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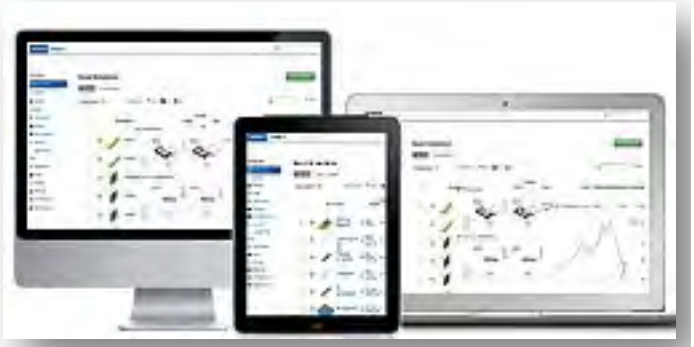
FEA Information Engineering Solutions

Volume 4, Issue 06, June 2015

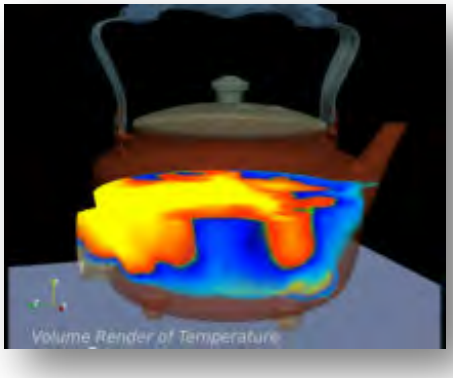
CRAY New EMEA - UK

d3VIEW Cloud Service



Predictive Engineering Program Manager

Electric Kettle – LS-DYNA



FEA Information Inc. is a publishing company founded April 2000, incorporated in the State of California July 2000, and first published October 2000. The initial publication, FEA Information News continues today as FEA Information Engineering Solutions. The publication's aim and scope is to continue publishing technical solutions and information, for the engineering community.

FEA Information Inc. Publishes:

FEA Information Engineering Solutions
FEA Information Engineering Journal
FEA Information China Engineering Solutions

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A monthly publication in pdf format sent via e-mail, additionally archived on the website FEA Publications. www.feapublications.com

FEA Information China Engineering Solutions

The first edition was published February 2012. It is published in Simplified and Traditional Chinese in pdf format.

To sign up for the Traditional, or Simplified edition write to yanhua@feainformation.com

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FEA Information Inc. Proudly Sponsored

Kyle Romine, at the NCJRA

Northern California Junior Rodeo Association.

Sincerely, Marsha Victory – Trent Eggleston – Suri Bala
FEA Information Engineering Solutions US Edition

Predictive Engineering -Freeware LS-DYNA MPP Program Manager for Windows

Freeware LS-DYNA MPP Program Manager for Windows

Predictive Engineering is pleased to introduce the LS-DYNA MPP Windows Interface

Originally developed for their LS-DYNA consulting project work, Predictive Engineering realized it would be useful to the LS-DYNA community and is offering it to LS-DYNA Users.

LS-DYNA MPP Windows Interface is based upon the excellent functionality of LSTC's LS-DYNA Program Manager (SMP).

The program allows the user to:

- Run LS-DYNA jobs easily by clicking on file names and not worrying about "spaces"
- Direct the output
- Pick any solver via a Windows dialog
- Rerun jobs with a click
- Save analysis scripts to Windows auto-execute bat files
- Set Windows affinity
- Advanced file options for LS-DYNA
- Separate entry of extra MPI and LS-DYNA commands
- Ability to set LS-DYNA license environment variables within the MPI program
- Restart jobs
- Use all the SMP CTRL-C switches with the click of a button

Visit Predictive Engineering - download LS-DYNA MPP Program Manager for Windows
www.predictiveengineering.com/content/free-ls-dyna-mpp-program-manager-windows

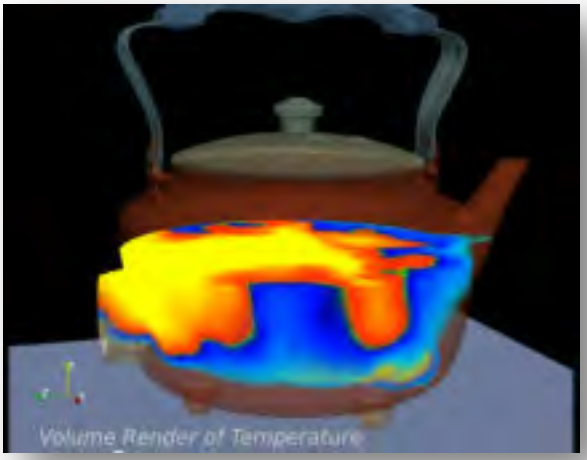
Predictive Engineering provides finite element analysis consulting services, software, training and support to a broad range of engineering companies across North America. They strive to exceed client expectations for accuracy, timeliness and knowledge transfer. Their process is both cost-effective and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

Visit their website to view their portfolio of FEA, CFD and LS-DYNA consulting projects

LSTC - US
YOUTUBE **www.youtube.com/watch?v=s6ymp-AJ3Jk**

Electric Kettle simulation using LS-DYNA

Copyright to LSTC - Published on May 29, 2015



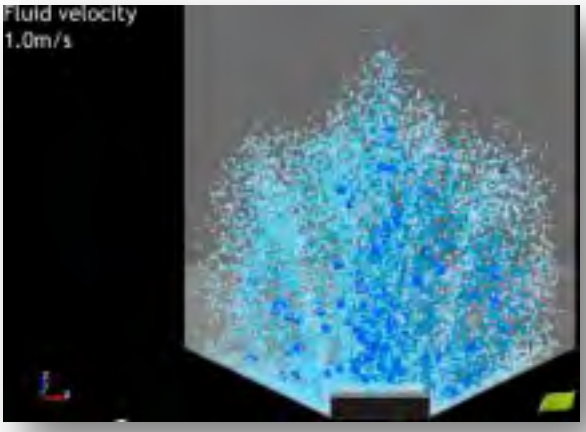
This simulation shows the powerful multiphysics capabilities of LS-DYNA. The CFD solver is coupled to the solid thermal solver and the Electromagnetism solver.

The simulation is showing the heating of water inside an electric kettle. The kettle is plugged in to standard 110V switch.

www.lstc.com

LANCEMORE – JAPAN

YOUTUBE - www.youtube.com/watch?v=aHB5NMOug0c



Motion of particles in the air flow using LS-DYNA

Model No.404

www.lancemore.jp

For more information please visit the website: www.oasys-software.com/dyna/en/

New Release of Oasys 12.1 Software Suite

For High Resolution – detailed pdf - more information – download – release notes

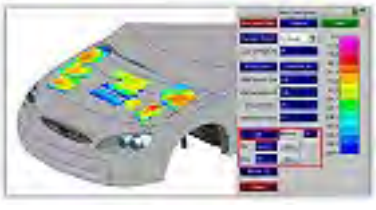
Oasys 12.1 is the latest version of our Oasys Software Suite for pre- and post- processing of LS-DYNA models. 12.1 is primarily a bug fix release of 12.0.

Following the success of previous releases of the Oasys Suite, this new version provides the user with a variety of new tools to help reduce the amount of time spent pre- and post- processing a model.

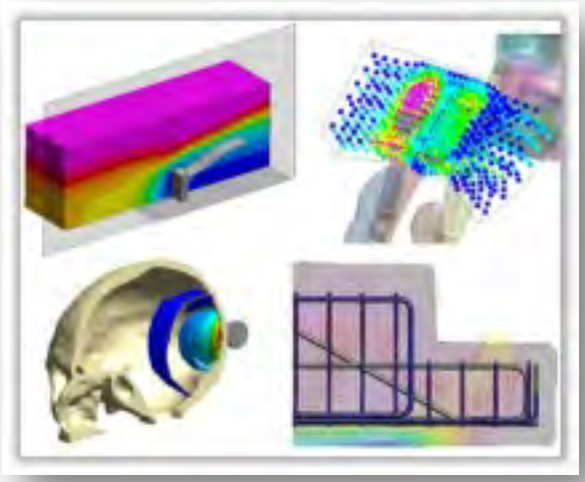
Oasys PRIMER

With this new release of Oasys PRIMER a number of new tools have been added to reduce the time taken to turn a mesh into a fully running LS-DYNA model. These include:

- Support for LS-DYNA Volume III keywords
- Easier access to recent files
- Drag and drop files into PRIMER
- Support for long labels and large format (up to 15 digits)
- Support for part character labels
- Visualise label/ID usage graphically
- Direct link to open LS-DYNA keyword manual at relevant section
- Occupant soft stop angles to prevent internal penetrations during positioning
- New ejection mitigation (FMVSS 226) setup tool
- Improved pedestrian protection tools:
  - hard point detection
  - additional robustness points
  - default-green points on windscreen
  - updates to EuroNCAP protocols
- New connection features
- Composite modelling tool
- Ability to clean up individual include files
- Interactive contour bar
- Tool for comparing geometry and mesh
- Visualisation of true shell thickness and beam/shell offsets
- Output 3D PDF and WebGL files

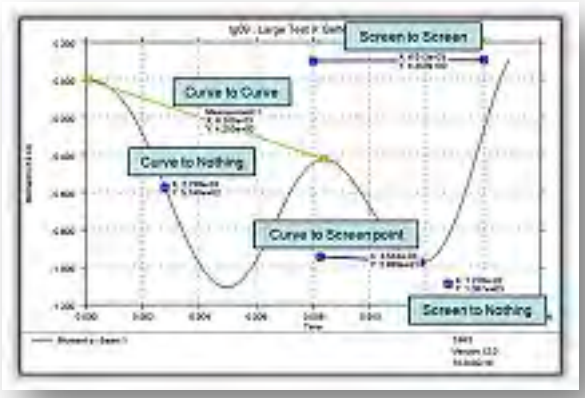


[For High Resolution – detailed pdf - more information – download – release notes]



New features in Oasys D3PLOT include:

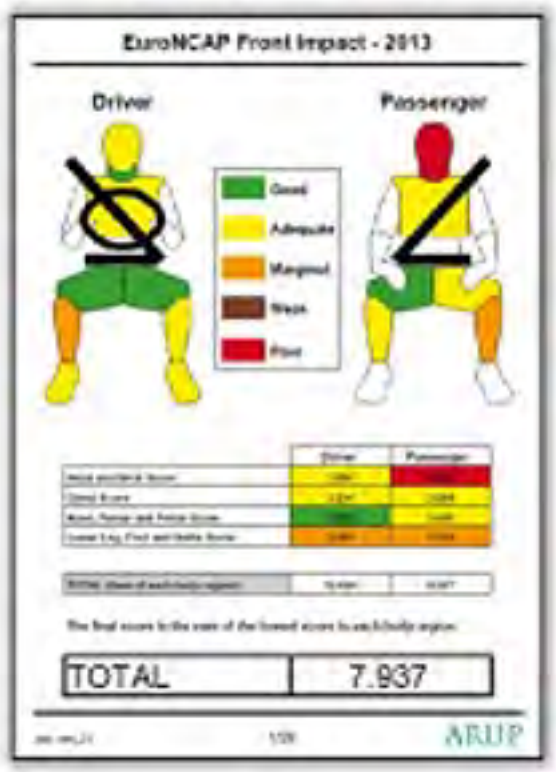
- Support for new LS-DYNA output file formats, including Volume III multi-physics results files
- Drag and drop files into D3PLOT
- Support for long labels and large format
- Support for part character labels
- New data selection menu – easier to find the different plotting types and options
- Visualisation of beam offsets
- New scripting capabilities



New features in Oasys T/HIS include:

- Support for new LS-DYNA output file formats, including Volume III multi-physics results files
- Drag and drop files into T/HIS
- Full support for in-plane integration point outputs, and when data is extrapolated to nodal points
- Read space-separated text files - alternative to comma-separated CSV and T/HIS native formats
- Interactive enhancements to "clip" operation
- Interactive option to copy curves

[For High Resolution – detailed pdf - more information – download – release notes]



New features in Oasys REPORTER includes:

- Report templates included in the v12 release to postprocess standard impact tests:
  - EuroNCAP Front (ODB, FFB)
  - EuroNCAP Side (MDB, Pole)
  - EuroNCAP/GTR9 Pedestrian
  - IIHS Front (ODB, small overlap)
  - CNCAP Front (ODB)

Jun 12, 2015 | LE MANS, France

Ford Returning to Le Mans in 2016

All-New Ford GT,

Marking 50th Anniversary of 1966 Victory

The Ford GT race car will compete in the 24 Hours of Le Mans

Ford returns to Le Mans in 2016 with the all-new Ford GT supercar to compete in LM GTE Pro class, commemorating the 50th anniversary of Ford's 1966 overall victory

All-new Ford factory program to compete in both the FIA World Endurance Championship and TUDOR United SportsCar Championship with a two-team, four-car effort – operated by Chip Ganassi Racing with Felix Sabates

Ford GT is company's showcase for aerodynamics and lightweight carbon fiber construction, along with new twin-turbocharged Ford EcoBoost® V6 – most powerful EcoBoost production engine ever

Ford announced today it is returning to one of the most prestigious automobile races in the world with its new Ford GT race car, based on the all-new ultra-high-performance supercar that goes on sale next year.

The Ford GT race car will compete in the 24 Hours of Le Mans – referred to by many as the Grand Prix of Endurance and Efficiency – starting next year. Revealed today at the famous circuit in Le Mans, France, Ford GT will compete in the Le Mans GT Endurance class for professional teams and drivers (LM GTE Pro).

The new race car – a further proof point of Ford innovation – is based on the all-new Ford GT supercar unveiled in January. Both the production car and race car will arrive in 2016 to mark the 50th anniversary of Ford GT race cars placing 1-2-3 at the 1966 24 Hours of Le Mans. Ford went on to repeat its victory at Le Mans in 1967, 1968 and 1969.

"When the GT40 competed at Le Mans in the 1960s, Henry Ford II sought to prove Ford could beat endurance racing's most legendary manufacturers," said Bill Ford, executive chairman, Ford Motor Company. "We are still extremely proud of having won this iconic race four times in a row, and that same spirit that drove the innovation behind the first Ford GT still drives us today."

The new Ford GT race car will run the full 2016 schedules of the FIA World Endurance Championship and TUDOR United SportsCar Championship, making its competition debut in January 2016 in the Rolex 24 At Daytona, Florida. The two Ford teams will be operated by Chip Ganassi Racing with Felix Sabates (CGRFS). Both series teams intend to compete with a four-car effort at Le Mans. Drivers will be announced later.

The all-new Ford GT serves as the pinnacle product of the new Ford Performance group, a division dedicated to providing innovation through performance.

Set to deliver more than 12 new performance vehicles by 2020, Ford Performance will leverage its racing efforts and expertise to speed innovations on dedicated performance models and performance parts in order to more quickly iterate the latest technologies that can ultimately be applied to the full Ford vehicle lineup.

The performance segment is a growing business for Ford, as the company recognizes its customers' desire for vehicles that offer excellent fuel economy, leading technology and a great driving experience. The Ford Performance lineup includes Ford GT, Focus RS, F-150 Raptor, Shelby GT350 and Shelby GT350R, Focus ST and Fiesta ST.

"Ford remains focused on three priorities globally – accelerating our One Ford plan, delivering product excellence with passion and driving innovation in every part of our business," said Mark Fields, Ford Motor Company president and CEO. "All three came together to create the new Ford GT. We also know from our rich history in motorsports that world-class competition is a great incubator for even further product innovation."

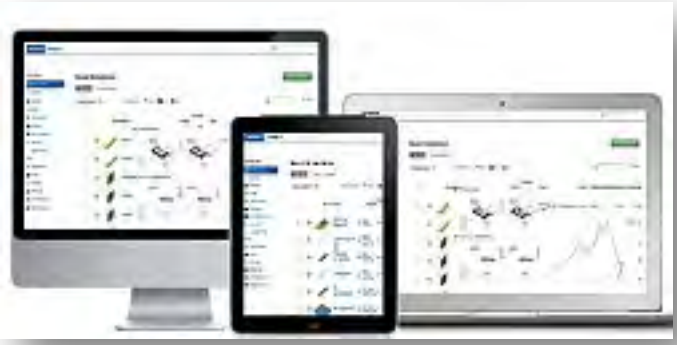
The Ford GT race car features a number of innovations Ford believes will not only make it competitive in LM GTE Pro, but ultimately positioned to provide benefits to each vehicle in the Ford lineup. These include state-of-the-art aerodynamics to deliver outstanding levels of downforce for improved stability with minimal drag, advanced lightweight composites featuring carbon fiber for an exceptionally rigid but light chassis, and the power and efficiency of EcoBoost technology.

"As we developed the Ford GT, from the outset, we wanted to ensure we had a car that has what it takes to return Ford to the world of GT racing," said Raj Nair, Ford Motor Company group vice president, Global Product Development and chief technical officer. "We believe the Ford GT's advances in aerodynamics, light-weighting and EcoBoost power will make for a compelling race car that can once again compete on a global stage."

Joining Ford in this project are Multimatic Motorsports, Roush Yates Engines, Castrol, Michelin, Forza Motorsport, Sparco, Brembo and CGRFS. The race car has undergone extensive design and testing within Ford and Multimatic, with CGRFS providing input into the development. Roush Yates is supporting development of the 3.5-liter EcoBoost V6 – the most powerful EcoBoost production engine ever.

The 3.5-liter EcoBoost V6 engine debuted in the TUDOR United SportsCar Championship in 2014. Since then, Ford, with CGRFS, has captured significant overall wins at the 12 Hours of Sebring and Rolex 24 At Daytona. Besides great success in sports cars, Ganassi race teams achieved major victories in the Daytona 500, Brickyard 400 and Indianapolis 500.

"We've won races and championships, but we've never run Le Mans," said team owner Chip Ganassi. "When presented the opportunity to compete with the all-new Ford GT on the world's biggest sports car stage, and on the 50th anniversary of one of the most storied victories in racing history, how could any race team not want to be part of that? Will it be a challenge? Absolutely, but we couldn't be with a better partner than Ford."



For current LSTC customers, Limited Preview is now available*

d3VIEW has established LS-DYNA Software as a Service

Running on Microsoft Azure®.

- **For a limited private preview*, please contact suri@d3view.com .**
- **Complete informational announcement in July**
- **July we will welcome d3VIEW/LS-DYNA Software as a Service as a Platinum FEA Information Participant.**

LS-DYNA
http://www.lstc.com

The leading general-purpose simulation software offering multi-scale multi-stage and multi-physics solver.

d3VIEW
http://www.d3view.com

Using a web browser, submit and track simulation jobs on Azure.
Use templates to extract, transform, and visualize LS-DYNA simulations.

Microsoft Azure®. Azure is Microsoft's cloud computing platform, a growing collection of integrated services

***Restrictions apply for preview - contact suri@d3view.com**

News Release (For complete article visit www.cray.com News)

Cray Opens New EMEA Headquarters in the United Kingdom

-- (Marketwired) -- 06/02/15 -- Global supercomputer leader Cray Inc. (NASDAQ: CRAY) today announced the establishment of its European, Middle East and Africa (EMEA) headquarters at the Company's new office in Bristol, United Kingdom. Cray continues to expand its presence in the supercomputing and big data markets across the region, and its new headquarters strengthens the Company's commitment to the commercial, academic, and government customers in these countries.

Cray's new EMEA headquarters will serve as a regional base for its EMEA sales, service, training and operations, and as an important development site for worldwide R&D initiatives. The new headquarters will also provide the company with a centralized location for business engagements with new and existing customers.

"The EMEA market is one of our fastest growing regions and as we continue to expand with new customers, partners and employees, and further advance our R&D programs in Europe, now is the perfect time to centralize our operations in Bristol and provide a platform for continued growth," said Peter Ungaro, president and CEO of Cray. "Bristol is a great city with leading universities, and is quickly becoming a technology hub with a number of large high-tech companies and startups and a skilled workforce. The city is an ideal fit for our growing company and we are excited to be a part of the Bristol community."

News Release (For complete article visit www.cray.com News)

The UK Minister of State for Culture and the Digital Economy, Mr. Ed Vaizey said, "We are delighted that Cray has established its EMEA headquarters in Bristol. It is exciting to see a recognised technology leader make the UK one of its global hubs. It sends a very clear message to international organisations about innovation and excellence in the UK technology sector and the benefits of using the support available from UKTI, and we hope more companies follow Cray's lead in this regard."

Cray has numerous supercomputing, storage and analytics customers across the EMEA market. In just the last year, several high performance computing organizations in the region have signed contracts for new Cray systems. These customers include the PDC Center for High Performance Computing at KTH Royal Institute of Technology in Stockholm, Sweden; the Met Office in the United Kingdom; the King Abdullah University of Science and Technology (KAUST) in Saudi Arabia; Stalprodukt S.A., a leading global steel processor in Poland; and Petroleum Geo-Services, a global oil-and-gas company headquartered in Oslo, Norway.

Additional Cray customers in the region include the European Centre for Medium-Range Weather Forecasts (ECMWF) in Reading; the Engineering and Physical Sciences Research Council, which procured the ARCHER supercomputer for the UK National Supercomputing Facility at the University of Edinburgh in Scotland; the High Performance Computing Center Stuttgart (HLRS) at the University of Stuttgart; the Swiss National Supercomputing Centre (CSCS) in Lugano, Switzerland; and the South African Weather Service in Pretoria, South Africa.

Cray's global headquarters are located in Seattle, Washington, and the Company's manufacturing facilities are based in Chippewa Falls, Wisconsin. Cray also has major offices in St. Paul, Minnesota; San Jose and Pleasanton, California; Austin, Texas; and Seoul, South Korea; and maintains sales and service offices in cities around the world.

For more information on Cray and its complete line of supercomputers, storage and analytics systems, please visit our website at www.cray.com.
About Cray Inc.: Global supercomputing leader Cray Inc. (NASDAQ: CRAY) provides innovative systems and solutions enabling scientists and engineers in industry, academia and government to meet existing and future simulation and analytics challenges. (**For complete About visit www.cray.com.** \

Cray Media: Nick Davis pr@cray.com
Cray Investors: Paul Hiemstra ir@cray.com
Source: Cray Inc.

Toyota Unveils Campus Design for New North American Headquarters

Company Marks Latest 'One Toyota' Milestone with Launch of Transcontinental 'Ever-Better Expedition' to Inspire Team Members and Future Innovations

June 24, 2015 - PLANO, Texas, June 24, 2015 – Toyota Motor North America today unveiled architectural renderings of its future North American headquarters, providing new details of the site layout and exterior design of its environmentally sensitive corporate campus. In support of the Company's "One Toyota" vision, the renderings reveal buildings and outdoor spaces designed to create a collaborative environment that encourages discovery, transparency and creativity.

To mark the occasion, Toyota also launched the Ever-Better Expedition – the North American leg of a real-world, global driving project designed to support and unite Toyota's 330,000 worldwide team members in their mission to create ever-better vehicles. A convoy of Toyota vehicles left Plano today on a 110-day transcontinental journey that will allow Toyota engineers and other team members to feel the road, experience vehicle performance, connect with customers and gather new insights to inspire the design and development of future vehicles.

"Bringing our team members together at this striking and inspiring new campus in Plano will help Toyota become a more cohesive, collaborative and innovative company so we can serve our customers better," said Jim Lentz, CEO of Toyota's North America Region. "Our efforts to become One Toyota in North America go hand-in-hand with the goals of the Ever-Better Expedition, which embodies our passion for continuous improvement and sharing ideas so that we can deliver products that exceed our customers' expectations."

New Headquarters Inspired by 'One Toyota' Philosophy, Environmental Sustainability

Designed by Corgan Associates, the architectural renderings unveiled today and available at http://pressroom.toyota.com provide a number of different perspectives and details of the proposed Toyota campus in Plano, which includes:

- Seven buildings, up to five stories tall, arranged around a large central plaza that serves as the literal and symbolic heart of all social and business functions – including dining, fitness, and conferencing facilities;
- Building facades that are predominantly glass, with generous roof overhangs along the southern exposures to cast shade;
- Local and regional materials and low-water plantings that reflect the native landscapes of North Central Texas;
- Water features for catchment and storage of water for irrigation; and
- Parking structures and office buildings that can support solar panels for renewable energy production.

"Our work with some of the best designers, builders, architects – along with important input from our own team members – has inspired our thinking around how our new facilities can support and enhance the One Toyota Experience," said Lentz. "We also want to ensure our new headquarters supports Toyota's commitment to the environment through sustainable, environmentally sensitive and state-of-the-art design, materials, features and efficiencies."

Toyota intends to pursue LEED Platinum certification for the campus, the highest level of certification possible by the U.S. Green Building Council.

Ever-Better Expedition: Getting Out to Feel and Learn from the Road: Groups of Toyota engineers and other team members participating in the Ever-Better Expedition will drive a convoy of Toyota's best-known models across North America, tackling some of the continent's most challenging and inspiring driving environments, from California's Death Valley in summer to the icy roads of Alaska in winter, from Pike's Peak in Colorado to the streets of New York City. Along the way, they will also visit Daytona Beach, Route 66, Toyota manufacturing and research facilities, and the highways, avenues and back streets that customers across North America use every day.

The goal of the Expedition is to allow Toyota team members to get out from behind their desks and experience in the real world the vehicles they design, engineer, manufacture and sell -- taking what they learn from the road to inform the development of future generations of vehicles and deliver an ever-better driving experience to customers. The Expedition will also allow them to interact directly with North American customers to better understand their needs and how they use Toyota products.

The North America Expedition is the second leg of Toyota's Five Continents Driving Project. It that was inspired by Toyota President Akio Toyoda, whose passion for cars and the driving experience is revolutionizing the way that Toyota approaches product development and customer engagement. The first leg was organized and executed by Toyota Australia, where vehicles drove cross-country through Australia's diverse and rugged terrain, resulting in new product insights and valuable learning experiences for team members.

For the North American Expedition, Toyota is also introducing the Toyota Ultimate Utility Vehicle (UUV) – a custom-made Sienna body retrofitted on top of a Tacoma truck built for display at this year's Specialty Equipment Market Association (SEMA) conference. A Land Cruiser 200 will also travel the entire length of the North American Expedition and is the only vehicle that will travel to all of the continents included in the global tour.

In support of the North American Expedition, Toyota launched www.ToyotaEverBetter.com, where visitors can follow the Expedition's progress through the end of the year.

About Toyota: Toyota (NYSE:TM), the world's top automaker and creator of the Prius and the Mirai fuel cell vehicle, is committed to building vehicles for the way people live through our Toyota, Lexus and Scion brands. Over the past 50 years, we've built more than 25 million cars and trucks in North America, where we operate 14 manufacturing plants (10 in the U.S.) and directly employ more than 42,000 people (more than 33,000 in the U.S.). Our 1,800 North American dealerships (1,500 in the U.S.) sold more than 2.67 million cars and trucks (more than 2.35 million in the U.S.) in 2014 – and about 80 percent of all Toyota vehicles sold over the past 20 years are still on the road today.

Toyota partners with philanthropic organizations across the country, with a focus on education, safety and the environment. As part of this commitment, we share the company's extensive know-how garnered from building great cars and trucks to help community organizations and other nonprofits expand their ability to do good. For more information about Toyota, visit www.toyotanewsroom.com.

Toyota Motor Engineering and Manufacturing North America, Inc. (TEMA), headquartered in Erlanger, KY., is responsible for Toyota's engineering design, development, R&D and manufacturing activities in North America. TEMA's Toyota Technical Center (TTC) operates engineering, research and development facilities in Ann Arbor, MI, including Toyota's Collaborative Safety Research Center (CSRC).

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Elaine Steinfeld - Golin for Toyota - 972-341-2585/ 972-965-6817
esteinfeld@golin.com

2015 2nd China LS-DYNA User's conference

The 2nd conference will echo the success of the well-participated 1st China User's Conference , 2013.

The conference aims to prompt the interaction and communication between developers and end users.

Hosts:

Livermore Software Technology Corp.
Dalian Fukun Technology Development Corp.

Date: Nov. 9th -11th , 2015
Training: Nov. 12th -13th , 2015

Location:

InterContinental Shanghai Pudong,
Shanghai, China

The conference organizers wholeheartedly welcome your paper submission and attendance.

Paper submission:

Please send your one to two page abstract or full paper to chinaconf@lstc.com .

- Submission can be in Chinese or English.
- Submission of both Chinese and English versions are greatly appreciated but not mandatory.
- Include email address.

Abstract submission deadline:
Aug.10th , 2015
Notice of acceptance deadline:
Sept. 10th , 2015
Full paper submission deadline:
Oct. 10th , 2015
Conference website: http://www.lsdyna.cn
Contact us: chinaconf@lstc.com

In association with:

- ETA, Shanghai, China
- ARUP, Shanghai, China
- Hengstar Technology, Shanghai, China

Participation – Exhibits

Reserve your participation at the 2nd China LS-DYNA Users' Conference.
Contact: chinaconf@lstc.com

www.dynasupport.com/ **LS-DYNA Support**	Answers to basic and advanced questions that might occur while using LS-DYNA. New releases/ongoing developments.
www.dynalook.com/ **Papers**	Papers from LS-DYNA User Conferences with search option.
www.lsoptsupport.com/ **LS-OPT**	LS-OPT, developed by LSTC to interface with LS-DYNA
www.dummymodels.com/ **Dummy Models**	Detailed information on dummy models for LS-DYNA
www.topcrunch.org/ **Benchmarks**	Track the aggregate performance trends of high performance computer systems, with real data
www.dynaexamples.com/keyword-search **LS-DYNA Examples**	Examples for specific LS-DYNA keywords, with search option

BETA CAE Systems S.A. **www.beta-cae.gr**

BETA CAE Systems S.A.– 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 S.A.– μETA

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

Solutions for:

Process Automation - Data Management – Meshing – Durability - Crash & Safety NVH - CFD - Thermal analysis - Optimization - Powertrain Products made of composite materials - Analysis Tools -

Maritime and Offshore Design - Aerospace engineering - Biomechanics

CRAY **www.cray.com**

THE CRAY® XC™ SERIES: ADAPTIVE SUPERCOMPUTING ARCHITECTURE

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

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

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

MAXIMIZE PRODUCTIVITY WITH CRAY CS SERIES SUPERCOMPUTERS

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

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

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

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

CRAY www.cray.com

CRAY® SONEXION® SCALE-OUT LUSTRE®STORAGE SYSTEM

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

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

Simplify

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

Scale

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

Protect

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

OPEN ARCHIVE AND TIERED STORAGE SYSTEM FOR BIG DATA AND SUPERCOMPUTING

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

CRAY www.cray.com

With Cray TAS you can:

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

CRAY® URIKA-XA™ EXTREME ANALYTICS PLATFORM

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

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

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

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

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

CRAY www.cray.com

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

The Urika-GD™ appliance enables enterprises to:

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

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

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

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

Realize rapid time to powerful new insights.

DatapointLabs **www.datapointlabs.com**

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

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

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

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

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

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

Inventium Suite™

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

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

PreSys

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

VPG

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

DYNAFORM

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

ESI Group **www.esi-group.com**

Visual-Environment: An integrated suite of solutions which operate either concurrently or standalone within a common environment. It aims at delivering an open collaborative engineering framework. As such, it is constantly evolving to address various disciplines and available solvers.

Visual-Crash is a dedicated environment for crash simulation: It helps engineers get their job done in the smoothest and fastest possible way by offering an intuitive windows-based graphical interface with customizable toolbars and complete session support.

For LS-DYNA users, Visual-Crash DYNA allows to focus and rely on high quality digital models, from start to finish as it addresses the coupling with competitive finite element or rigid body based software. This very open and versatile environment simplifies the work of CAE engineers across the enterprise by facilitating collaboration and data sharing.

Further tools are integrated in Visual-Environment enhancing CAE engineers work tasks most efficiently.

Visual-Mesh generates 1D, 2D and 3D elements for any kind of simulation. Visual-Mesh provides automatic and guided surfaces clean up, application specific mesh generation and intuitive post mesh editing features..

Visual-Viewer is a complete, productive and innovative post-processing environment for CAE applications.

Visual-Viewer delivers a dedicated plotting and animation control solution. It offers a multi page, multi plot environment, allowing to group data into pages and plots. It is designed with a Windows GUI based on an intuitive and sleek user interface.

Visual-Process Executive is an advanced CAE environment for process customization and automation.

VisualDSS is an End-to-End Decision Support System for CAE. Manufacturers widely resort to Simulation-Based Design to gain a competitive edge in product development.

Gompute on demand®/ Gridcore AB Sweden

www.gompute.com **www.gridcore.se**

Gompute is owned, developed and operated by Gridcore AB in Sweden. Founded in 2002, Gridcore is active in three areas: Systems Integration, Research & Development and HPC as a service.

Gridcore has wide experience of different industries and applications, developed a stable product portfolio to simplify an engineer/scientist's use of computers, and has established a large network of partners and collaborations, where we together solve the most demanding computing tasks for our customers. Gridcore has offices in Gothenburg (Sweden), Stuttgart (Germany), Durham NC (USA) and sales operations in The Netherlands and Norway.

The Gridcore developed E-Gompute software for internal HPC resources gives end users (the engineers) an easy-to-use and complete environment when using HPC resources in their daily work, and enables collaboration, advanced application integrations, remote pre/post, accounting/billing of multiple teams, license tracking, and more, accelerating our customers usage of virtual prototyping

.

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

HYCRASH

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

JSTAMP/NV

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

JMAG

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

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

LS-DYNA

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

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

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

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

LSTC Dummy Models:

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

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

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

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

Oasys PRIMER

Key benefits:

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

www.oasys-software.com/dyna

Oasys D3PLOT

Key benefits:

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

Oasys T/HIS

Key benefits:

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

Oasys REPORTER

Key benefits:

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

Shanghai Hengstar

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

Lenovo www.lenovo.com

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

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

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

www.penguincomputing.com

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

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

HPC and cloud solutions optimized for industry-specific uses

High-powered workstations for individual power users

Highly power-efficient server platforms for enterprise computing

Private and public cloud solutions, including hybrid options.

Focus

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

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

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

Canada	**Metal Forming Analysis Corp MFAC** www.mfac.com		galb@mfac.com	
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	eta/VPG	
	eta/DYNAFORM	INVENTIUM/PreSys		
United States	**CAE Associates Inc.** www.caeai.com		info@caeai.com	
	ANSYS Products	CivilFem	Consulting ANSYS Consulting LS-DYNA	
United States	**DYNAMAX** www.dynamax-inc.com		sales@dynamax-inc.com	
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models		LSTC Barrier Models	

United States	**ESI-Group N.A** www.esi-group.com			
	QuikCAST	SYSWELD	PAM-RTM	PAM-CEM
	VA One	CFD-ACE+	ProCAST	Visual-Process
	VisualDSS	Weld Planner	Visual-Environment	IC.IDO
United States	**Engineering Technology Associates – ETA** www.eta.com		etainfo@eta.com	
	INVENTIUM/PreSy	NISA	VPG	LS-DYNA
	LS-OPT	DYNAform		
United States	**Gompute** www.gompute.com		info@gompute.com	
	LS-DYNA Cloud Service		Additional software	
	Additional Services			
United States	**Comet Solutions** Comet Software		steve.brown@cometsolutions.com	

United States	**Livermore Software Technology Corp**		sales@lstc.com	
	LSTC www.lstc.com			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	TOYOTA THUMS	

United States	**Predictive Engineering** www.predictiveengineering.com		george.laird@predictiveengineering.com	
	FEMAP	NX Nastran	LS-DYNA	LS-OPT
	LS-PrePost	LS-TaSC	LSTC Dummy Models	
			LSTC Barrier Models	

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

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

Germany	**DYNAmore GmbH**		uli.franz@dynamore.de	
	www.dynamore.de			
	PRIMER	LS-DYNA	FTSS	VisualDoc
	LS-OPT	LS-PrePost	LS-TaSC	DYNAFORM
	Primer	FEMZIP	GENESIS	Oasys Suite
	TOYOTA THUMS		LSTC Dummy & Barrier Models	

The Netherlands	**Infinite Simulation Systems B.V**		j.mathijssen@infinite.nl	
	www.infinite.nl			
	ANSYS Products	CivilFem	CFX	Fluent
	LS-DYNA	LS-PrePost	LS-OPT	LS-TaSC

Italy	**EnginSoft SpA**		info@enginsoft.it	
	www.enginsoft.it			
	ANSYS	MAGMA	Flowmaster	FORGE
	CADfix	LS-DYNA	Dynaform	Sculptor
	ESAComp	AnyBody	FTI Software	
	AdvantEdge	Straus7	LMS Virtual.Lab	ModeFRONTIER
Russia	**STRELA**		info@dynarussia.com	
	LS-DYNA	LS-TaSC	LS-OPT	LS-PrePost
	LSTC Dummy Models		LSTC Barrier Models	
Sweden	**DYNAmore Nordic**		marcus.redhe@dynamore.se	
	www.dynamore.se		Oasys Suite	
	ANSA	µETA	LS-DYNA	LS-OPT
	LS-PrePost	LS-TaSC	FastFORM	DYNAform
	FormingSuite		LSTC Dummy Models	
			LSTC Barrier Models	
Sweden	**GOMPUTE**		info@gridcore.com	
	www.gridcore.se		www.gompute.com	
	LS-DYNA Cloud Service		Additional software	

Switzerland	**DYNAmoreSwiss GmbH**		info@dynamore.ch	
	www.dynamore.ch			
	LS-DYNA		LS-OPT	LS-PrePost
	LS-TaSC		LSTC Dummy Models	
			LSTC Barrier Models	
UK	**Ove Arup & Partners**		dyna.sales@arup.com	
	www.oasys-software.com/dyna		TOYOTA THUMS	
	LS-DYNA		LS-OPT	LS-PrePost
	LS-TaSC	PRIMER	D3PLOT	T/HIS
	REPORTER	SHELL	FEMZIP	HYCRASH
	DIGIMAT	Simpleware	LSTC Dummy Models	
			LSTC Barrier Models	

China	**ETA – China**		lma@eta.com.cn	
	www.eta.com/cn			
	Inventium	VPG	DYNAFORM	NISA
	LS-DYNA	LS-OPT	LSTC Dummy Models	LS-PrePost
			LSTC Barrier Models	LS-TaSC
China	**Oasys Ltd. China**		Stephen.zhao@arup.com	
	www.oasys-software.com/dyna			
	PRIMER D3PLOT	HYCRASH	T/HIS REPORTER	SHELL
	LS-DYNA	LS-OPT	LSTC Dummy Models	LS-PrePost
	DIGIMAT	FEMZIP	LSTC Barrier Models	LS-TaSC
China	**Shanghai Hengstar Technology**		info@hengstar.com	
	www.hengstar.com			
	LS-DYNA	LS-TaSC	LSTC Barrier Models	D3VIEW
	LS-PrePOST	LS-OPT	LSTC Dummy Models	
	Genesis	VisualDoc		ELSDYNA
	Visual-Crahs DYNA	Visual-Proeces		DynaX & MadyX
	Enki Bonnet	Visual Environement		

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

India	**CADFEM Eng. Svce**		info@cadfem.in	
	www.cadfem.in			
	ANSYS	VPS	ESAComp	optiSLang
	LS-DYNA	LS-OPT	LS-PrePost	

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

Distribution/Consulting	Asia Pacific	Distribution/Consulting

Japan	**CTC**	LS-dyna@ctc-g.co.jp		
	www.engineering-eye.com			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	CmWAVE	
Japan	**JSOL**			
	www.jsol.co.jp/english/cae		Oasys Suite	
	JSTAMP	HYCRASH	JMAG	
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	TOYOTA THUMS	
Japan	**FUJITSU**			
	http://jp.fujitsu.com/solutions/hpc/app/lsdyna			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	CLOUD Services	
Japan	**LANCEMORE**	info@lancemore.jp		
	www.lancemore.jp/index_en.html			
	Consulting			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models		
Japan	**Terrabyte**	**English:**		
	www.terrabyte.co.jp	www.terrabyte.co.jp/english/index.htm		
	Consulting			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	AnyBody	

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	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			

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	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	**Flotrend**	gary@flotrend.tw		
	www.flotrend.com.tw			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM

Taiwan	**APIC**			
	www.apic.com.tw			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM

GOMPUTE
A GRIDCORE COMPANY

HPC on-demand for academic users

Run your LS-DYNA simulations and pay for what you use on a turn-key environment

- For LSTC academic customers.
- Run your simulations from 0.05 €/CCH without reservation
- Remote visualization using LS-PrePost
- Avoid installation and maintenance costs
- Other simulation applications also ready to use
- Global connectivity, remote graphics and collaborative environment
- Large number of cores available

For more information please visit: www.gompute.com

Price for computing-core/hour (CCH). Licenses and account set up are not included. Pricing valid only for universities, academic centers and research institutes. The following are trademarks or registered trademarks of Livermore Software Technology Corporation in the United States and/or other countries: LS-DYNA, LS-OPT, LS-PrePost, LS-TaSC. Gompute is owned and operated by Gridcore AB, 2012

www.gompute.com/services

Gompute offers a wide range of services enabling our customers to get the most out their HPC investments, enabling higher productivity. With our background and portfolio, we are well prepared to deliver true end to end solutions for you HPC environment.

Managed hosting: Gompute delivers managed hosting services for you infrastructure. We have long experience of managing demanding environments, and with our own Datacenter, have thorough control of the facilities.

HPC Advisory services: We are working closely with your team, to investigate, plan and propose action for your HPC environment. Gompute has large understanding of the needs and facts that needs to be targeted to ensure a successful project, taking into account key metrics for IT Dep, C-level exec and most importantly: the final users - the engineers

Training & Education: Gompute offers traning on several HPC and Engineering topics.

COMPREHENSIVE HIGH PERFORMANCE COMPUTING

Gompute is designed and developed to provide all the nuts, bolts and pre-fabricated solutions required to make your HPC a success.

Gompute provides cost effective solutions for a wide variety of problems experienced in enterprise HPC environments.

Enterprise HPC involves extensive planning, implementation and operation costs. Lot of these costs are incurred trying to make sure you have all the components required for a successful HPC environment and finally, hoping that the choices you made integrate seamlessly with each other to form a united HPC environment.

Gompute is the answer to tackle this problem, by providing all the solutions required to make your HPC a success, in one pre-integrated package. This will tremendously increase the ROI for your HPC resources.

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

Penguin HPC clusters are optimized for engineering workloads and offer:

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

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

POD Software Applications and Libraries (visit site for complete listing)
FEA, CFD and FDTD Modeling

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

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

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

JSOL Corporation is cooperating with chosen cloud computing services

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

LS-DYNA customers in industries / academia / consultancies are facing to the increase use of LS-DYNA more and more in recent years.

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

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

This service is offered to the customers by the additional price to existence on-premises license, which is relatively inexpensive than purchasing yearly license.

The following services are available

(only in Japanese).

HPC OnLine

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

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

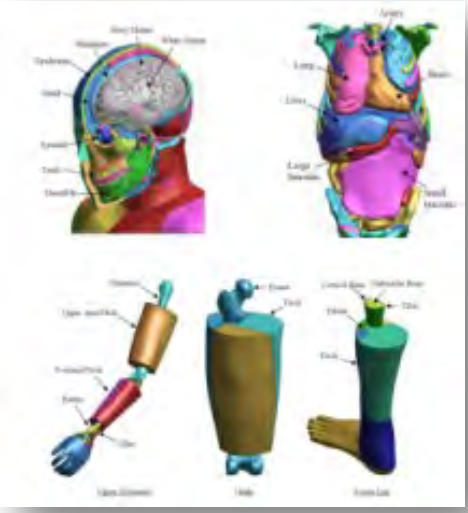
Platform Computation Cloud
CreDist.Inc.
http://www.credist.co.jp /

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

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

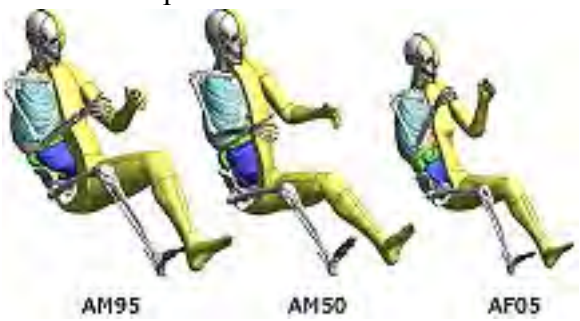
Contact; JSOL Corporation Engineering Technology Division cae-info@sci.jsol.co.jp

TOYOTA - Total Human Model for Safety – THUMS

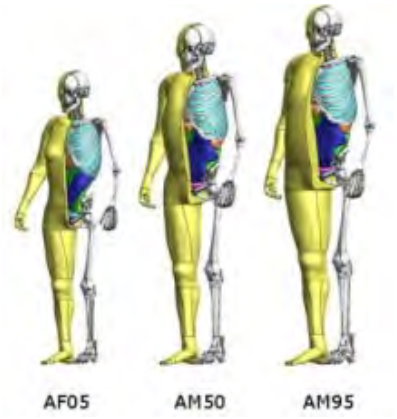


The Total Human Model for Safety, or THUMS®, is a joint development of Toyota Motor Corporation and Toyota Central R&D Labs. Unlike dummy models, which are simplified representation of humans, THUMS represents actual humans in detail, including the outer shape, but also bones, muscles, ligaments, tendons,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

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



and as standing model to represent pedestrians.



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

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

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

For information please contact:
THUMS@lstc.com

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

LSTC – Dummy Models

LSTC Crash Test Dummies (ATD)

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

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

e-mail to: atds@lstc.com

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

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

Models In Development

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

Planned Models

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

LSTC – Barrier Models

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

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

- ODB modeled with shell elements
- ODB modeled with solid elements
- ODB modeled with a combination of shell and solid elements

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

- IIHS MDB modeled with shell elements
- IIHS MDB modeled with solid elements
- RCAR bumper barrier

- RMDB modeled with shell and solid elements

e-mail to: atds@lstc.com.

 **FACEBOOK**

BETA CAE SYSTEMS SA CADFEM Cray Inc.

ESI Group Lenovo

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BETA CAE SYSTEMS SA CADFEM Cray Inc.

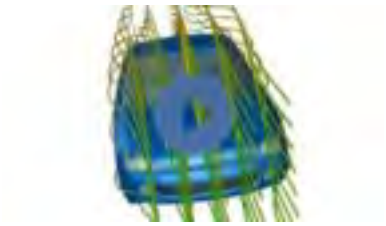
DYNAmore Nordic ETA Oasys

 **NEWS FEEDS** ETA:

YOUTUBE

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

Webinars and Videos on BETA Site and more On BETA CAE YouTube Channel:
https://www.youtube.com/betacae



Webinar on µETA for CFD

Introduction to the use of µETA for CFD post-processing through a live demonstration

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ANSA/µETA features for CFD pre- and post-processing

Overview presentation of the functionality of ANSA/µETA for CFD pre- and post-processing

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Introductory webinar on ANSA for CFD pre-processing

Introduction of the use of ANSA for CFD pre-processing through a live demonstration

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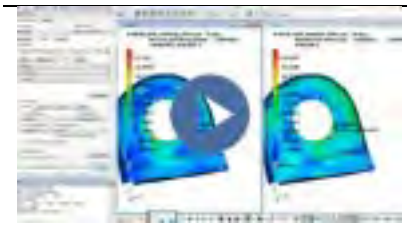

µETA Tutorials - How To Guides Playlist

Step-by-step tutorials - for post-processing tasks with µETA

Introduction to the ANSA Kinetics Tool

Introductory presentation of the capabilities of the new ANSA Kinetics Tool

Fracture, Damage and Failure Using LS-DYNA - NEW COURSE OFFERING

This course will allow LS-DYNA users to model Fracture, Damage, and Failure. The different methodology to model failure and fracture in LS-DYNA will be presented and discussed. All formulation in LS-DYNA including Lagrangian, Eulerian, SPH, SPG, XFEM, EFG, and the DEM methods etc. will be discussed. Various examples will be presented.

Course Outline

- Chapter-1
  Introduction & Historical Review
  - Brittle Failure
  - Ductile Failure
- Chapter-2
  Fundamental Theoretical Concepts
  - Failure Theories
  - Damage Models
  - Fracture Mechanics
- Chapter-3
  Material Models with Failure & Damage
- Chapter-4
  Fracture & Computational Methods
- Chapter-5 Element Erosion; Advantages & Short Comings
- Chapter-6
  Current Capabilities to Model Failure & Damage
  - Lagrangian
  - Eulerian & ALE
  - SPH
  - SPG
  - XFEM
  - EFG
  - DEM
- Chapter-7
  Current Capabilities to Model Fracture
- Chapter-8
  Damage Verification Examples
- Chapter-9
  Fracture Verification Examples

California

Composite LS-DYNA
July 7-8

Implicit
July 9-10

Umat LS-DYNA
July 16-17

Blast in LS-DYNA
July 28-29

Penetration in LS-DYNA
July 30-31

Intro to LS-PrePost -
August 3

Adva. Impact Options in LS-DYNA
Aug 11-12

Contact LS-DYNA -
Aug 13-14

ALE/Eulerian & Fluid/Structure Interaction in LS-DYNA Aug 17-19

SPH: Smoothed Particle Hydrodynamics in LS-DYNA Aug 20-21

Germany	**CADFEM GmbH**	www.cadfem.de
Germany	**DYNAmore**	www.dynamore.de/en
US	**LSTC**	www.lstc.com
US	**ETA**	www.eta.com
US	**Cae Associates**	www.caeai.com
Sweden	**DYNAMORE Nordic**	www.dynamore.se
France	**DynAS+**	www.dynasplus.com
Thailand	**DFE-Tech**	www.dfe-tech.com/training.html
UK	**ARUP**	www.oasys-software.com/dyna/en/training

KOSTECH Successful seminar Explosion Analysis KOSTECH

By Anna Choi – KOSTECH

A Seminar-Explosion Analysis by LS-DYNA

A Seminar-Explosion Analysis by LS-DYNA was held by KOSTECH last month. The attendees were from industry, education, etc. and were able to learn and exchange ideas and meet others using LS-DYNA.

Among the attendees were Samsung, STX, ADD, NFS, Korean register of shipping and others.

The interest in this seminar is always high and the session titles covered:

- The analysis comparison of Hydro Code(Explosion)
- The way to define explosive for application of Loading Condition
- The way to define the target building of explosion.
- The suggested methodology of explosion analysis by LS-DYNA.
- Response Analysis of impact resistance for concrete explosion.

Please find the link below about the seminar.

http://kostech.co.kr/skin17/sub_page.php?page_idx=269