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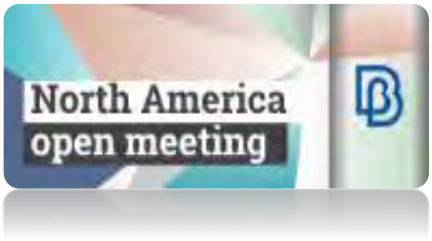
LSTC Livermore Software Technology Corp.

Volume 7, Issue 09, September 2018

www.lstc.com http://dalianfukun.com www.feapublications.com

BETA CAE



Rescale

ESI Group

DYNAmore

LS-DYNA® Advanced CFD Analysis

LS-DYNA Features

- **ICFD: Summary of Recent and Future Developments**
- **Investigating the Post Processing of LS-DYNA® in a Fully Immersive Workflow Environment**

New website: Computational and Multi-scale Group: https://www.lstc-cmmg.org/

FEA Information Engineering Solutions

www.feapublications.com

The focus is engineering technical solutions/information.

FEA Information China Engineering Solutions

www.feainformation.com.cn

Simplified and Traditional Chinese

The focus is engineering technical solutions/information.

LSTC - Livermore Software Technology Corp.

Development of LS-DYNA, LS-PrePost, LS-OPT,
LS-TaSC (Topology), and LSTC's Dummy &
Barrier models for use in various industries.

www.lstc.com

To sign up for the FEA News send an email - subject "subscribe" to yanhua@feainformation.com
To be removed from the FEA News send an email - subject "Remove" to yanhua@feainformation.com

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

Editor and Contact: Yanhua Zhao - yanhua@feainformation.com
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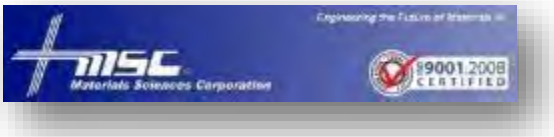
Platinum Particpants



Platinum Particpants

Table of contents

Announcements

October 22nd -- LS-DYNA Indian Users Conference

KAIZENAT Technologies Private Limited(KTPL) holds the 2018 LS-DYNA Indian Users Conference, scheduled, scheduled on the 22nd & 23rd of October, 2018 at Radisson Blu, Bangalore.

The conference will bring value added technical information and training to our customers through the conference event and the training program provided. The instructors for this program are Scientists and Developers of the LS-DYNA Implicit solver**.** **Read more.....**

October 26th -- LS-DYNA China Forum

Shanghai Fangkun Software Technology Ltd. will hold the **3rd LS-DYNA China Forum in Shanghai on October 26, 2018.**

The LS-DYNA China Forum will invite experts from domestic OEMs, auto parts factories, USA, Europe and LSTC to have technical discussions. Topics include but are not limited to simulation of vehicle structure crashworthiness, development and simulation of restraint systems, advanced failure simulation methods, implicit analysis functions in automotive parts applications, and new features and applications of LS-DYNA.

The Forum is organized by Shanghai Fangkun Software Technology Ltd (the master distributor of LS-DYNA in China), and co-organized by Arup-China (Shanghai Dynawe Information Technology Co., Ltd.), ETA-China and Shanghai Hengstar Technology Co., Ltd.

More information: http://www.lsdyna-china.com/

October 31st -- LS-DYNA & JSTAMP Forum 2018

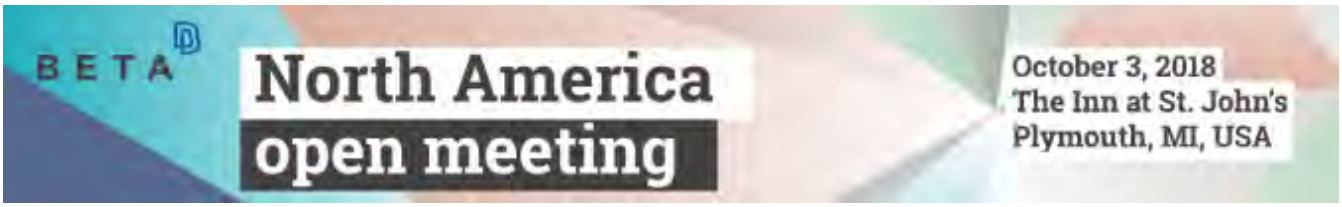
Venue : NAGOYA TOKYU HOTEL

JSOL Corporation holds an annual LS-DYNA & JSTAMP Forum to provide our users a wide range of information including the latest simulation technologies and case studies and also to offer the opportunity for information exchange among our users.

This year the venue of the LS-DYNA & JSTAMP Forum 2018 moves from Tokyo to Nagoya. It will be held at NAGOYA TOKYU HOTEL, on Wednesday 31 October 2018. Our engineers will showcase the latest simulation technologies and poster sessions will be held**.** **More information.....**

Course: **Progressive Composite Damage Modeling in LS-DYNA (MAT162 & Others)**
Offered: in-house and as a web conference.
Information: www.ccm.udel.edu/software/mat162_workshop
Dates: Tues., **Nov.**13, 2018 | 9am-5pm
Phone: (302) 690-4741 | **Email:** bzhaque@udel.edu

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



2018 BETA CAE Systems North America Open Meeting

October 3, 2018 The Inn at St. John's Plymouth, USA

Read from BETA CAE Systems website

BETA CAE Systems International AG, the leading contemporary industry supplier of simulation solutions, and its business partner in North America, BETA CAE Systems USA Inc., have the pleasure to invite you to the 2018 BETA CAE Systems North America Open Meeting. The event will take place on October 3, 2018 in The Inn at St. John's, Plymouth, MI.

During this event you will have the opportunity to be updated on the latest developments and new software products, along with real case applications of our software, on various CAE disciplines and industries.

Technical discussions & demonstrations will offer you the opportunity to discuss with our engineers the software features, their application, and the future developments. A team of CAE experts from BETA CAE Systems will be pleased to meet you in person and exchange knowledge, experience and visions.

We expend our appreciation to our guest speakers who compile this year a unique constellation of application cases and success stories.

Don't miss the opportunity and register today. Registration will be open until September 26th.

There is no participation fee for the event.
The attire will be business casual.
The event is organized and hosted by BETA CAE Systems USA Inc.

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

d3VIEW is a data to decision platform that provides out-of-the box data extraction, transformation and interactive visualizations.

Using d3VIEW, you can visualize, mine and analyze the data quickly to enable faster and better decisions.

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

HPC Interactions - Using the HPC application, you can submit and track simulation or non-simulation jobs that require compute resources…

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

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

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

Design of Experiments (DOE) Data Visualizer - Viewing data from your DOE runs can be challenging when running simulations on the cloud or on-premise HPC system..

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

Author: Christian Frech christian.frech@dynamore.de

LS-DYNA Forum 2018 Final Agenda Released!

High quality presentations and excellent workshops at the LS-DYNA Forum 2018

The agenda of the 15th German LS-DYNA Forum offers more than 100 technical presentations by users from various industries, who will share their experiences with LS-DYNA and LS-OPT. Moreover, software developers from LSTC and DYNAmore provide insight into the potential applications of their latest implementations. The Forum is rounded off with nine workshops covering popular topics.

For the growing number of LS-DYNA users, the forum is the ideal opportunity to inform themselves about current developments and to exchange information with other users from other fields.

We are looking forward to your registration and to welcoming you in Bamberg.

Keynote presentations simultaneously translated

A total of ten keynote presentations by renowned speakers from industry and research will be simultaneously translated into English. Many presentations in the sessions can also be given in English.

Exhibiting and sponsoring

In the accompanying exhibition, numerous hardware and software manufacturers offer an insight into the latest news and trends around

LS-DYNA. If you want to contribute, please request additional exhibitor and sponsoring information.

Conference languages

German and English

General Conference Information

Still looking for a place to stay? Please find hotel advice and general information about the 15th German LS-DYNA Forum here.

Accompanying Seminars

In addition to the Forum, we offer 8 English-spoken seminars on LS-DYNA and LS-OPT. Conference participants receive a 10% discount on the seminar fees. Please note that the seminars need to be booked separately. Find more information here and in the final agenda.

Venue

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

Registration

Please use our registration form or our website at www.dynamore.de/registration2018-e

Participant fees

Industry: 600 Euro
Academic: 430 Euro

Contact

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D-70565 Stuttgart, Germany
Tel.+49 (0) 7 11 - 45 96 00 - 0
E-Mail: forum@dynamore.de
www.dynamore.de

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

Lightweight Manufacturing for Electric Vehicle : Aluminum Welding & Assembly Challenges Virtual Manufacturing

Date: 9 Oct 2018 Worldwide Saskia Hammer

Making the Vehicle as light as possible - Light Materials are the gateway to improving the car's range and subsequently increasing the market adoption of Electric vehicles. Manufacturers have largely relied on Aluminum to make their cars lighter therefor offsetting the weight of the battery pack and reducing the overall weight. While this material has many advantages, the distortion of Aluminum during welding genarate many issues due to Aluminum's high coefficient of expansion ratios.

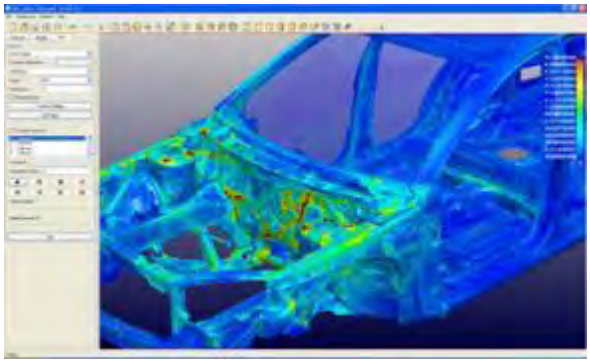
In this webinar we will discuss how virtual welding simulation allows to minimize the Aluminum welding distortion by optimizing the clamping system, welding processes and sequences. Consequently reducing the try-out and production costs and reworking requirements - ultimately generating higher profitability.

Go to website to read….

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

PreSys

PreSys is an engineering simulation solution for the development of finite element analysis models. It offers an intuitive user interface with many streamlined functions, allowing fewer operation steps with a minimum amount of data entry along the way. Using PreSys, the user can analyze product designs, view simulation results and analyze/predict how the product will perform in a given circumstance.



PreSys works the way you do.
The PreSys interface is fully customizable to suit user-specific needs. Also, a model explorer feature provides streamlined data navigation.

Menus, toolbars & many other user interface features can be customized by the user to streamline the guided user interface.

Developed by the leader in the creation & implementation of new CAE tools & methodology, PreSys is ETA's 4th generation Pre/Post Processor. It delivers the capability to handle finite element modeling with ease.

Why PreSys?

ETA's PreSys™ is a solver and CAD-neutral Finite Element modeling and analysis solution. A price/performance leader, the tool delivers precise modeling results with advanced graphics capabilities. With fewer steps, a customizable interface, streamlined functions and scripting access, the user can simulate and analyze designs quicker than ever. PreSys™ also offers vertical application toolsets which drill-down to application-specific requirements, including drop testing and fluid-structure interaction analysis.

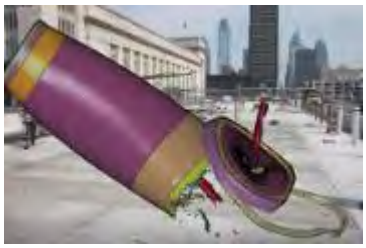
FEA Not To Miss, is a weekly internet blog on helpful videos, tutorials and other Not To Miss important internet postings. Plus, a monthly email blog.

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

Postings every Monday on what you have missed

www.feantm.com

09/10/2018 OH NO! That can be used for coffee and there it goes - splat! Very, very, sad but we will just go to my coffeee shop and get us all new vanilla mocha coffee. Even for George Laird, Predictive Engineering!



LS-DYNA Analysis -

LS-DYNA analysis of plastic, elastomer and foam structures. A variety, from nylon-12 plastic watch bands, ... and SAN drink cups, and others.

09/03/2018 Driving to my coffee shop a pesky thing hit my windshield - BUT, luckily my coffee didn't spill and while watching that crack creep slowly over my windshield, I just relaxed and drank my coffee. Not! I drank my coffee and cursed!

Automotive laminated glass impact simulation

Automotive laminated glass impact simulation by rigid ball using LS-DYNA solver.
Material properties for PVB layer and Glass are defined.

www.FEAntm.com **feaanswer@aol.com**

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

Shanghai Hengstar Technology

Sub-distributor in China, for FEA and CAE needs for engineers, professors, students, consultants.

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

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

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

Sales & Consulting - Besides solver specific software sales, distribution and support activities, Shanghai Hengstar offers associated training and consulting services to the Chinese automotive market since April 1st, 2013

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

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

hongsheng@hengstar.com - Shanghai Hengstar Technology Co., Ltd
http://www.hengstar.com
Enhu Technology Co., Ltd
http://www.enhu.com

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

Designers can avoid the challenges of trial and error. JSTAMP provides an adequate result and reduces the lead time and cost of tool design.

JSTAMP Functions Address various tasks in tool shop

JSTAMP represents the Sheet metal forming process virtually by numerical simulation. Users can examine the simulation result, output it to CAD, and directly use the CAD as a countermeasure by using JSTAMP.

JSTAMP provides comprehensive support throughout the design process from the first trial to the final stage. The feature for addressing complicated process stages, low formability materials, and latest technologies covers various tasks in the Sheet metal forming process.

EVENTS:

LS-DYNA & JSTAMP Forum 2018
Dates : Oct..31, 2018
Venue : NAGOYA TOKYU HOTEL

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J-OCTA Users Conference 2018
Dates : Nov..21, 2018
Venue : Tokyo Conference Center SHINAG…

Go to website ……

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

LS-DYNA® Advanced CFD Analysis

The LS-DYNA® Incompressible CFD (ICFD) tool combines state-of-the-art numerical techniques that allow robust, scalable, and accurate simulations of fluid flows. Its ability to couple with the structural, thermal, and Discrete Element Method solvers make it an excellent option for multi-physics problems.

Applications:

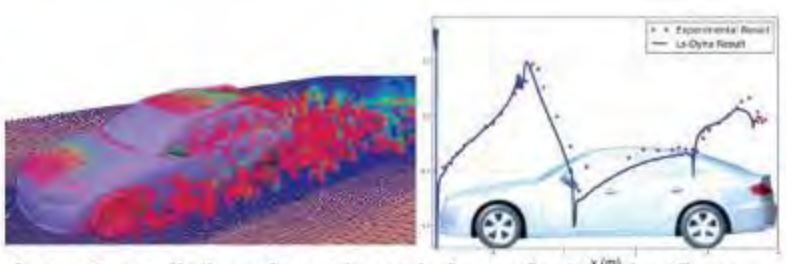
- Ground vehicle aerodynamics
- Cooling analysis
- Resin Transfer Molding for manufacturing of composites
- Turbomachinery
- Fluid-Structure interaction in the biomedical field

Features:

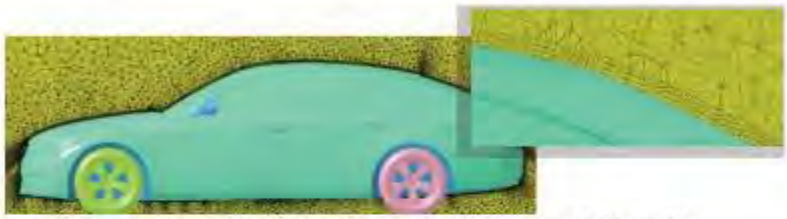
- FEM based
- Large library of RANS and LES turbulence models
- Automatic meshing and re-meshing
- Free surface flow
- Non-Newtonian flows
- Non-inertial reference frames
- Porous media models

Website:
www.lstc.com/applications/icfd

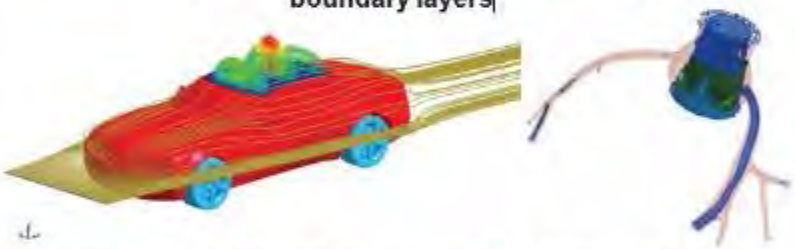
YouTube:
www.youtube.com/user/980LsDyna



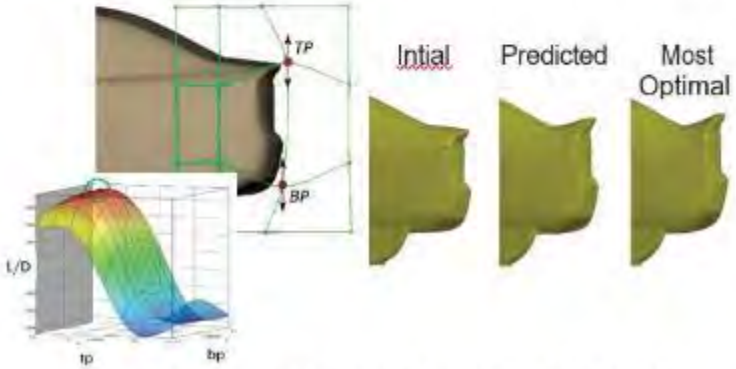
Accurate prediction of aerodynamic forces for turbulent flows



Fast mesh generation and automatic re-meshing with boundary layers

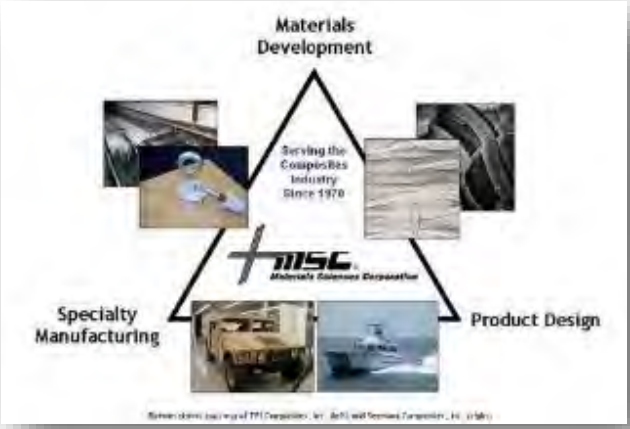


Fluid-Structure Interaction analysis for a large number of applications including automotive and bio-medical industries



Shape optimization using ANSA® and LS-Opt®

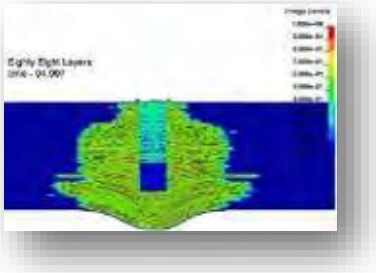
Providing engineering services to the composites industry since 1970. During this time, we have participated in numerous programs that demonstrate our ability to: perform advanced composite design, analysis and testing; provide overall program management; work in a team environment; and transition new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



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

Course Offered - Progressive Composite Damage Modeling in LS-DYNA (MAT162 & Others)
Bazle Z. (Gama) Haque, Ph.D. - Sr. Scientist, Univ. of Delaware Ctr. for Composite Materials (UD-CCM)

2018 Workshops: Tuesday, **November** 13, 2018 | 9am-5pm



Simulation Movie

Penetration and Perforation of Moderately Thick Composites

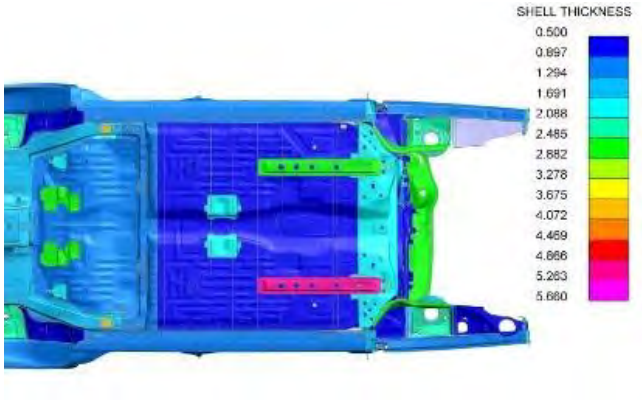
Examples are located at www.ccm.udel.edu/software/mat162/examples /
Example 1: Sphere Impact on a Composite Laminate
Example 2: Sphere Impact on a Perfectly Clamped Composite Plate
Example 3: Sphere Impact on Elliptical Carbon/Epoxy Tube
High Velocity Impact of Square Plate using MAT161/162
www.youtube.com/watch?v=NgjncjfLKGw

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

Oasys Post-Processing V15 Update

Jac Cross, Arup Associate and developer of the Oasys Post Processing software presents this free webinar, which describes and demonstrates some of the new and updated features in the latest Oasys D3PLOT, T/HIS, and REPORTER v15.0 release.

Please click below to view the webinar recording:
VIEW RECORDING



Oasys 15 Highlights New features in version 15

The following bullet points summarise the key updates which have been implemented and are now available in each of our Oasys version 15 programs.

This version of Oasys PRIMER includes:

- Support for LS-DYNA R10 keywords
- Improved model read and write speed with about 60% and 70% of the time to read and write respectively compared to V14
- A new link capability is integrated into PRIMER to use the post-processing tools D3PLOT & T/HIS
- A new combined Dummy Positioning and Seatsquash tool to automatically create simulation based LS-DYNA positioning models
- New options for the orientation and alignment of spotwelds created in PRIMER
- A new mechanism type “Coupler” has been added to handle rotation against rotation or rotation against translation or translation against translation
- Improved ability to read more ANSA comments and convert them into PRIMER mechanisms

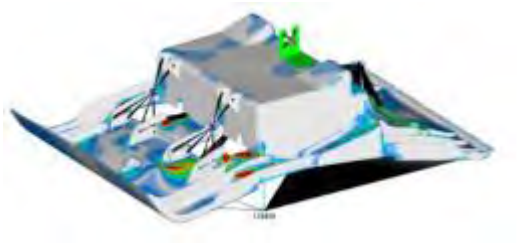
This version of Oasys D3PLOT includes:

- Quick Find feature to search for D3PLOT functions, menus and preferences
- PDF tutorials available directly through the help menu
- PRIMER/D3PLOT integration with synchronized viewing and linked functionality
- In Link mode T/HIS can be undocked and placed anywhere on the screen
- Greatly improved support for material extra variables
- Data plotting in material axes coordinate systems
- Enhanced support for solid elements with multiple integration points

More New Features in version 15

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

Vibration Analysis Consulting Services at Predictive Engineering

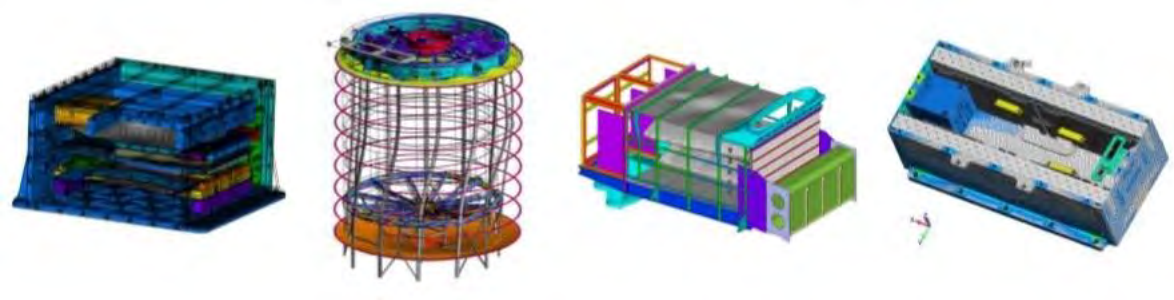


Analysis: FEA

Objective: A quick graphical overview is presented of our +20 years in the idealization of structures for finite element analysis (FEA) vibration analysis. Our goal is to keep our clients' structures from experiencing disastrous resonance during testing and in service. As part of our work, we have done User Guides on the main suite of linear dynamics from normal modes, modal frequency analysis (sine sweep), response spectrum analysis (seismic and shock) and PSD.

Besides linear dynamics, we have experience in nonlinear transient dynamics using LS-DYNA where the nonlinearity is low but the vibration response is deadly. Thru the years we have gained experience using a variety of specifications for wind turbines (IEC 61400), seismic analysis of nuclear waste storage vessels (ASCE 4-98, ASCE 7-02 or IBC) and general vibration analysis of electronic equipment and general structures using MIL-STD-810E, -810F, MIL-STD-167, RTCA DO-160F and UBC.

We don't want to bore the reader, so only a subset of our work will be presented and then burned into a video for publication. What we hope that one will take away from reading this case study is that our experience has been tested and validated in hundreds of simulations and when you work with one of our engineers, you are leveraging hard-won industry experience that is uniquely qualified to ensure that your structure will only vibrate as you want it to vibrate.



For more detail information

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

Higher Performance for Higher Ed: Rescale for Academia, Research and Government

Gabriel Broner

Summary

Rescale offers a platform that enables government, research and academic institutions to utilize and leverage high performance computing on-premise, in the cloud and across multiple HPC centers. Users are presented with a single unified portal to submit jobs to systems on-premise, to multiple cloud providers or across HPC centers. Administrators are able to manage users, permissions, resources and budgets across the multiple environments.

Key benefits

Multi-cloud and multi-center HPC enables a way to rethink high performance computing for government, research and academia. HPC used to be limited to running applications at a given center, with one architecture to serve all needs. This meant at times more compute power (and more cost) than needed and other times less compute power than ideal. One center with a fixed size system needs to manage the inevitable peaks and valleys in the workload, leading to periods of low utilization with unused resources, and periods of high utilization with long queues to access the system. A multi-center multi-cloud environment enables to better match different architectures for the jobs, and to better manage the variability of the workload.

Ride the technology curve

Rescale enables the possibility to have immediate access to the latest architectures available without having to wait for procuring, installing and provisioning systems in house. Rescale enables to run each job at a different center or cloud provider match the job with the best possible architecture.

Simple and powerful

For people with HPC experience and comfort with scripting languages, Rescale offers a single unified powerful CLI/API which enables to submit jobs to any of the architectures across multiple HPC centers and cloud providers. For newer or casual users, Rescale offers a simple GUI which enables to select the workflow type and applications to run.

Read more detail info….

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

CAE consulting - Software selection, CAE software sale & customer support , initial launch-up support, periodic on-site support

Engineering Services - Timely solutions, rapid problem set up, expert analysis - all with our Engineering Services. Terrabyte can provide you with a complete solution to your problem; can provide you all the tools for you to obtain the solution, or offer any intermediate level of support and software.

FE analysis

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

CFD analysis

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

EM analysis

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

Metal sheet

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

Pre/ Post

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

Biomechanics

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

仿坤软件 LS-DYNA China

Shanghai Fangkun Software Technology Ltd

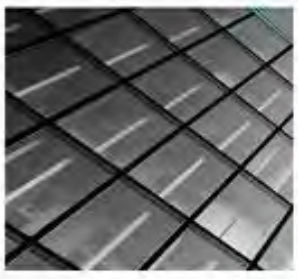
LS-DYNA Implicit Class

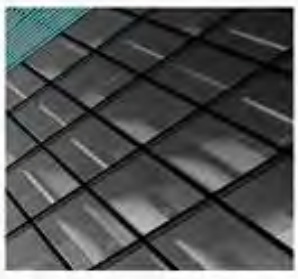
LS-DYNA is historically known as the world's best explicit analysis code or the leader in the finite element analysis of nonlinear transient events. During the last ten years, LSTC (the manufacturer of LS-DYNA) has heavily invested in the development of its implicit analysis capabilities. Today, LS-DYNA can seamlessly handle complex, nonlinear analyses from static (implicit) to transient (explicit). Predictive Engineering has developed training course materials that covers both the implicit and explicit sides of the code.

Dr. George Laird, with more than 15 years of LS-DYNA / FEMAP / CFD's industrial application experience, with mechanical engineering (fracture and fatigue) Ph.D.Bit. Chief Engineer of Mechanical Prediction Engineering and CAX Applications, published 40 number of papers on wear, fracture mechanics and finite element analysis.

Organized and invited by Shanghai Fangkun Software Technology Ltd, China Master distributor of LS-DYNA, Dr. George Laird taught a course in Shanghai, China to 27 students from industry and academia. This three day course was focused on LS-DYNA's implicit analysis capabilities from linear, elastic static stress analysis to static nonlinear analysis to fully, transient nonlinear analysis. The course finishes with a half-day training on the linear dynamics capabilites of LS-DYNA.

- **Website**: http://www.lsdyna-china.com
- **Sales Email**: sales@lsdyna-china.com
- **Technical support** Email: support@lsdyna-china.com
- **Customer Service Number**: 400 853 3856 021-61261195
- **Address**: Room No. 3019, 3 Floor, No.126 YuDe Road,Xuhui District,Shanghai,China 200030





mv@feainformation.com **Courtesy and copyright to SAAB Solutions Website (excerpt)**

Gripen E/F is developed to counter and defeat the most advanced threats in a modern battlespace and to continously evolve in order to keep up wtih new challenges. We have built an intelligent fighter system that rapidly embraces new technology and tactics in a way that will always keep us ahead. That's why with Gripen E/F, you are forever ahead.

Gripen E/F. Forever ahead - Defeat any threat. Anywhere

In the modern battlefield, fighters will have to act in high-threat environments such as contested air space and handle Integrated Air Defence Systems. Gripen E/F carries a variety of both active and passive measures to disrupt enemy efforts and protect itself and other friendly units. Its advanced electronic warfare system, similar to an electronic shield, allows disruption of the enemy's ability to function effectively. This can be used either to assist in destruction of enemy assets or simply to reduce the enemy's understanding and ability to react. All this while ensuring mission success, using the latest weaponry and countermeasures. This freedom of action allows Gripen E/F pilots to defeat any threat – anywhere, and return home safe.

See the unseen. Before being seen

The ability to attack or assess opposition at range is a key feature in Gripen E/F. Gripen utilizes all available data in the battle cloud – whether coming from Gripen fighters or other air, land or sea-based units, and fuses it locally on every platform but we are also fusing globally between fighters. The result: We see the unseen. Gripen E/F reduces its likelihood of being detected by relying on its passive sensors, or through active jamming. This means that weapons can be used either beyond the point at which opposing forces can respond or without them ever realizing Gripen was there.

Be in control. Intuitively

When at the peak of a complex mission, the human brain can only handle a certain number of inputs at once. Gripen E/F achieves the optimal balance between the pilot's and the fighter's decision space, letting fighter intelligence take on a larger role. Gripen E/F's fighter intelligence has the capability to work autonomously on several areas simultaneously, and provides the pilot with suggestions. Suggestions ranging from anything between weapon selection and full maneuvering of the fighter. It shares and displays the right tactical information, at the right moment giving an optimised battlespace overview. This allows the Gripen pilot to be in control – intuitively

mv@feainformation.com **Courtesy of FCA website (Excerpt)**

Ram Launches New 2018 Harvest Edition Chassis Cab Trucks

- Ram brand supports American farmers with Class 3, 4 and 5 medium-duty Chassis Cab trucks designed specifically for the agriculture industry
- 2018 Ram Chassis Cab Harvest Edition available in Case IH Red, New Holland Blue, Bright White and Brilliant Black
- Ram Harvest Edition combines work capability, technology and premium appearance

September 11, 2018 , Auburn Hills, Mich. - Ram is celebrating its agricultural bonds with a new edition designed specifically for America's farm families.

The 2018 Ram Chassis Cab Harvest Edition is an agricultural market-specific truck and is visually distinguished by two limited-availability colors: Case IH Red and New Holland Blue (Brilliant Black and Bright White also available).

"Addressing a direct request from farmers, Ram is the only manufacturer to offer Chassis Cab commercial trucks in colors that match two of the most popular lines of farm equipment in the nation," said Jim Morrison, Head of Ram Brand – FCA North America. "The Ram Harvest Edition Chassis Cab delivers high capability and gives farming families a way to show their agricultural brand loyalty."

In August 2017, Ram launched 1500, 2500 and 3500 pickup versions of the Harvest Edition.

Case IH and New Holland farm tractors and other agricultural equipment are manufactured by subsidiaries of CNH Industrial. CNH Industrial N.V. shares a common ancestry with Fiat Chrysler Automobiles N.V.

The Harvest Edition will be available across the Ram 3500 (SRW and DRW), 4500 and 5500 (DRW, 60-inch and 80-inch cab-to-axle lengths) Chassis Cab lineup, in all four-door Crew Cab and two-door Regular Cab configurations. Optional powertrains include 4x4 versions of the 6.4-liter HEMI® V-8 or 6.7-liter Cummins Turbo Diesel.

Harvest Edition Chassis Cab trucks are loaded with functional features that are designed to work, including large front tow hooks, a transfer-case skid plate, side steps, fog lamps and a rear back-up camera.

The Harvest Edition comes standard with technology farmers are looking for, including an optional 8.4-inch Uconnect 4C touchscreen radio with navigation, 4G Wi-Fi capability, Apple CarPlay and Android Auto, which gives buyers seamless connectivity, fingertip access to smartphone map mirroring, and Sirius Weather with up-to-the minute weather maps and forecasts customizable to any location in the nation. A large 7-inch reconfigurable cluster allows operators to monitor selected systems, such as filter life, engine hours and operating temperatures. The interior also includes an auto-dimming rearview mirror, leather-wrapped steering wheel, steering-wheel audio controls and power-sliding rear window (Crew Cab).

The Harvest Edition features a premium exterior appearance packed with chrome highlights, including the grille, side-steps, door handles and mirrors. Polished aluminum wheels enhance all four corners (18-inch on 3500 models, 19.5-inch on 4500 and 5500 models).

The Harvest package also includes body-color (or Bright Silver) wheel flares and upper fascia (3500). In addition to Case Red and New Holland Blue, Harvest Edition Ram trucks are also available in Bright White or Brilliant Black.
…

About Ram Truck and America's Farmers
Farming continues to be a part of the foundation on which Ram's success is built. Ram stands by its commitment to the farm community, supporting the future of farming and the development of the next generation of farmers and future leaders in agriculture.

From the Ram 1500 to the Ram 5500 Chassis Cab, Ram Commercial offers a range of products that appeal to both ag business and farming families.

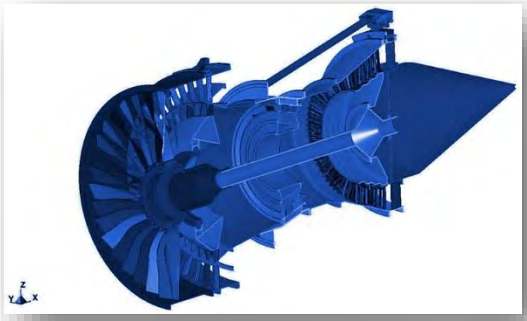
Ram also provides various affiliate reward programs supporting American agricultural customers, including Case IH and New Holland equipment purchasers, National FFA Organization members, Farmers in America farm owners and Dairy Farmers of America members.

About Ram Certified Agriculture Dealership Program: Agriculture is meaningful to many truck customers and through the Ram Certified Agriculture Dealership (RCAD) program, Ram Truck aims to extend its commitment to the local agricultural community by equipping Ram Truck dealers to properly serve local farmers and ranchers.

RCAD is designed to educate dealership staff and requires that they complete a competency-based grassroots training curriculum, which is dedicated to helping Ram truck dealers gain a greater awareness and address the needs of the farming and ranching communities.

Article credit: Katherine Kendig, NCSA (Article on NCSA Website)

Facilitating FEA: NCSA collaborates with Rolls-Royce, Livermore Software Technology Corporation, and Cray to scale up implicit finite element analysis



The collaboration's improvements are applied to whole-engine FEA models.

NCSA previously worked with Cray and Rolls-Royce, an NCSA partner for over a decade, to help LSTC scale up explicit finite element analysis (FEA) in LS-DYNA, LSTC's "gold-standard" multiphysics computer-aided engineering software

Rolls-Royce has an engineering problem that needs a large-scale software solution. Solving that problem, however, requires a multi-team effort: Illinois' National Center for Supercomputing Applications (NCSA) delivers the scale courtesy of Blue Waters, its Cray® XC™ supercomputer; Livermore Software Technology Corporation (LSTC) provides the software, LS-DYNA; and Cray contributes additional expertise to help ensure the software setup is optimal for the machine. By working together, these four players are creating a wide-reaching solution that no single player could achieve alone. As the common denominator among these disparate groups, NCSA is helping to facilitate the collaboration.

NCSA has a long history of cultivating strong partnerships across industry, academia, and governmental organizations to accelerate innovation in high-performance computing (HPC) applications. NCSA previously worked with Cray and Rolls-Royce, an NCSA partner for over a decade, to help LSTC scale up explicit finite element analysis (FEA) in LS-DYNA, LSTC's "gold-standard" multiphysics computer-aided engineering software. That initial collaboration, starting in 2013, scaled explicit FEA up to 16,382 cores on Blue Waters—a world record for a commercial engineering code at that time. Seid Koric, Technical Assistant Director of NCSA, Research Professor in Mechanical Science and Engineering and NCSA PI on the project, notes that NCSA provided "the only place in the world with enough computing cores, memory, and expertise to run those experiments, and a mature industrial program partners could trust to run the tests."

Work on explicit FEA concluded in 2014, but when Rolls-Royce brought another challenge to the table in 2017, this time requiring improvements to implicit FEA, the collaboration was reignited. Rolls-Royce uses implicit FEA to model thermal-mechanical relationships, or the effects of heat on the structure of gas turbine engines used in commercial airplanes.

These simulations decrease the need for expensive and time-consuming physical tests, but in order to do so, they need to be high-fidelity, with meaningful predictive capabilities.

Finite element models become more predictive as the elements becomes smaller and more numerous. "When analyzing complex geometries, you need a finer mesh for high-fidelity models," says Erman Guleryuz, a Research Scientist with NCSA's Modeling and Simulation group who works on the project. But with that higher fidelity comes greater computational needs: the memory footprint and CPU count increase with model size.

Cue the interorganizational teamwork. Drawing on real-life models from Rolls-Royce and technical consulting from Cray, NCSA and LSTC optimized LS-DYNA to reduce the memory footprint of running high-fidelity models and improve the software's performance and scalability. Their work was guided by Koric's prior groundbreaking explorations into scaling implicit FEA, which earned him the 2017 HPCWire Editors' Choice Award for Top .

Achievement in Supercomputing. In the first year of the collaboration, with Blue Waters as their testing ground, the four organizations' hard work managed to double the solver's ability to solve large models, from 50 million degrees of freedom to over 100 million—a record-breaking number. In the second year, which will be also supported by a new computational allocation from the U.S. Department of Energy, they plan to shatter that ceiling and achieve 200 million degrees of freedom.

The project's success will allow Rolls-Royce to run better, more predictive models at a lower cost. Moreover, LS-DYNA will be able to offer users from across the manufacturing spectrum the ability to scale up their own simulations. "By improving the algorithm and finding bottlenecks, we are raising the level of performance for everyone, from users on laptops to HPC clusters," Koric states. Guleryuz adds that this project is special because of the collaborative model in play: "None of these parties could create this level of impact on their own." But by joining together, they're breaking records and bringing benefit to the community

LS-OPT® for Design Optimization and Parameter Identification

LS-OPT® is a simulation-based optimization tool which enables the solution of complex, multi-stage design processes or regression/classification tasks. LS-OPT® interfaces with LS-DYNA® (e.g. result extraction) and also supports popular pre- and post-processors, e.g. for shape optimization.
For visualization of results, graphical pre- and post-processing tools are included in the package

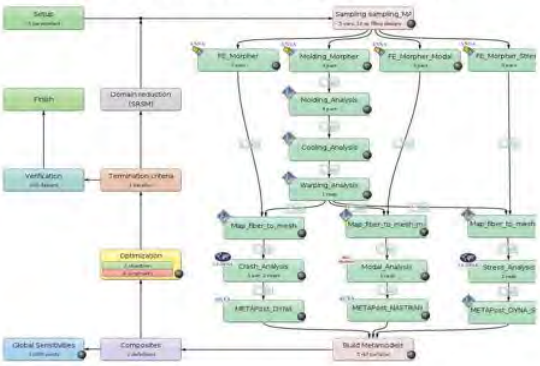
Tasks:

* Multidisciplinary and Multi-Objective Optimization (MDO/MOO)
* Discrete and Mixed Optimization
* Global Optimization
* Robust and/or Reliability-based Optimization
* LS-DYNA® statistics, including outlier analysis and LS-PrePost® support
* Parameter Identification with matching of noisy, steep and hysteretic curves
* Full-field calibration using Digital Image Correlation
* Uncertainty Quantification
* Sensitivity Analysis

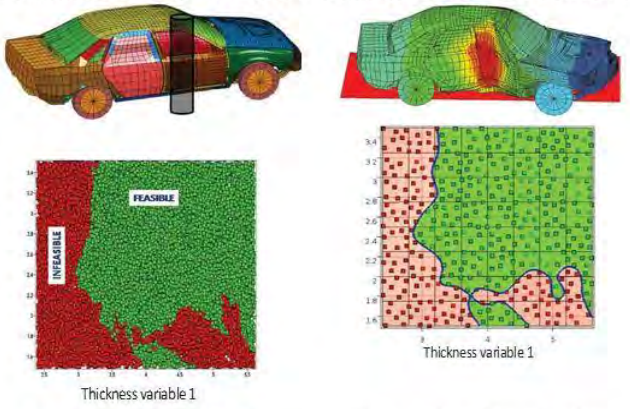
Solvers and Methods:

* Sequential Response Surface Method
* Genetic Algorithm and Efficient Global Optimization (EGO)
* NSGA-II algorithm for MOO
* Monte Carlo methods (direct and metamodel- based)
* Outlier Analysis
* Support Vector Machines (SVMs) for Statistical Classification
* Taguchi Method
* Curve similarity measures: Dynamic Time Warping (DTW), Partial Curve Mapping and Discrete Fréchet
* Experimental Design: Space-filling, Full or Fractional Factorial, Latin Hypercube
* Metamodels: Neural networks, Polynomials, Kriging and Support Vector Regression
* Network-based job scheduling

LS-OPT GUI Defining Process Flow



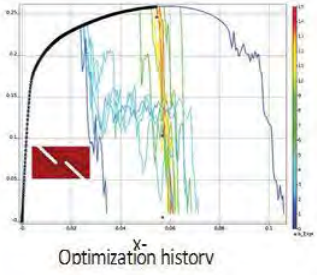
Parametric Vehicle Side Intrusion Using a Classifier



Actual (LS-DYNA)

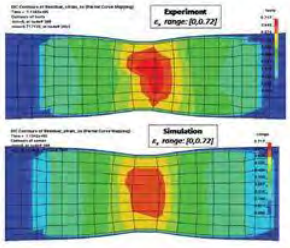
Classifier (blue outline)

Material Parameter Identification



GISSMO model Callibration

(DTW)



Digital Image Correlation

(Full Field)

Contact LSTC

sales@lstc.com

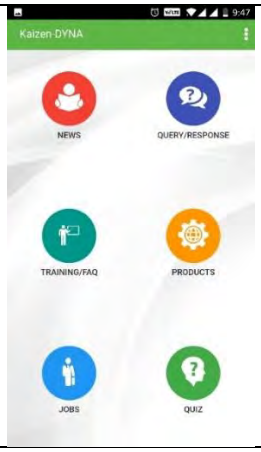
www.lstc.com

Kaizenat Technologies Pvt Ltd (KTPL)

A leading LSDYNA support partner for the LS DYNA users.
KTPL has been launching various applications to help LS-DYNA users.

Kaizen-DYNA

- Mobile App (Android & IOS)
- And Web App
- LS-DYNA Knowledge Platform
- CAE International News
- Queries & Answers by Expert
- Training & FAQ materials
- Innovative Products
- QUIZ -> LS-DYNA score
- LS-DYNA jobs/opportunities



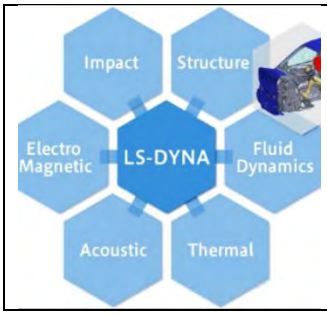
dynaLUPA

LICENSE UTILIZATION & PREDICTIVE ANALYTICS

- Total Number of licenses used
- Comparison of YOY, MOM usage,
- Number of hours delayed/wasted in queue
- Justifying number of license requirement
- Forecast usage pattern based on current usage pattern
- User with highest utilization in a department
- User with lowest utilization in a department
- Track license usage/user & Forecast and allocate

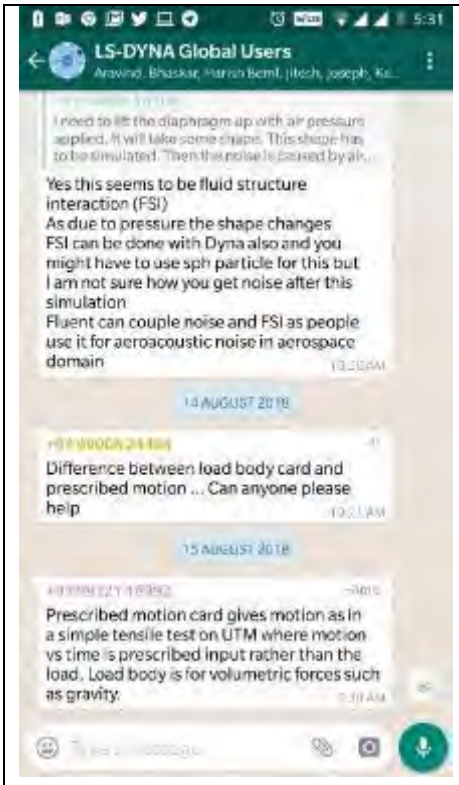
Contact support@kaizenat.com for more information

Apps For LS-DYNA Showcase

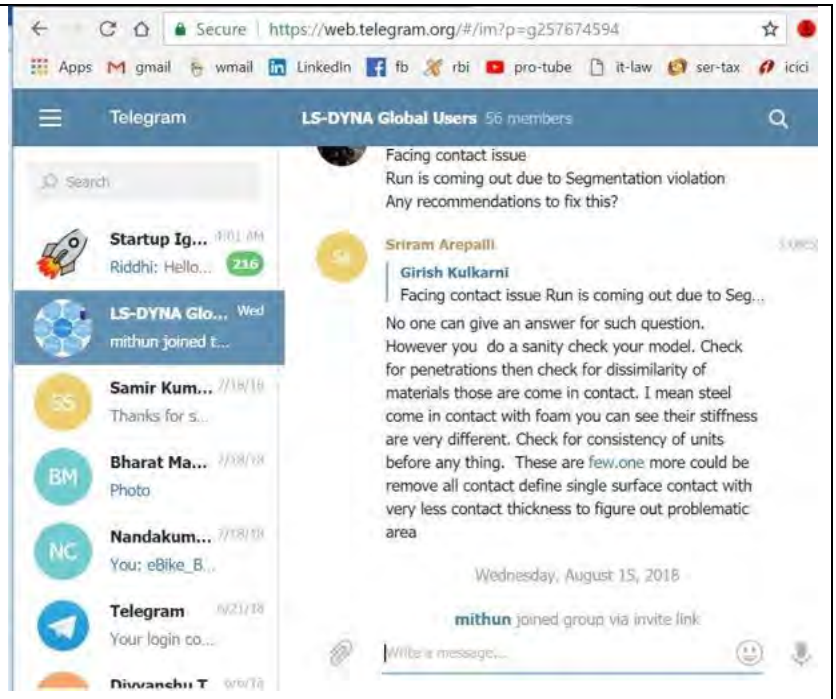


LS-DYNA Global Users Group
➔ LS-DYNA queries & instant responses

- Kaizenat started LS-DYNA Global users group in instant messengers like whatsapp & telegram.
- This really helps in getting answer for their queries instantly since people are more active on such applications now a days compared emails
- Users also can use webapp if required to use using computers.



Whatsapp



Telgram webapp

Whatsapp group is full within few days. Please do join the telegram group (LS-DYNA Global Users) using below link & enjoy the INSTANT answers - https://t.me/joinchat/JN3HNg9bzWLuAx5gu6qGRA Please feel free to write to support@kaizenat.com is you have any queries

LS-DYNA Distributor Event & Showcase

KAIZENAT Technologies Private Limited(KTPL) sells & supports LSTC products with high quality LS-DYNA support for the Indian Industry. We are pleased to invite you to the 2018 LS-DYNA Indian Users Conference, scheduled on the 22nd & 23rd of October, 2018 at Radisson Blu, Bangalore.

The conference will bring value added technical information and training to our customers through the conference event and the training program provided. The instructors for this program are Scientists and Developers of the LS-DYNA Implicit solver.

For the complete agenda with times visit:
www.kaizenat.com/conference

Day 1 – October 22, 2018 Start 9:00

- Registration
- Welcome and Introduction
- Keynote Presentation
- Tea Break
- Recent Developments in LS-DYNA – Satish Pathy, LSTC
- LS-DYNA Implicit Solver – Status and outlook – Thomas Borrvall, DYNAmore
- Lunch Break
- Benchmarking study to evaluate implicit load cases – Autoliv India Pvt Ltd
- LS-DYNA Implicit solver for Quasi Static Loading – Grupo Antolin India Pvt Ltd
- Tea Break
- Training – LS-DYNA Implicit Solver (Introduction)
- Award Distribution & Vote of Thanks

Day 2 – October 23, 2018

- Training - LS-DYNA Implicit Solver

Conference Highlights

* Recent Developments at LSTC
* LS-DYNA's new Implicit solver
* 2 High Quality Technical Papers on LS-DYNA Implicit Solver
* Training by LSTC experts
* Networking with Peers

Conference Venue:

Hotel Radisson Blu
Outer Ring Road, Marathahalli
Bangalore, Karnataka, India

LS-DYNA Indian Users Conference & Training
www.kaizenat.com/conference
Events Team - Kaizenat Technologies Pvt. Ltd.
Contact: support@kaizenat.com
- ***Jithesh:*** ***+91 80560 24435***
- ***Nandakumar: + 91 95910 73900***

Conference Sponsors

Integrated Process-Property Simulation Framework for Compression Molded Discontinuous Long Fiber Composites using DYNAMold® and LS-DYNA®

Gaurav Nilakantan, PhD
Research Scientist
Teledyne Scientific & Imaging
Thousand Oaks, CA, USA
gaurav.nilakantan@teledyne.com

Generating realistic virtual microstructures of compression-molded discontinuous long fiber composites is very challenging because of the random fiber orientations and spatial distributions as well as the fiber waviness. Accurately capturing these microstructural facets is important for accurately predicting the local stresses and strains and in turn the overall material performance.

In this work, we present a novel framework to generate realistic virtual microstructures of discontinuous long fiber composites that are processed via compression molding of bulk molding compound (BMC) and sheet molding compound (SMC) such as chopped prepreg (either unidirectional or woven) and chopped impregnated tows. Such materials typically comprise carbon or glass fiber in a thermoset or thermoplastic matrix. Our modeling approach is based on the Binary Model, which is an embedded-element method wherein the "slave" tows are represented by 1D elements (e.g. truss, beam) and the "master" effective medium is represented by 3D elements (e.g. tet, hex). The effective medium primarily represents the matrix material (i.e. resin) as well as some contributions from the other constituent phases. The coupling is done in LS-DYNA using *CBIS.

We begin my mimicking (simulating) the process by which a charge of BMC is manually deposited into a mold cavity and/or the process by which a SMC roll is created (i.e. individual chips falling onto a moving conveyor belt). An in-house preprocessor DYNAMold is used to generate the initial BMC charge of chopped prepreg or chopped impregnated tows, wherein each chip or tow is explicitly modeled using the Binary Model approach. These chips then fall under gravity and settle into their final positions and orientations within the mold cavity, with contact defined between all chips. This creates a very realistic representation of the initial charge (see Figure 1). A compression molding simulation is then executed on this charge, with contact defined between all the chips and the mold fixture. This results in chip deformation and corresponding fiber centerline waviness also observed in experimental micrographs of the material microstructure. We are not explicitly modeling the resin flow and curing, but instead mimic the resin behavior using an appropriate material model for the effective medium (e.g. elastic-plastic-thermal).

As a simple demonstration of the overall integrated process-property simulation framework, refer to the following three movies (YouTube Channel):

- Virtual Microstructure Generation and Virtual Testing of Chopped Unidirectional Prepreg (BMC/SMC): https://youtu.be/dPMZnU7T48s
- Virtual Microstructure Generation of a Discontinuous Long Fiber Composite (Chopped Impregnated Tows): https://youtu.be/uVA0QkE-3zQ
- Forming Simulation and Virtual Testing of a Discontinuous Long Fiber Composite Hat Stiffener: https://youtu.be/0tbWftTUL84

Once the final panel or shape (structure) is obtained, virtual test specimens are then cut out (recall, these are based on the Binary Model formulation) and then virtual tests (FEA simulations) are executed such as tension, compression, shear, and flexure (see Figure 2). By incorporating geometric and material stochasticity (through mapping), virtual material allowables can be generated for discontinuous long fiber composites, which would be of great interest to the automotive and aerospace industry (we have previously demonstrated and validated a similar mapping approach for the probabilistic penetration behavior of Kevlar fabric soft armor).

More information about Dr. Nilakantan can be obtained from his research website: http://www.drgaurav.org

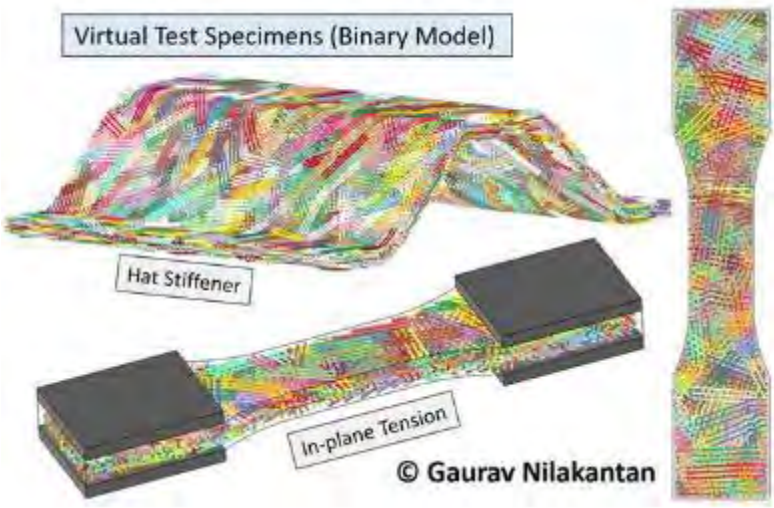


Figure 1. Initial BMC charge of prepreg chips in the mold fixture obtained using DYNAMold® and LS-DYNA®; prepreg chip FEA configuration based on the Binary Model

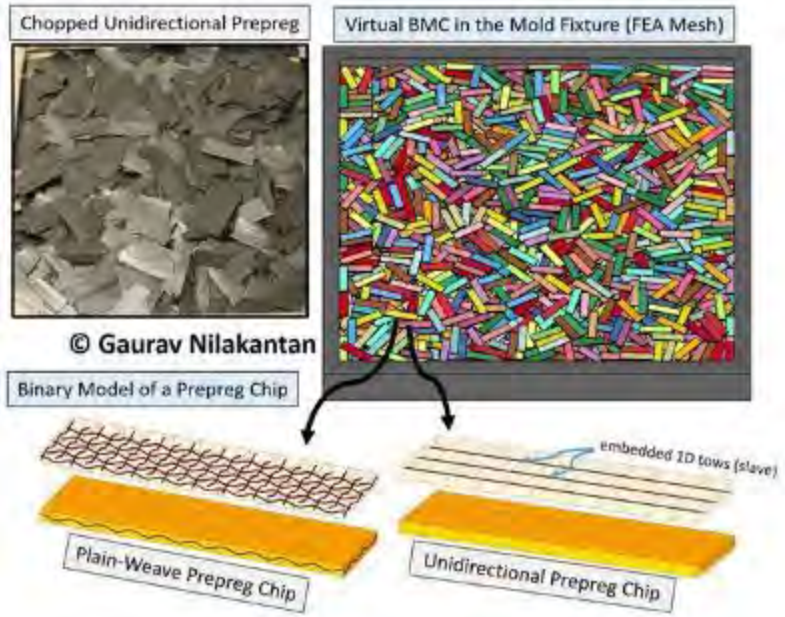


Figure 2. Binary Model based virtual test specimens (FEA model) of discontinuous long fiber composites capturing the embedded random fiber orientation, distribution, and waviness

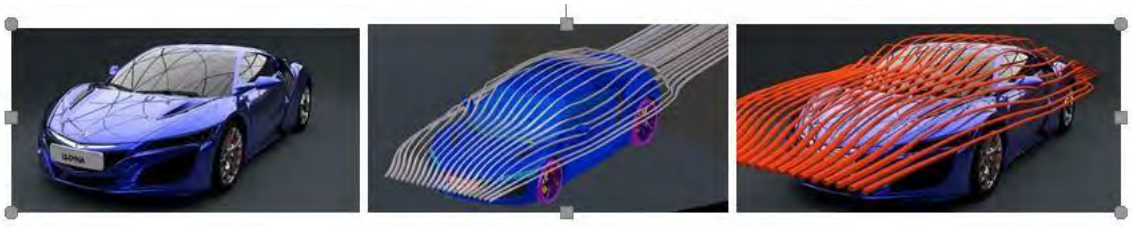
LS-DYNA New Features - Table 2: www.lstc.com/new_features

Investigating the Post Processing of LS-DYNA® in a Fully Immersive Workflow Environment

Ed Helwig, Facundo Del Pin

Livermore Software Technology Corporation, Livermore

Abstract: The use of virtual reality (VR) in engineering applications has been expanding for the last decade. Immersive technology is quickly becoming a tool for pre and postproduction decision-making and analysis. Virtual reality can assist in reducing the number of physical prototypes, build collaboration between various engineering disciplines, speed up time to manufacturing, and reduce the number of design cycles. We examined the integration of LS-DYNA into a workflow using results from a fluid-structure interaction problem. The expected outcome was to generate life like 2D and 3D simulation models, while maintaining a high degree of engineering data in the analysis output. Additionally, simulation data was placed in a computer aided virtual environment (CAVE) using a passive visualization solution, and eliminating the requirement for an active VR headset. The investigation identified key hardware and software considerations while optimizing the workflow process. Scalability, computation time, component costs and functionality were variables considered during development. It is our firm belief that seamlessly integrated visualization tools and state of the art physics solvers are in the core of future design and manufacturing pipelines.



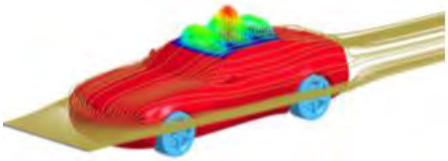
Read Full Paper

LS-DYNA New Features: - Table 2: www.lstc.com/new_features

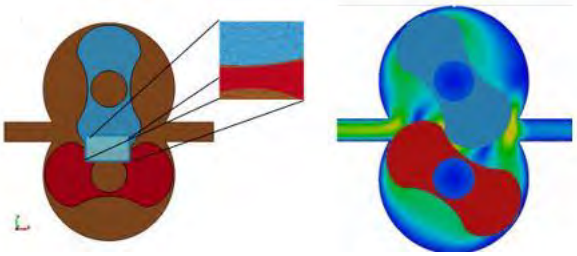
ICFD: Summary of Recent and Future Developments

Facundo Del Pin, Iñaki Caldichoury, Rodrigo R. Paz and Chienjung Huang

Livermore Software Technology Corporation



Abstract : Since its release in R7 the Incompressible CFD solver (ICFD) has been rapidly improving and increasing its functionality. In this paper a summary of the latest and current developments will be presented. The focus will be on four topics. First the steady state solver and its coupling capabilities for fluid-structure interaction (FSI) or conjugate heat transfer (CHT) will be presented. In second place the recent modifications to the boundary layer mesh generation will be introduced where some default parameters have changed. The possible implications of these changes in the solution will be mentioned. Third a short introduction to coupling ICFD with LS-OPT® for shape optimization will be presented. The idea is to use ANSA to morph the surface mesh driven by LS-OPT to provide an optimal solution. Finally some of the current developments will be enumerated like immersed interfaces, periodic boundary conditions, porous media through shell elements for parachute simulation, etc. These developments will be part of future LS-DYNA® releases. *Read Full Paper*



The Investigation of Parachute Suspension Line Fluid-Structure Interactions using LS-DYNA® ICFD

Catherine P. Barry[1], Bradford G. Olson[1], Keith Bergeron[2],
David J. Willis[1], James A. Sherwood[1]
[1]*University of Massachusetts Lowell*
[2]*U.S. Army Natick Soldier Research, Development & Engineering Center*

Abstract: The U.S. Army uses autonomously guided parachute systems to deliver supplies to troops in the field. Each system consists, primarily, of a lightweight canopy, braided polyester suspension lines, and payload. As a system descends, the suspension lines generate and shed vortices as a result of the cross-flow of air, and these vortices induce fluctuating drag and lift forces. These fluctuating forces introduce system performance degradations, and the excited vibrations can often be heard for several kilometers. One method to assist in developing a fundamental understanding of the relationship between the suspension-line architecture, e.g. surface geometry and tensile and torsional stiffnesses, and the associated vortex-induced vibrations is the running of cyber-physical fluid dynamics (CPFD) experiments. The CPFD system consists of a rigid scale model of a section of the suspension line mounted on a servomotor within a wind tunnel. The servomotor accounts for the evolution in the torsional stiffnesses of the suspension line as a function of the degree of tensile force. The combination of the angle of attack, surface geometry, and axial tension determine the resulting vibration of the line. In the current research, the CPFD system is modeled using the LS-DYNA incompressible fluid dynamics (ICFD) solver, and is analyzed as a two-way FSI problem. These simulations give a graphical insight into the FSI phenomena that parachute suspension lines experience as they move through the air, and this insight can guide potential changes in the braid architecture to mitigate the vortex-induced vibrations. A well calibrated ICFD model can then be used to perform parametric studies on how changes in braid architecture relate to changes in the vibration response of the suspension line. This paper explores the feasibility of modeling the CPFD experiments with the ICFD solver where the objective is to understand how the vibration response of the line changes as a function of the torsional stiffness of the suspension line.

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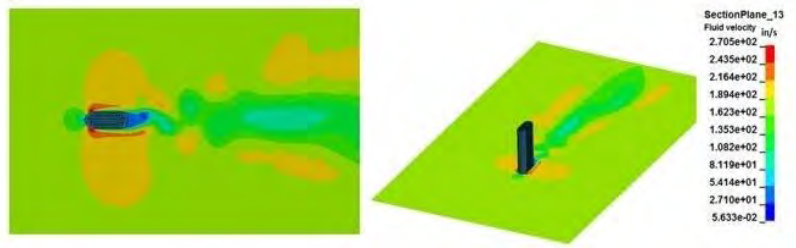

BETA SIMULATION SOLUTIONS

BETA CAE Systems. www.beta-cae.com

BETA CAE Systems - ANSA

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

BETA CAE Systems μETA

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

Solutions for:

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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.

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

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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.

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

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

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

JSOL Corporation **www.jsol.co.jp/english/cae/**

HYCRASH

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

JSTAMP/NV

As an integrated press forming simulation system for virtual tool shop the JSTAMP/NV meets the various industrial needs from the areas of automobile, electronics, iron and steel, etc. The JSTAMP/NV gives satisfaction to engineers, reliability to products, and robustness to tool shop via the advanced technology of the JSOL Corporation.

JMAG

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

Livermore Software Technology Corp. **www.lstc.com**

LS-DYNA

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

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

LS-OPT: LS-OPT is a standalone Design Optimization and Probabilistic Analysis package with an interface to LS-DYNA. The graphical preprocessor LS-OPTui facilitates definition of the design input and the creation of a command file while the postprocessor provides output such as approximation accuracy, optimization convergence, tradeoff curves, anthill plots and the relative importance of design variables.

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

LSTC Dummy Models:

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

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

Material Sciences Corporation www.materials-sciences.com

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

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

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

MSC/LS-DYNA Composite Software and Database -

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

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

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

Oasys Ltd. LS-DYNA Environment www.oasys-software.com/dyna

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

Oasys PRIMER

Key benefits:

- Pre-Processor created specifically for LS-DYNA®
- Compatible with the latest version of LS-DYNA®
- Maintains the integrity of data
- Over 6000 checks and warnings – many auto-fixable
- Specialist tools for occupant positioning, seatbelt fitting and seat squashing (including setting up pre-simulations)
- Many features for model modification, such as part replace
- Ability to position and depenetrate impactors at multiple locations and produce many input decks automatically (e.g. pedestrian impact, interior head impact)
- Contact penetration checking and fixing
- Connection feature for creation and management of connection entities.
- Support for Volume III keywords and large format/long labels
- Powerful scripting capabilities allowing the user to create custom features and processes

www.oasys-software.com/dyna

Oasys D3PLOT

Key benefits:

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

www.predictiveengineering.com

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

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

Our History

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

恒士达科技
Hengstar Tech.

Shanghai Hengstar **www.hengstar.com**

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

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

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

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

Consulting

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

Lenovo www.lenovo.com

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

Dedicated to building exceptionally engineered PCs, mobile Internet devices and servers spanning entry through supercomputers, Lenovo has built its business on product innovation, a highly efficient global supply chain and strong strategic execution. The company develops, manufactures and markets reliable, high-quality, secure and easy-to-use technology products and services.

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

Cloud - HPC Services - Subscription JSOL

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

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

JSOL Corporation is cooperating with chosen cloud computing services

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

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

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

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

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

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

NEC Solution Innovators, Ltd. - http://jpn.nec.com/manufacture/machinery/hpc_online/

Focus - Foundation for Computational Science
http://www.j-focus.or.jp

Platform Computation Cloud - CreDist.Inc.

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

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

Cloud - HPC Services - Subscription RESCALE

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.

Rescale Cloud Simulation Platform www.rescale.com

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

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

Industry-Leading Security

Rescale has built proprietary, industry-leading security solutions into the platform, meeting the needs of customers in the most demanding and competitive industries and markets.

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

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

LSTC - DYNAmore GmbH JSOL Corporation

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

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

ESI Cloud Based Virtual Engineering Solutions

www.esi-group.com

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

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

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

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

Virtual Performance Solution:

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

In this hybrid model, users utilize VPS on their desktop for modeling including geometry, meshing and simulation set up. ESI Cloud is then used for high performance computing with an integrated visualization and real time collaboration offering through a web browser.

The benefits of VPS hybrid on ESI Cloud include:

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

VPS On Demand

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

Key solution capabilities:

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

Result visualization

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

Key result visualization capabilities:

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

Collaboration

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

Key collaboration capabilities:

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

Distribution, Consulting

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	REPORTER	SHELL	FEMZIP	HYCRASH
	DIGIMAT	Simpleware	LSTC Dummy Models	
			LSTC Barrier Models	

China	**Shanghai Fangkun Software Technology Ltd.**		
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	http://www.fujitsu.com/jp/solutions/business-technology/tc/sol/			
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Japan	**LANCEMORE**	info@lancemore.jp		
	www.lancemore.jp/index_en.html			
	Consulting			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models		

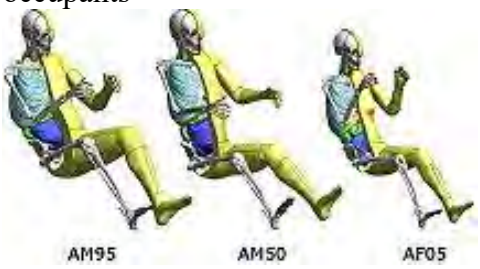
Japan	**Terrabyte**	**English:**		
	www.terrabyte.co.jp	www.terrabyte.co.jp/english/index.htm		
	Consulting			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	AnyBody	

Korea	**THEME**	wschung7@gmail.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	
Taiwan	**AgileSim Technology Corp.**			
	www.agilesim.com.tw			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM
Taiwan	**Flotrend**			
	www.flotrend.com.tw			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM
Taiwan	**SiMWARE Inc..**			
	www.simware.com.tw			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM

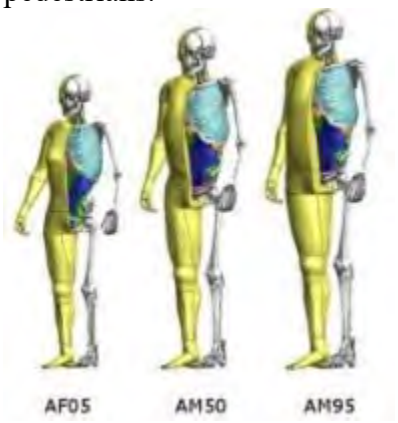
TOYOTA - Total Human Model for Safety – THUMS

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

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



and as standing model to represent pedestrians.



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

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

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

For information please contact: THUMS@lstc.com

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

LSTC – Dummy Models

LSTC Crash Test Dummies (ATD)

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

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

e-mail to: atds@lstc.com

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

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

Models In Development

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

Planned Models

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

LSTC – Barrier Models

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

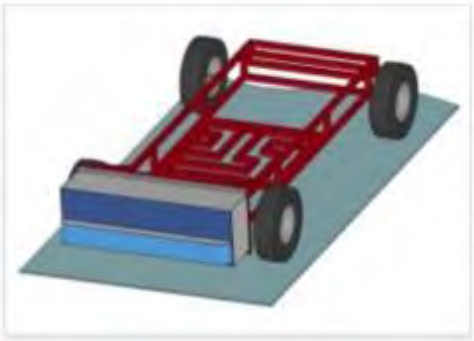
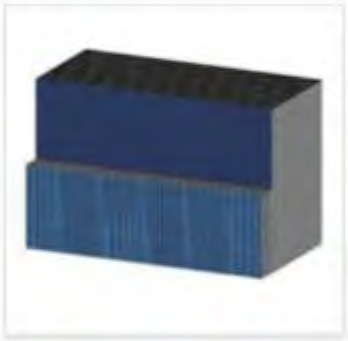
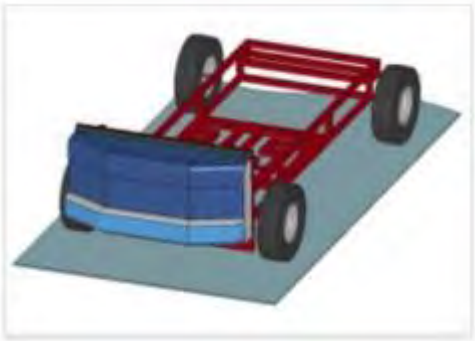
LSTC offers several Offset Deformable Barrier (ODB) and Movable Deformable Barrier (MDB) models:

- ODB modeled with shell elements
- ODB modeled with solid elements
- ODB modeled with a combination of shell and solid elements
- MDB according to FMVSS 214 modeled with shell elements
- MDB according to FMVSS 214 modeled with solid elements
- MDB according to ECE R-95 modeled with shell elements
- AE-MDB modeled with shell elements
- IIHS MDB modeled with shell elements
- IIHS MDB modeled with solid elements
- RCAR bumper barrier
- RMDB modeled with shell and solid elements

LSTC ODB and MDB models are developed to correlate to several tests provided by our customers. These tests are proprietary data and are not currently available to the public.

All current models can be obtained through our webpage in the LSTC Models download section or through your LS-DYNA distributor.

To submit questions, suggestions, or feedback about LSTC's models, please send an e-mail to: atds@lstc.com. Also, please contact us if you would like to help improve these models by sharing test data.

Training - Webinars - Events - Conferences

Participant's Training Classes

Webinars

Info Days

Class Directory

Directory

Arup	www.oasys-software.com/dyna/en/training
BETA CAE Systems	www.beta-cae.com/training.htm
DYNAmore	www.dynamore.de/en/training/seminars
Dynardo	http://www.dynardo.de/en/wost.html
ESI-Group	https://myesi.esi-group.com/trainings/schedules
ETA	www.eta.com
KOSTECH	www.kostech.co.kr/
LSTC - (corporate)	www.lstc.com/training
LS-DYNA OnLine - (Al Tabiei)	www.LSDYNA-ONLINE.COM
OASYS	www.oasys-software.com/training-courses/
Predictive Engineering	www.predictiveengineering.com/support-and-training/ls-dyna-training

Author: Christian Frech christian.frech@dynamore.de

Seminar brochure 2018

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

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

Selection of trainings from October to November

Introduction	
Introduction to LS-DYNA	3-5 October (T) 29-31 October
Crash/Short-Term Dynamics	
Joining Techniques in LS-DYNA	5 November
Passive Safety	
CPM Airbag Modeling	23 November
Metal Forming	
Introduction to Welding Simulation	18 October (Ba)
Applied Forming Simulation with eta/DYNAFORM	5-6 November
Metal Forming with LS-DYNA	7-9 November
Material	
Advanced Damage Modeling: Orthotropic Materials	18 October (BA)
Concrete and Geomaterial Modeling	29-30 October
Modeling Metallic Materials	12-13 November
Parameter Identification with LS-OPT	14 November
Material Failure	15-16 November
Implicit Capabilities	
NVH, Frequency Domain, Fatigue	18 October (BA)
Implicit Analysis using LS-DYNA	7-8 November (V)
High energy events	
Methods for Simulating Short Duration Events	18 October (BA)
Blast Modeling with LS-DYNA	22-23 October
Penetration Modeling with LS-DYNA	24-25 October
Explosives Modeling for engineers	26 October
Optimization	
LS-OPT - Optimization & Robustness	22-24 October

Information days (free of charge)

New Feature in LS-DYNA	22 (V), 29 (Z), 30 (T) November
Forming Trends	29 October
Welding & Heat Treatment	5 November (A)

If not otherwise stated, the event location is Stuttgart, Germany. Other event locations are:
A = Aachen, Germany, Ba = Bamberg, Germany, G = Gothenburg, Sweden; L = Linköping, Sweden,
V = Versailles, France; T = Turin, Italy, Tr = Traboch, Austria, Z = Zurich, Switzerland
We hope that our offer will meet your needs and are looking forward to welcoming you at one of the events.

www.lstc.com

October

Date	*Location*	*Coures Title*	*Instructor(s)*
Oct 9 – Oct 12	MI	Optimization and Probabilistic Design Analysis Using LS-OPT	A. Basudhar
Oct 22	MI	Introduction to LS-PrePost	P. Ho, Q. Yan
Oct 23 – Oct 26	MI	Introduction to LS-DYNA	A. Nair

November

Date	*Location*	*Coures Title*	*Instructor(s)*
Nov 5 -Nov 6	CA	NVH & Frequency Domain Analysis	Y. Huang
Nov 7 -Nov 9	CA	Introduction to Finite Element & Mesh Free Methods for Manufacturing & Failure Analysis	Y. Wu, B. Ren
Nov 5 -Nov 6	MI	Occupant Simulation in LS-DYNA	H. Devaraj
Nov 12-Nov 16	MI	Crashworthiness in LS-DYNA	P. Du Bois, S. Bala
Nov 12	CA	Introduction to LS-PrePost	P. Ho, Q. Yan
Nov 13-Nov 16	CA	Introduction to LS-DYNA	A. Nair

December

Date	*Location*	*Coures Title*	*Instructor(s)*
Dec 4 –Dec 5	MI	Advanced LS-PrePost	A. Nair, Q. Yan
Dec 6 –Dec 7	CA	Metal Forming Training Using LS-PrePost and LS-DYNA	L. Zhang, X. Zhu
Dec 10	MI	Introduction to LS-PrePost	P. Ho, Q. Yan
Dec 11 –Dec 14	MI	Introduction to LS-DYNA	R. Chivukula

Introduction to LS-DYNA

Date: 1 -3 Oct, 2018 Location: The Arup Campus, Blythe Valley Park, Solihull

Price: £750 + VAT

A comprehensive practical introduction to the LS-DYNA FE code to simulate general nonlinear problems.

Course Outline: Learn more about LS-DYNA and its capabilities gaining thorough knowledge in the explicit analysis part of the software using the newest Oasys software. This course provides a thorough overview of the explicit capabilities of LS-DYNA. Furthermore, it gives an insight to the theory behind the software. After the course, the attendees will be able to go through the process of setting up a model (Pre-Processing) to getting results from LS-DYNA (Post-Processing).

Examples of workshops are used to demonstrate how to work around the software together with a PowerPoint presentation.

Course Content:

- An overview of LS-DYNA software
- An ability to prepare and run LS-DYNA input files
- An ability to debug LS-DYNA data
- An overview about post-processing the results

More information and Register interest

Introduction to JavaScript

Date: 1 Nov, 2018 **Location**: The Arup Campus, Blythe Valley Park, Solihull **Price:** £300 + VAT

This course aims to familiarise attendees with the JavaScript language and teach them to write JavaScripts for Oasys PRIMER and Oasys D3PLOT. No previous experience of JavaScript is required but it is strongly recommended that attendees have some experience of programming or scripting in other languages.

Course Content:

- Which Oasys products have JavaScript?
- Examples of use of JavaScript
- Guidance on Core JavaScript
- Accessing, modifying and creating keyword data
- Interacting with PRIMER
- Making GUI
- Common errors and how to avoid them

More information and Register interest

DynaS+

Complementary tools

LSTC Livermore Software Technology Corp.

OUT-06

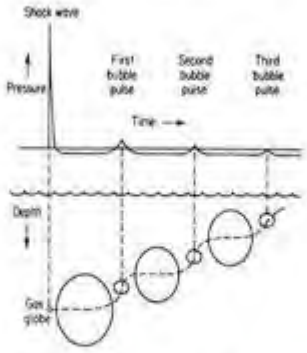
Underwater Shock Analysis with USA/LS-DYNA

Goal

Be able to run underwater explosions analysis with USA software and understand the underlying theory

Contents

1. Introduction
2. Doubly Asymptotic Approximation (DAA) Field Solver
3. Nonreflecting Boundary (NRB) Solver
4. Miscellaneous Topics
5. Optional - Cavitating Acoustic Fluid Element (CAFE and CASE) Field Solver



The key points of the training will be illustrated with practical exercises.

Audience

CAE Engineers / Researchers

Prerequisites

Operationnal knowledge of LS-DYNA *(Preliminary follow-up of the course* ***BASE-01*** *or* ***BASE-03*** *advised)*

Specific registration conditions submitted to the agreement of American Defence Department for USA software use

Duration

3 days

Trainers

External expert
(Tom LITTLEWOOD –LSTC)

The training being provided by an external expert, DynaS+ reserves right to cancel within the 2 weeks notice if there is not enough attendees.

Training provided in English, English course material

DynaS+ Catalogue Formation 2018 v2.0 - Ref : T/DIV/CMI/DYNAT/17/0238/2.0

Contact information:

Training Manager: **Charlotte MICHEL** E-mail: c.michel@dynasplus.com

Tel: +33 5 61 44 54 98 / Fax: +33 5 61 44 74 88 Website: www.dynasplus.com

Address: 5, avenue Didier Daurat - 31 400 TOULOUSE

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

GOOGLE+

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