Fort Worth (LCS 3). This past May, USS North Dakota (SSN 784) deployed and recovered unmanned underwater vehicles (UUV) while operating in the Mediterranean Sea.

As the resource sponsor for unmanned warfare systems, I'm charged to serve as champion for Pre-Milestone B systems, or systems that have not begun the official start of a program in the acquisitions process. In simpler terms, N99 will be focused on the prototype and demonstration of unmanned systems in a rapid development cycle.

We will work with Naval Warfare Development Centers and the fleets to find out where the capability gaps exist and where unmanned systems might fill those gaps and requirements. Next, with the DASN for unmanned systems, we will survey technologies across the research and development enterprise to find the right match of technology to fill those capability gaps identified. Our team will then prioritize these matches for prototyping and demonstration.

This process informs our Rapid Development Plan that executes within a two-year period. Within those two years, we'll also look to terminate those demonstration efforts that are not working out for the fleet in order to reinvest money into more promising initiatives. Through this approach, resources are optimized and technical risk is reduced, saving time and money. I also want to point out that unmanned systems directly support our Sailors, making their jobs easier, more efficient and ultimately, a more effective combat team.

As Secretary Mabus has said, the N99 stand-up isn't just about producing improvements to platforms and weapons, it's about implementing a cultural change. As unmanned systems continue to come online and mature, we're changing how we think and how we operate, so we're not just reacting to the challenges we face today, but focusing creativity and initiative to ensure we prevail in the future.

I'm excited to move out with Secretary Kelley with this important portfolio, and remain committed to developing and integrating unmanned systems into our broader warfare areas. I look forward to hearing the input from the fleet and seeing you out there — on the job.

YouTube Channel Multiphysics – LS-DYNA

LS-DYNA Multiphysics   - **Facundo Del Pin**   fdelpin@lstc.com

Updates On The Channel

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Available Videos:

Electromagnetism
   Sheet forming on conical die

ICFD and DEM coupling

ICFD coupled weith DEM (LS-DYNA)   Compressible CFD (CESE)
   Shock wave impacting a wedge

Electric Kettle Simulation

**Snow accumulation on vehicle using ICFD solver and DEM coupling
 (LS-DYNA R9)**

www.youtube.com/user/lstcanddynamore

LSTC & DYNAmore

**LS-DYNA Corporate
YouTube Channel**

Welcome to the LSTC & DYNAmore Corporate YouTube Channel - This channel is to offer information on the general-purpose finite-element program LS-DYNA and LS-DYNA's, fully integrated, strongly coupled, solvers for extensive multiphysics capabilities. All LS-DYNA Solvers are strongly coupled and integrated, at no additional fees.
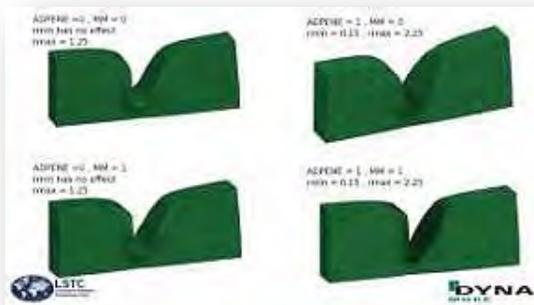
LS-DYNA: Implicit element-Free Galerkin (EFG) - Cutting Simulation

by LS-DYNA Corporate Tutorial & Content

Published on Oct 28, 2015

This LS-DYNA simulation shows the cutting simulation of a piece of metal. It was computed with the implicit structural solver of LS-DYNA with an r-adaptive Element-Free Galerkin scheme.

FAQs

LSTC provide a huge number of FAQs at the ftp site ftp.lstc.com/outgoing/support/FAQ
. Many thanks to Jim Day of LSTC for making this information available.

Some specific popular FAQs include:

consistent units
> ftp://ftp.lstc.com/outgoing/support/FAQ/consistent_units

An overview of Contact
> ftp://ftp.lstc.com/outgoing/support/FAQ/contact.overview

Soft Contact
> ftp://ftp.lstc.com/outgoing/support/FAQ/contact.soft1

General guidelines for Crash Analysis
> ftp://ftp.lstc.com/outgoing/support/FAQ/guidelines.pdf

Hourglass Control
> ftp://ftp.lstc.com/outgoing/support/FAQ/hourglass_condensed

Dealing with Instabilities
> ftp://ftp.lstc.com/outgoing/support/FAQ/instability.tips

Dealing with long run times
> ftp://ftp.lstc.com/outgoing/support/FAQ/long_run_times

Mass Scaling
> ftp://ftp.lstc.com/outgoing/support/FAQ/mass_scaling

Negative Volume in Brick Elements
> ftp://ftp.lstc.com/outgoing/support/FAQ/negative_volume_in_brick_element.tips

Quasi-static simulations
> ftp://ftp.lstc.com/outgoing/support/FAQ/quasistatic

Restarting Analyses
> ftp://ftp.lstc.com/outgoing/support/FAQ/restart

Modeling spinning bodies
> ftp://ftp.lstc.com/outgoing/support/FAQ/spin
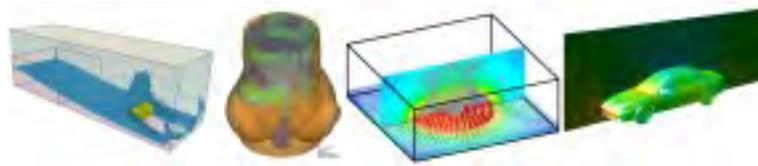
Spring Back
> ftp://ftp.lstc.com/outgoing/support/FAQ/springback

Stress vs Strain for plasticity models
> ftp://ftp.lstc.com/outgoing/support/FAQ/stress_vs_strain_for_plasticity_models

User-defined materials
> ftp://ftp.lstc.com/outgoing/support/FAQ/user_defined_materials.faqFAQs

LS-DYNA Support

At this site you will find answers to basic and advanced questions that might occur while using LS-DYNA, information about new releases and ongoing developments**.**

2015 Recent Changes

The Support Website has the direct pdfs for the following October Updates

- History Variables for Certain Material Models

- LS-DYNA Manual R 8.0 - Vol III

- LS-DYNA Manual R 8.0 - Vol II

- LS-DYNA Manual R 8.0 - Vol I
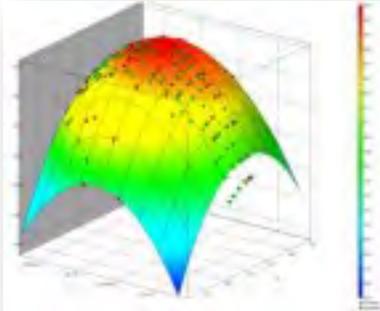
LS-OPT

LS-OPT, the graphical optimization tool that interfaces perfectly with LS-DYNA,

Allows the user to structure the design process, explore the design space and compute optimal designs according to specified constraints and objectives. The program is also highly suited to the solution of system identification problems and stochastic analysis.

The graphical tool LS-OPTui interfaces with LS-DYNA and provides an environment to specify optimization input, monitor and control parallel simulations and post-process optimization data, as well as viewing multiple designs using LS-PREPOST.

Optimization

• Size-/Shape optimization
• Constraints, mixed continuous/discrete
  variables, multiple load cases, etc.
• Multi-Objective optimization
   (Pareto Frontier)
• Reliability based design optimization

LS-TaSC - LS-TaSC 3.1 released

Topology Optimization

A tool for the topology optimization of non-linear problems involving dynamic loads and contact conditions. It can be used to find a concept design for most structures analyzed using LS-DYNA.
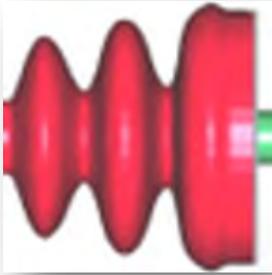
LS-DYNA Examples

The site presents approximately 200 LS-DYNA examples from various training classes. The input files and several class notes are available for download.

The download is free of charge, a login is not required. The majority of content has been contributed by LSTC/DYNAmore.   The content is prepared for educational purposes. Hence, material properties and other parameters might be non-physic for simplification.

Among the files and Sections:

LS-DYNA Keyword Search   If you are looking for an example containing some specific LS-DYNA keyword you may use the site search in the header section of this page.

Show Cases   This folder contains several LS-DYNA examples focusing on specific load cases or keywords.

Metal Forming   The examples in this section are from the introductory class on metal forming from LSTC. You may access the examples separately by the menu on the left. The examples are prepared for LS-DYNA 970 and upwards.

ALE The examples in this section are from the ALE (Arbitrary Lagrangian Eulerian Method) class of M'hamed Souli. M'hamed Souli is Professor at the University in Lille France. Both authors are key developers for the powerful capabilities of the Eulerian Methods in LS-DYNA. You may access the examples separately by using the menu on the left. The examples run with LS-DYNA 970 and upwards.

Thermal   The examples in this section present examples about the thermal capabilities of LS-DYNA. The examples are provided by Dr. Art Shapiro. Art is working since decades on topics reated to DYNA3D, LS-DYNA and TOPAZ. He is the key developer for the thermal capabilites of LS-DYNA. Art is one of the co-founders of LSTC. You may access the examples separately by using the menu on the left.

DYNAlook

DYNAlook

The site presents papers from European and International LS-DYNA User Conferences and papers provided by other users. 1604 papers are available.

The papers are from LS-DYNA Conferences and are accessible via the search functionality.

2015 will be published soon.

13th International
LS-DYNA Conference
 Detroit, 2014

12th International
LS-DYNA Conference
 Detroit, 2012

9th European
LS-DYNA Conference
 Manchester, 2013

8th European LS-DYNA
Conference
 Straßburg, 2011 …

www.dummymodels.com

DUMMY Model Support - Currently, the manuals of models developed by DYNAmore are available.

This site provides detailed information on dummy models for LS-DYNA. In the near future the models developed by LSTC will be added. The LSTC dummy and barrier are models are no fee and included with the LS-DYNA license.

To license the models we kindly ask to contact your local LS-DYNA distributor. Any kind of proposal or enhancements for the models and this site is very welcome.

Among the Dummy Models on this site you can find:

Side Impact Dummies

Rear Impact Dummies

ES2/ES2re -
DYNAmore

BioRID-II V3.
DYNAmore

World SID 50%
DYNAmore

Child Dummies

US-SID
DYNAmore

P-1.5
DYNAmore
P-3.0
DYNAmore

LSTC Models Overview

Free or low cost FE models are important to LS-DYNA users in various fields. Therefore, LSTC is developing models with the help and support of our customers. Some of the models are joint developments with our partners.

LSTC's Models are available at no cost to licensees of LS-DYNA who are current with their annual license fees (Annual License) or maintenance fees (Paid-up License). Models are fully unencrypted and accessible. LSTC endeavors to make the models as complete, accurate, reliable, and easy to use as possible.

This section of our site was created to keep users informed about our models. It will be updated periodically to reflect changes to existing models and announce newly released models.

Feedback about the models is welcome and will be used to improve future releases. To submit questions, suggestions, or feedback about LSTC's models, please send an e-mail to: atds@lstc.com.

For news and updates about our dummy models, please join our models news mailing list.
www.lstc.com/products/models/mailinglist

Barrier Models

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

AEROSPACE WORKING GROUP
http://awg.lstc.com/tiki/tiki-index.php

The LS-DYNA® Aerospace Working Group (AWG) is a partnership of federal agencies, corporations, and universities working together to develop and publish aerospace test cases and modeling guidelines for finite element analyses with LS-DYNA®.

The actions of the AWG serve to support the use, development, and reliability of LS-DYNA® for aerospace numerical analyses.

Some participants are partially or fully funded by the Federal Aviation Administration (FAA) in the National Aviation Research Plan 'Aircraft Catastrophic Failure Prevention Research' program, or by the National Aeronautics and Space Administration (NASA), or associated with the participants as LS-DYNA® users.

Engine Related Impact Failure (ERIF) - Arizona State University (ASU)
- Boeing
- Central Connecticut State University (CCSU)
- Federal Aviation Administration (FAA)
- General Electric Aviation
- George Mason University (GMU)
- Honda Aircraft Engine
- Honeywell
- Livermore Software Technology Corporation (LSTC)
- National Aeronautics and Space Administration (NASA)

- Ohio State University (OSU)
- Pratt & Whitney
- Pratt & Whitney Canada
- Rolls-Royce
- University of Akron
- Williams International

Cabin Interior (CI)

- B/E Aerospace
- Boeing
- Bombardier
- Central Connecticut State University
- Cessna
- Federal Aviation Administration (FAA)
- Humanetics
- National Aeronautics and Space Administration (NASA)
- Wichita State University
- Zodiac Aerospace
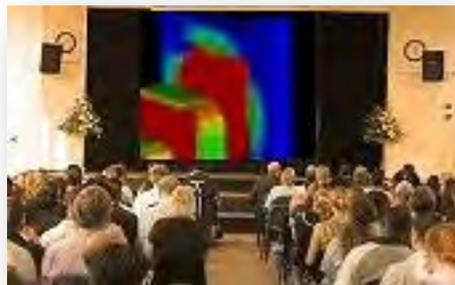
Participant's Training Classes

Webinars

Info Days

Class Directory

Participant Class Directory

Arup (corporate)	www.oasys-software.com/dyna/en/training
BETA CAE Systems S.A. (corporate)	www.beta-cae.com/training.htm
DYNAmore (corporate)	www.dynamore.de/en/training/seminars
ESI-Group (corporate)	https://myesi.esi-group.com/trainings/schedules
ETA (corporate)	www.eta.com/support2/training-calendar
LSTC (corporate)	www.lstc.com/training
LS-DYNA OnLine (Al Tabiei)	www.LSDYNA-ONLINE.COM

ARUP   Visit the website for complete listings/changes/locations

www.oasys-software.com/dyna/en/training

To enrol on any of these courses please email Dyna Support at dyna.support@arup.com.

Date	Training Class
26-27 January 2016	Polymeric Material Modelling in LS-DYNA
Scheduled on request	Oasys PRIMER - An Introduction
Scheduled on request	Oasys PRIMER - Automatic Assembly of Multiple Crash Cases
Scheduled on request	Oasys PRIMER - Spotwelds and Connections
Scheduled on request	Oasys PRIMER - Seat and Dummy Positioning
Scheduled on request	Oasys PRIMER & D3PLOT - An Introduction to JavaScripting

BETA CAE   Visit the website for complete listings/changes/locations

www.beta-cae.com/training.htm

Basic and advanced training courses can be scheduled upon request. A variety of standard or tailored training schedules, per product or per discipline, are being offered to meet customers needs.

A number of recommended training courses offered are described below. The list is not exhaustive and more courses can be designed according to your needs.
Please, contact ansa@beta-cae.gr   for further details.

Recommended Training Courses (Complete information on website)

- SPDRM
- ANSA / μETA Basics
- ANSA / μETA for CFD
- ANSA / μETA for Crash & Safety simulation
- ANSA / μETA for Durability simulation

- ANSA / μETA for NVH analyses
- Multi-Body Dynamics
- Laminated Composites
- Morphing and Optimization
- Automation
- Additional special sessions

DYNAmore   Visit the website for complete listings/changes/locations

     www.dynamore.de/en/training/seminars

Please Visit the DYNAmore website for dates and classes

https://myesi.esi-group.com/trainings/schedules

6 Jan 2016 to 7 Jan 2016
     Basic OpenFOAM training for application engineers

20 Jan 2016 to 22 Jan 2016
     PAM-STAMP for the automotive industry (Group Learning)

LSTC   Visit the website for complete listings/changes/locations

www.lstc.com/training

January Training

- **MI Intro LS-PrePost**
- **MI Intro LS-DYNA**
- **MI Blast In LS-DYNA**

February Training

- **CA ALE/Eulerian/FSI**
- **CA   SPH**

March

- **MI Intro LS-PrePost**
- **MI Intro LS-DYNA**

May

- **CA Intro LS-PrePost**
- **CA Intro LS-DYNA**
- **MI Contact**
- **MI Composite**

LS-DYNA   Visit the website for complete listings/changes/locations

On Line   www.LSDYNA-ONLINE.COM

For Information contact: courses@lsdyna-online.com or 513-3319139

Composite Materials In LS-DYNA

This course will allow first time LS-DYNA users to use composite materials. The most important elements to start using all the composite material models in LS-DYNA will be presented in the 8 hours.

Foam & Viscoelastic Materials in LS-DYNA

Objective of the course: Learn about several foam material models in LS-DYNA to solve engineering problems. Detailed descriptions are given of the data required to use such material in analysis. Examples are used to illustrate the points made in the lectures

Plasticity, Plastics, and Viscoplastics Materials in LS-DYNA

Objective of the course: Learn about several plasticity based material models in LS-DYNA to solve engineering problems. Detailed descriptions are given of the data required to use such material in analysis. Examples are used to illustrate the points made in the lectures.

Rubber Materials in LS-DYNA

Objective of the course: Learn about several rubber material models in LS-DYNA to solve engineering problems. Detailed descriptions are given of the data required to use such material in analysis. Examples are used to illustrate the points made in the lectures.

BETA CAE Systems S.A.

BETA CAE Systems S.A.– ANSA

BETA CAE Systems S.A.– µETA

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.

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

CRAY   **www.cray.com**

THE CRAY® XC™ SERIES: ADAPTIVE SUPERCOMPUTING ARCHITECTURE

The Cray® XC™ series delivers on Cray's commitment to an adaptive supercomputing architecture that provides both extreme scalability and sustained performance. The flexibility of the Cray XC platform ensures that users can precisely configure the machines that will meet their specific requirements today, and remain confident they can upgrade and enhance their systems to address the demands of the future.

Cray® XC40™ and XC40-AC™ supercomputers are enabled by a robust Intel® Xeon® processor road map, Aries high performance interconnect and flexible Dragonfly network topology, providing low latency and scalable global bandwidth to satisfy the most challenging multi-petaflops applications.

While the extreme-scaling Cray XC40 supercomputer is a transverse air-flow liquid-cooled architecture, the Cray XC40-AC air-cooled model provides slightly smaller and less dense supercomputing cabinets with no requirement for liquid coolants or extra blower cabinets. A reduced network topology lowers costs, and the system is compatible with the compute technology, OS, ISV and software stack support of high-end XC40 systems.

MAXIMIZE PRODUCTIVITY WITH CRAY CS SERIES SUPERCOMPUTERS

Understanding the need for nimble, reliable and cost-effective high performance computing (HPC), we developed the Cray® CS™ cluster supercomputer series. These systems are industry-standards-based, highly customizable, and expressly designed to handle the broadest range of medium- to large-scale simulation and data analytics workloads.

All CS components have been carefully selected, optimized and integrated to create a powerful HPC environment. Flexible node configurations featuring the latest processor and interconnect technologies mean you can tailor a system to your specific need — from an all-purpose cluster to one suited for shared memory, large memory or accelerator-based tasks.

Innovations in packaging, power, cooling and density translate to superior energy efficiency and compelling price/performance. Expertly engineered system management software instantly boosts your productivity by simplifying system administration and maintenance.

Maximize your productivity with flexible, high-performing Cray CS series cluster supercomputers.

CRAY® SONEXION® SCALE-OUT LUSTRE®STORAGE SYSTEM

Brought to you by Cray, the world's leading experts in parallel storage solutions for HPC and technical enterprise, the Cray® Sonexion® 2000 system provides a Lustre®-ready solution for popular x86 Linux® clusters and supercomputers through Cray Cluster Connect™. As a leader in open systems and parallel file systems, Cray builds on open source Lustre to unlock any industry-standard x86 Linux compute cluster using InfiniBand™ or 10/40 GbE utilizing proven Cray storage architectures.

The Cray Sonexion 2000 system provides 50 percent more performance and capacity than the Sonexion 1600 system in the same footprint.

Simplify

- Through its fully-integrated and pre-configured design, Cray Sonexion storage gets customers deployed faster and reduces the total number of components to manage.
- The Sonexion system's compact design reduces the total hardware footprint of petascale systems by 50 percent over component-based solutions.

Scale

- Performance scales from 7.5 GB/s to 1.7 TB/s in a single file system.
- Capacity scales in modular increments; the Sonexion 2000 system stores over two usable petabytes in a single rack. Fewer drives and components reduce capital costs as capacity grows.

Protect

- New software-based GridRAID offers higher levels of data protection and up to 3.5 times faster rebuild times than traditional RAID6 and MD-RAID storage.
- Cray ensures quality, reliability and stability at scale through exhaustive thermal and real-world stress testing, system hardening and availability, and tight hardware and software integration.

OPEN ARCHIVE AND TIERED STORAGE SYSTEM FOR BIG DATA AND SUPERCOMPUTING

Cray Tiered Adaptive Storage (TAS), powered by Versity, is designed to meet the expansive data preservation and access needs driven by big data, where data needs to migrate fluidly from high performance storage to deep tape archives, while always being accessible to users.

With Cray TAS you can:

- Deploy tiered storage and archives faster
- Feel confident preserving and protecting data into the future, using Linux®
- Simplify managing data using familiar tools for years to come

CRAY® URIKA-XA™ EXTREME ANALYTICS PLATFORM

Pre-integrated, open platform for high performance analytics delivers valuable business insights now and into the future

The flexible, multi-use Cray® Urika-XA™ extreme analytics platform addresses perhaps the most critical obstacle in data analytics today — limitation. Analytics problems are getting more varied and complex but the available solution technologies have significant constraints. Traditional analytics appliances lock you into a single approach and building a custom solution in-house is so difficult and time consuming that the business value derived from analytics fails to materialize.

In contrast, the Urika-XA platform is open, high performing and cost effective, serving a wide range of analytics tools with varying computing demands in a single environment. Pre-integrated with the Apache Hadoop® and Apache Spark™ frameworks, the Urika-XA system combines the benefits of a turnkey analytics appliance with a flexible, open platform that you can modify for future analytics workloads. This single-platform consolidation of workloads reduces your analytics footprint and total cost of ownership.

Based on pioneering work combining high-performance analytics and supercomputing technologies, the Urika-XA platform features next-generation capabilities. Optimized for compute-heavy, memory-centric analytics, it incorporates innovative use of memory-storage hierarchies and fast interconnects, which translates to excellent performance at scale on current as well as emerging analytics applications.

Additionally, the enterprise-ready Urika-XA platform eases the system management burden with a single point of support, standards-based software stack and compliance with enterprise standards so you can focus on extracting valuable business insights, not on managing your environment.

THE URIKA-GD™ GRAPH DISCOVERY APPLIANCE IS A PURPOSE-BUILT SOLUTION FOR BIG DATA RELATIONSHIP ANALYTICS.

The Urika-GD™ appliance enables enterprises to:

· Discover unknown and hidden relationships and patterns in big data
· Build a relationship warehouse, supporting inferencing/deduction, pattern-based queries and intuitive visualization
· Perform real-time analytics on the largest and most complex graph problems

The Urika-GD system is a high performance graph appliance with a large shared memory and massively multithreaded custom processor designed for graph processing and scalable I/O.

With its industry-standard, open-source software stack enabling reuse of existing skill sets and no lock in, the Urika-GD appliance is easy to adopt.

The Urika-GD appliance complements an existing data warehouse or Hadoop® cluster by offloading graph workloads and interoperating within the existing enterprise analytics workflow.

Realize rapid time to powerful new insights.

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.

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

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.

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

ETA – Engineering Technology Associates
etainfo@eta.com

www.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

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.

Latest Release is Visual-Environment v11.0

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.

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

Oasys T/HIS

Key benefits:

- Graphical post-processor created specifically for LS-DYNA®
- Automatically reads all LS-DYNA® results
- Wide range of functions and injury criteria
- Easy handling of data from multiple models
- Scripting capabilities for fast post-processing

Oasys REPORTER

Key benefits:

- Automatic report generation tool created specifically for LS-DYNA®
- Automatically post-process and summarize multiple analyses
- Built-in report templates for easy automatic post-processing of many standard impact tests

Shanghai Hengstar

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 focus 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.

www.penguincomputing.com

Penguin Computing provides customized build-to-order server solutions for enterprises and institutions with special hardware requirements. We complement our hardware and software solutions with Penguin Computing on Demand (POD)—a public HPC cloud that provides supercomputing capabilities on-demand on a pay-as-you-go basis.

Penguin is a one-stop shop for HPC and enterprise customers, providing solutions for a wide array of computing needs and user profiles:

HPC and cloud solutions optimized for industry-specific uses

High-powered workstations for individual power users

Highly power-efficient server platforms for enterprise computing

Private and public cloud solutions, including hybrid options.

Focus

Penguin Computing is strictly focused on delivering Linux-optimized enterprise solutions. We use a thorough, proven hardware qualification and testing process to ensure that our solutions deliver optimal performance and robustness.

Penguin's in-house development team is dedicated to providing a complete highly interoperable software stack that is tuned for Penguin hardware. As a result our solutions are easy-to-use and "just work." Our integrated approach even extends to our hybrid compute solutions, which combine local and cloud computing resources, taking ease-of-use and cost-effectiveness to the next level. Penguin customers can reduce capital expenditures by right-sizing clusters for average resource utilization and easily and quickly offload excess workload into the cloud.

Penguin also offers a full range of services and support that is backed by a seasoned team of Linux, HPC and application experts.

Distribution/Consulting	US/Canada	Distribution/Consulting

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		

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

ESI-Group N.A

www.esi-group.com

QuikCAST	SYSWELD	PAM-RTM	PAM-CEM
VA One	CFD-ACE+	ProCAST Process	Visual-
VisualDSS	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

Gompute info@gompute.com
www.gompute.com

LS-DYNA Cloud Service	Additional software
Additional Services	

United States

Comet Solutions steve.brown@cometsolutions.com

Comet Software

Distribution/Consulting	US/Canada	Distribution/Consulting

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	

United States

Predictive Engineering   george.laird@predictiveengineering.com
www.predictiveengineering.com

FEMAP	NX Nastran	LS-DYNA	LS-OPT
LS-PrePost	LS-TaSC	LSTC Dummy Models	
		LSTC Barrier Models	

France	**DynaS+**		v.lapoujade@dynasplus.com	
	www.dynasplus.com		Oasys Suite	
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	DYNAFORM	VPG	MEDINA	
	LSTC Dummy Models		LSTC Barrier Models	

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

Distribution/Consulting		Europe		Distribution/Consulting

Germany   **DYNAmore GmbH**   uli.franz@dynamore.de

www.dynamore.de

PRIMER	LS-DYNA	FTSS	VisualDoc
LS-OPT	LS-PrePost	LS-TaSC	DYNAFORM
Primer	FEMZIP	GENESIS	Oasys Suite
TOYOTA THUMS		LSTC Dummy & Barrier Models	

The   **Infinite Simulation Systems B.V**   j.mathijssen@infinite.nl
Netherlands

www.infinite.nl

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

Italy	**EnginSoft SpA**		info@enginsoft.it	
	www.enginsoft.it			
	ANSYS	MAGMA	Flowmaster	FORGE
	CADfix	LS-DYNA	Dynaform	Sculptor
	ESAComp	AnyBody	FTI Software	
	AdvantEdge	Straus7	LMS Virtual.Lab	ModeFRONTIER

Russia	**STRELA**		info@dynarussia.com	
	LS-DYNA	LS-TaSC	LS-OPT	LS-PrePost
	LSTC Dummy Models		LSTC Barrier Models	

Sweden	**DYNAmore Nordic**		marcus.redhe@dynamore.se	
	www.dynamore.se		Oasys Suite	
	ANSA	μETA	LS-DYNA	LS-OPT
	LS-PrePost	LS-TaSC	FastFORM	DYNAform
	FormingSuite		LSTC Dummy Models	
			LSTC Barrier Models	

Sweden	**GOMPUTE**	info@gridcore.com
	www.gridcore.se	www.gompute.com
	LS-DYNA Cloud Service	Additional software

Switzerland   **DYNAmoreSwiss GmbH**   info@dynamore.ch

www.dynamore.ch

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

UK   **Ove Arup & Partners**   dyna.sales@arup.com

www.oasys-software.com/dyna   TOYOTA THUMS

LS-DYNA		LS-OPT	LS-PrePost
LS-TaSC	PRIMER	D3PLOT	T/HIS
REPORTER	SHELL	FEMZIP	HYCRASH
DIGIMAT	Simpleware	LSTC Dummy Models	
		LSTC Barrier Models	

Distribution/Consulting			Asia pacific		Distribution/Consulting

China   **ETA – China**   lma@eta.com.cn

www.eta.com/cn

Inventium	VPG	DYNAFORM	NISA
LS-DYNA	LS-OPT	LSTC Dummy Models	LS-PrePost
		LSTC Barrier Models	LS-TaSC

China   **Oasys Ltd. China**   Stephen.zhao@arup.com

www.oasys-software.com/dyna

PRIMER	D3PLOT	HYCRASH	T/HIS REPORTER	SHELL
LS-DYNA		LS-OPT	LSTC Dummy Models	LS-PrePost
DIGIMAT		FEMZIP	LSTC Barrier Models	LS-TaSC

China   **Shanghai Hengstar Technology**   info@hengstar.com

www.hengstar.com

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 Eng. Svce**   info@cadfem.in

www.cadfem.in

ANSYS   VPS   ESAComp   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	Asia Pacific	Distribution/Consulting	

Japan   **CTC**   LS-dyna@ctc-g.co.jp

www.engineering-eye.com

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://jp.fujitsu.com/solutions/hpc/app/lsdyna

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

Japan   **LANCEMORE**   info@lancemore.jp

www.lancemore.jp/index_en.html

Consulting

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

Japan   **Terrabyte**   **English:**

www.terrabyte.co.jp   www.terrabyte.co.jp/english/index.htm

Consulting

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

Distribution/Consulting	Asia Pacific	Distribution/Consulting	

Korea **THEME** wschung@kornet.com

www.lsdyna.co.kr

		Oasys Suite	
LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
LSTC Dummy Models	LSTC Barrier Models	eta/VPG	Planets
eta/DYNAFORM	FormingSuite	Simblow	TrueGRID
JSTAMP/NV	Scan IP	Scan FE	Scan CAD
FEMZIP			

Korea **KOSTECH** young@kostech.co.kr

www.kostech.co.kr

LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM
eta/DYNAFORM	DIGIMAT	Simuform	Simpack
AxStream	TrueGrid	FEMZIP	

Distribution/Consulting	Asia Pacific	Distribution/Consulting

Taiwan **Flotrend**   gary@flotrend.tw

www.flotrend.com.tw

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

Taiwan **APIC**

www.apic.com.tw

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

POD (Penguin Computing on Demand) offers software including LSTC's LS-DYNA
www.penguincomputing.com/services/hpc-cloud

Penguin HPC clusters are optimized for engineering workloads and offer:
- Instant access to an HPC Cloud Cluster
- High performance InfiniBand bare-metal compute
- Free support from HPC experts
- No charges for network transfers
- Cost-effective, pay-per-use billing model
- Secure environment for private data
- Detailed billing reports for user groups and projects

Self Registration Portal – featuring rich--documentation, wiki, FAQ, pricing and more.
https://pod.penguincomputing.com/

POD Software Applications and Libraries (visit site for complete listing)
FEA, CFD and FDTD Modeling
- **LS-DYNA** / LS-PrePost LS-DYNA is an advanced general-purpose multiphysics simulation software package. Its core-competency lie in highly nonlinear transient dynamic finite element analysis (FEA) using explicit time integration. LS-PrePost is an advanced pre and post-processor that is delivered free with LS-DYNA.
- **OpenFoam:** OpenFOAM (Open source Field Operation And Manipulation) is a C++ toolbox for the development of customized numerical solvers, and pre-/post-processing utilities for the solution of continuum mechanics problems, including computational fluid dynamics (CFD).

- **ANSYS HFSS:** ANSYS HFSS software is the industry standard for simulating 3-D full-wave electromagnetic fields. Its gold-standard accuracy, advanced solver and compute technology have made it an essential tool for engineers designing high-frequency and high-speed electronic components.
- **ANSYS Fluent** ANSYS Fluent software contains the broad physical modeling capabilities needed to model flow, turbulence, heat transfer, and reactions for industrial applications.
- **Star-CD** and **Star-CCM+:** STAR-CCM+ is CD-adapco´s newest CFD software product. It uses the well established CFD solver technologies available in STAR-CD, and it employs a new client-server architecture and object oriented user interface to provide a highly integrated and powerful CFD analysis environment to users.
- **Convergent:** CONVERGE is a Computational Fluid Dynamics (CFD) code that completely eliminates the user time needed to generate a mesh through an innovative run-time mesh generation technique.
- **Lumerical:** Simulation tools that implement FDTD algorithms.

**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 to the increase use of LS-DYNA more and more in recent years.

In calculations of optimization, robustness, statistical analysis, larger amount of LS-DYNA license in short term are required.

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

This service is offered to the customers by the additional price to existence on-premises license, which is relatively inexpensive 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.
http://www.credist.co.jp /

PLEXUS CAE
Information Services International-Dentsu, Ltd. (ISID) https://portal.plexusplm.com/plexus-cae/

SCSK Corporation
http://www.scsk.jp/product/keyword/keyword07.html

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

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.

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

## TOYOTA - Total Human Model for Safety – THUMS
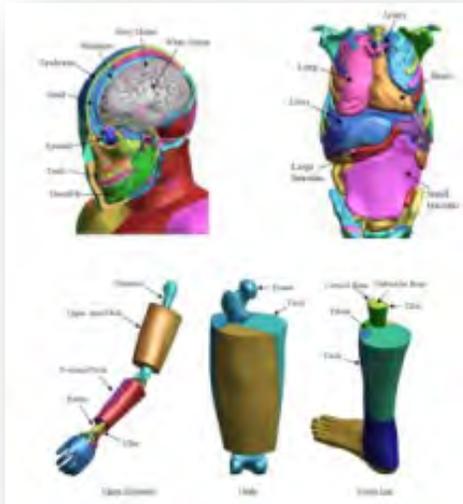
The Total Human Model for Safety, or THUMS®, is a joint development of Toyota Motor Corporation and Toyota Central R&D Labs. Unlike dummy models, which are simplified representation of humans, THUMS represents actual humans in detail, including the outer shape, but also bones, muscles, ligaments, tendons, 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.
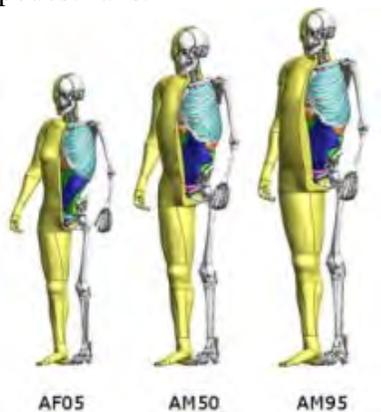
The internal organs were modeled based on high resolution CT-scans.

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.

FACEBOOK

BETA CAE SYSTEMS SA	CADFEM	Cray Inc.
ESI Group	Lenovo	

TWITTER

BETA CAE SYSTEMS SA	Cray Inc.	ESI Group
ETA	CADFEM	Lenovo

LINKEDIN

BETA CAE SYSTEMS SA	CADFEM	Cray Inc.
DYNAmore Nordic	ETA	Oasys

NEWS FEEDS   ETA:

YOUTUBE

YOUTUBE Channel	WebSite URL
BETA CAE SYSTEMS SA	www.beta-cae.gr
CADFEM	www.cadfem.de
Cray Inc.	www.cray.com
ESI Group	www.esi-group.com
ETA	www.eta.com
Lancemore	www.lancemore.jp/index_en.html
Lenovo	