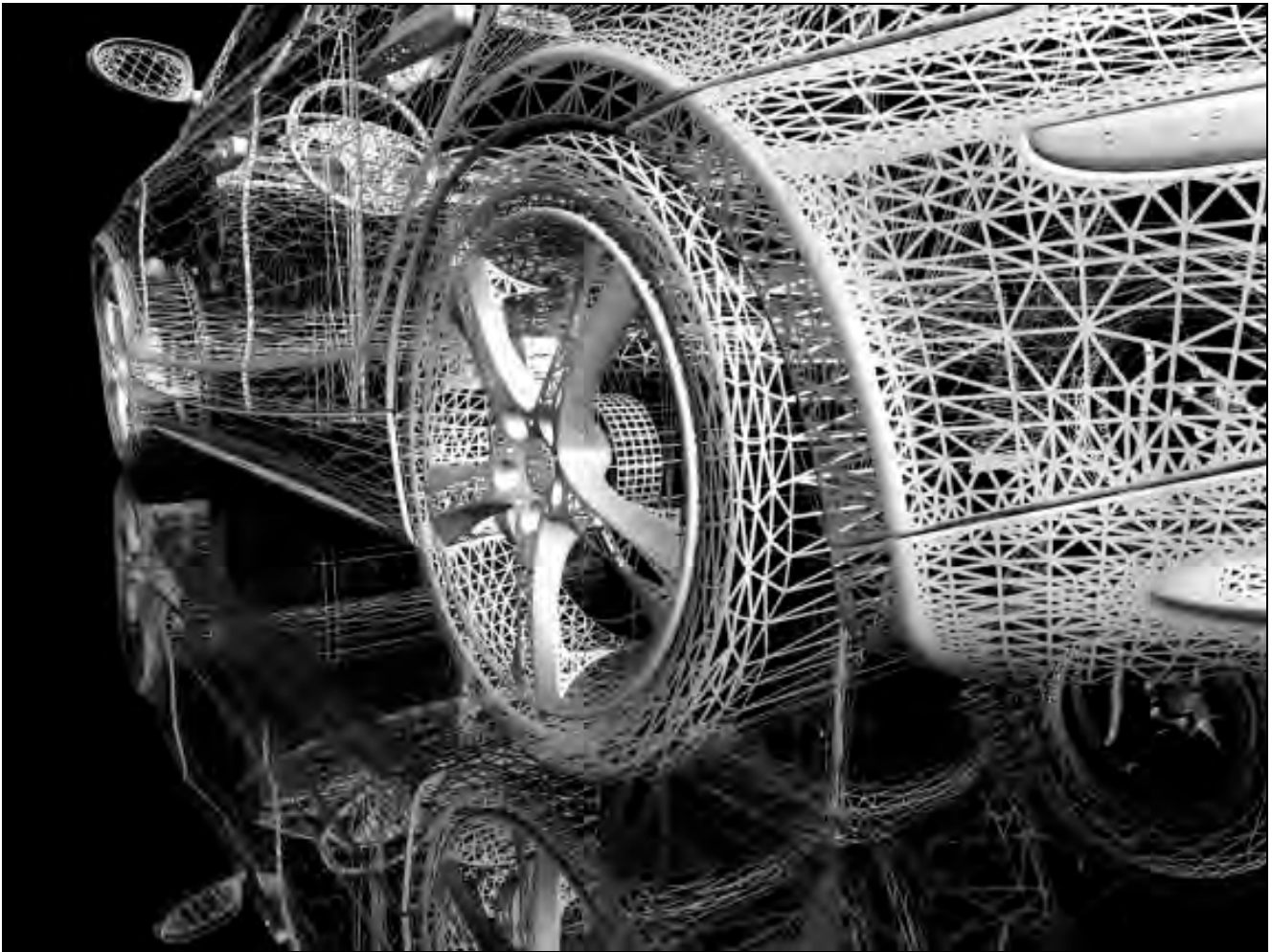


FEA Information Engineering Solutions
FEA Information Engineering Journal
Volume 1, Issue 1, February 2012



FEA Information Engineering Solutions:

Respirator Modeling; Fit (LS-DYNA) and Function (CF Design)
LS-DYNA Frequency Domain Analysis
GSA Used in Melbourne Olympic Park Stadium

FEA Information Engineering Journal Publication:

How to Use LS-OPT for Parameter Estimation – hot stamping and quenching applications - Arthur Shapiro, LSTC, Livermore, CA, USA.



Global Solution Leaders

Platinum Participants



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www.cray.com



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www.eta.com



www.esi-group.com



www.gns-mbh.com/



<http://gridcore.se>



www.hengstar.com/



www.jsol.co.jp/english/cae



www.lstc.com



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

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Department 7 – FEA Information Engineering Journal



FEA Information Engineering Journal Presents:

How to Use LS-OPT for Parameter Estimation – hot stamping and quenching applications - Author: Arthur Shapiro, LSTC

FEA Information Engineering Solutions

ANNOUNCEMENTS

FEA Information Engineering Solutions, China

Last week we were pleased to launch FEA Information Engineering Solutions - China. April's issue will be available in Traditional and Simplified Chinese.

The focus is LS-DYNA including LSTC's products:

LS-OPT, LS-PrePost, LS-TaSC, LSTC Dummy Models and LSTC Barrier Models.

Directly sign up: send your e-mail information to yanhua@feainformation.com

New FEA Participant

DYNAMore Swiss GmbH – Direct LSTC distributor for Switzerland & Liechtenstein
Bernd Hochholdinginger - www.dynamore.ch info@dynamore.ch
Technoparkstrasse 1, 8005 Zurich, Switzerland

New Department & New Publication: Dept 7 – Engineering Journal

Monthly our editors showcase papers from alternative publications that we have authorization to reprint. Additionally, we will publish papers from students, engineers, and professionals in the engineering community, not previously published. The engineering journal focuses on LS-DYNA and interfacing solutions

Courtesy Note: March 13-14, 2012 DIGIMAT Tech Days, Troy, MI, USA

Changes will continue in our formatting for both FEA Information Engineering Solutions and FEA Information Engineering Journal during this transitional growth period.

Best Regards,

Marsha Victory

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Subject Line: Membership FEA

Advanced Impact Using LS-DYNA

Instructor: Suri Bala

www.lstc.com/training/advanced_impact

April 24-26
Tues - Thurs

LS-DYNA® Frequency Domain Analysis

Instructor: Yun Huang, Ph.D. (LSTC)

12th International LS-DYNA Users Conference

[Course Outline](#) (pdf)

June 6th & 7th
Wed - Thurs

Applications:

NVH of automotive/airplane
Acoustic design and analysis
Defense industry
Fatigue of machine/engine
Civil engineering

Features:

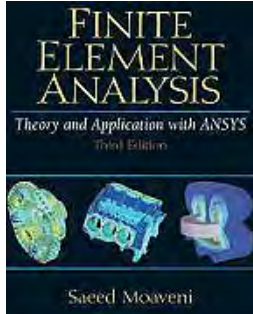
Random Vibration
Random Fatigue
Frequency Response Function
Steady state dynamics
Response Spectrum Analysis
BEM Acoustics
FEM Acoustics

Muffler Transmission Loss	Keyword *FREQUENCY_DOMAIN_ACOUSTIC_BEM
Correlated excitations in random vibration	Keyword *FREQUENCY_DOMAIN_RANDOM_VIBRATION
Nodal Force/Resultant Force in FRF	Keyword *FREQUENCY_DOMAIN_FRF
Response Spectrum Analysis	Keyword *DATABASE_NODAL_FORCE_GROUP
Response Spectrum Analysis	Keyword *FREQUENCY_DOMAIN_RESPONSE_SPECTRUM
Calculates Peak values of response An Alternative for response history analysis Binary plote file: d3spcm Application: Seismic Analysis & Structure Design Mode Combination Methods: SRSS Method CQC Method NRC Grouping Method NRL-SUM Method New: Double Sum Method	

For A 30-day no-fee demonstration license of
LS-DYNA, including LS-PrePost, LS-OPT, LS-TaSC,
LSTC Barrier Models and LSTC Dummy Models
contact info@lstc.com



Reference Library



[Finite Element Analysis Theory and Application with ANSYS \(3rd Edition\)](#)

Saeed Moaveni



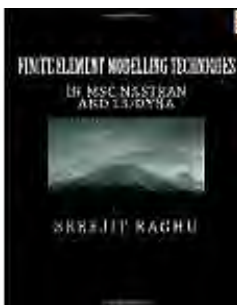
[Practical Stress Analysis with Finite Element](#)

Bryan J Mac Donald



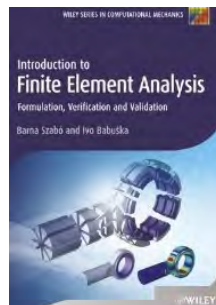
[A First Course in the Finite Element Method](#)

Daryl L. Logan



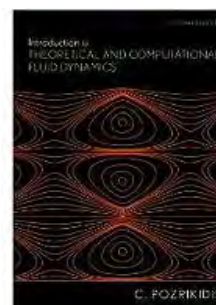
[Finite Element Modelling Techniques in MSC.NASTRAN and LS/DYNA](#)

Sreejit Raghu



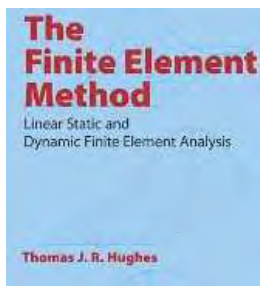
[Finite Element Analysis/formulation & verification](#)

B. A. Szabo



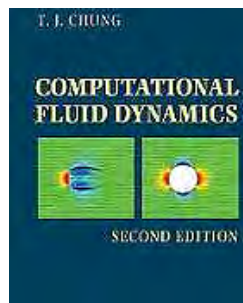
[Introduction to Theoretical and Computational Fluid Dynamics](#)

C. Pozrikidis



[The Finite Element Method](#)

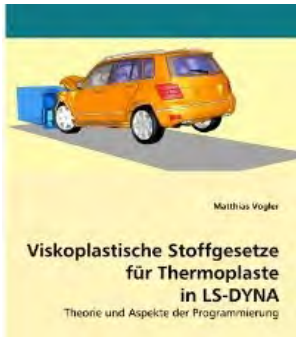
Thomas J. R. Hughes



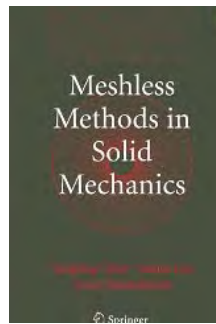
[Computational Fluid DynamicsU](#)

T. J. Chung

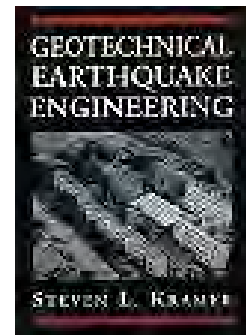
Reference Library



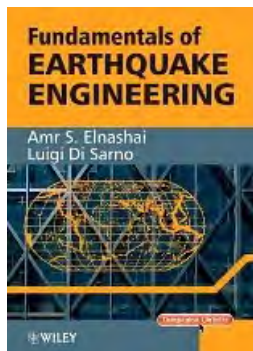
[Viskoplastische Stoffgesetze für Thermoplaste in LS-DYNA: Theorie und Aspekte der Programmierung](#)
Matthias Vogler



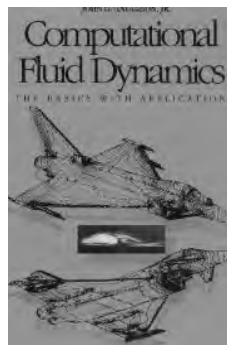
[Meshless Methods in Solid Mechanics](#)
Youping Chen



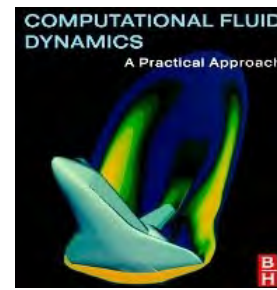
[Geotechnical Earthquake Engineering](#)
Steven Lawrence Kramer



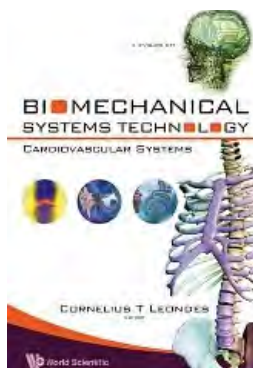
[Fundamentals of Earthquake Engineering](#)
Amr S. Elnashai



[Computational Fluid Dynamics](#)
John David Anderson



[Computational Fluid Dynamics: A Practical Approach \[Paperback\]](#)
Guan Heng Yeoh



[Biomechanical Systems Technology: Computational Methods](#)
Cornelius T. Leondes



Top Crunch.Org

www.topcrunch.org

The TopCrunch project was initiated to track the aggregate performance trends of high performance computer systems and engineering software. Instead of using a synthetic benchmark, actual engineering software applications are used with real data and are run on high performance computer systems. The data are available for download in the form of data files for our current software suite. With time, we expect to

track the evolution of delivered performance as a function of enhancements in both software algorithms and hardware. The results of the benchmarks are available as submitted, and may be searched by data, code name, and year. Summaries and overall rankings are posted twice per year following the precedent set by TOP500.

Vendor/Submitter Org. ARD/ARD

Computer/Interconnect: Ci11T/QDR InfiniBand

Processor: Intel i7 2700K

Date: January 18, 2012

<u>#Nodes x #Processors per Node x #Cores Per Processor = Total #CPU</u>	<u>Time (Sec)</u>	<u>Benchmark Problem</u>
6 x 1 x 2 = 12	395	Neon refined
6 x 1 x 2 = 12	405	Neon refine revised
4 x 1 x 2 = 8	547	Neon refined
3 x 1 x 2 = 6	720	Neon refined
3 x 1 x 2 = 6	738	Neon refine revised
6 x 1 x 2 = 12	5088	3 Vehicle Collision
4 x 1 x 2 = 8	7505	3 Vehicle Collision
3 x 1 x 2 = 6	9943	3 Vehicle Collision
6 x 1 x 2 = 12	45155	car2car
4 x 1 x 2 = 8	68543	car2car

Respirator Modeling; Fit (LS-DYNA) and Function (CF Design)



NIST

Predictive Engineering

For original Power Point Presentation:

<http://www.predictiveengineering.com/consulting/projects/lodyna/respirator/index.html>

Engineering Safety

Respirator masks have historically been designed with lots of silicone rubber to slop over a range of faces. This works adequately for many facial sizes but not for all. For face profiles that don't follow the norm, the use of respirators can lead to a false sense of security due to air leakage or a contamination threat. The National Institute of Science and Technology has been engaged in a multi-year program to improve the safety and effectiveness of full-face respirator masks. To meet some impending deadlines on this project, Predictive Engineering was competitively awarded an investigative project to study the fit and function of an industry standard respirator mask. A key finding of this work was that the modeling of human skin is best represented as a flexible bag of viscous fluid and not as an semi-elastic solid as has been done in prior work external to NIST. CFD studies also indicated that air flow within the respirator mask is not optimized and could be improved with some minor geometric changes. These and other findings are scheduled for publication under the NIST banner.

Model Details:

The project involved the complete analysis of the fitting process between a respirator mask and a human head. The respirator seal geometry was provided as IGES data generated from laser scanning process over the original respirator. Head geometry was likewise provided in a similar format. Femap was able to parse the skins together and create a clean manifold skin that facilitated a quad-dominate mesh for the respirator and likewise a smooth tet mesh for the head. This model was then submitted to LS-DYNA for a complete fit and contact analysis. The mast was actually pulled against the face and allowed to seal. Seal pressures were then generated.

For functional analysis, a transient CFD analysis was performed using CFdesign. This was quite tricky since the original geometry was not quite representative of the flow passage within the respirator. With some cleanup help from Femap, a clean model was then submitted to CFdesign. It was impressive how well CFdesign handled the transient flow conditions for inhalation and exhalation through the use of ramped flow-rate curves. CFD results were checked for convergence with the mass balance error under 1%.

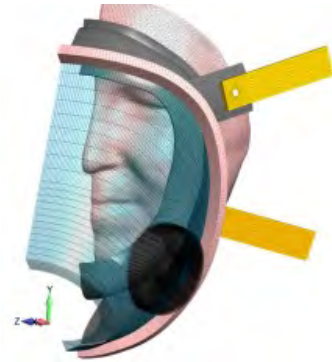
Respirator Modeling; Fit (LS-DYNA) and Function (CF Design) NIST Predictive Engineering

Analysis Tools:

The model was constructed in Femap v10.1.1 and analyzed with LS-DYNA V5.0 and CFdesign v2010

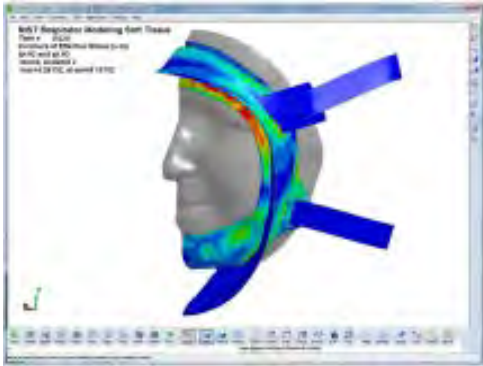


One can imagine that a loose fitting mask is actually more dangerous than no mask at all. Mask fit is something of a dirty secret in the respirator business since many non-standard facial sizes (e.g., young children) are problematic to obtain air-tight seals without pulling so hard on the straps that severe discomfort quickly incurs.

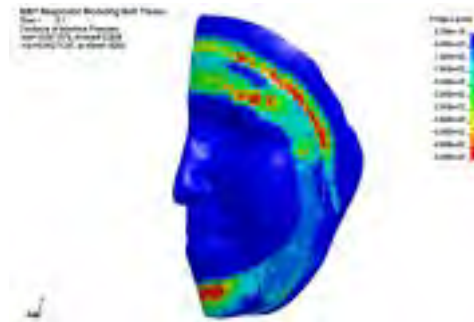


The contact behavior between the silicone rubber respirator seal and human skin was analyzed using LS-DYNA. The same constitutive model for the silicone rubber and human skin (*mat 181 simplified rubber) was used, albeit with different properties.

Respirator Modeling; Fit (LS-DYNA) and Function (CF Design) NIST Predictive Engineering



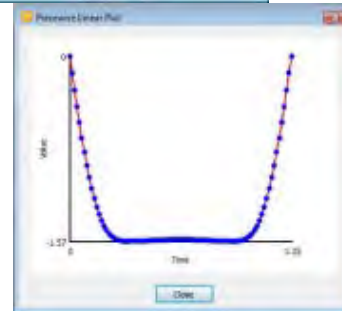
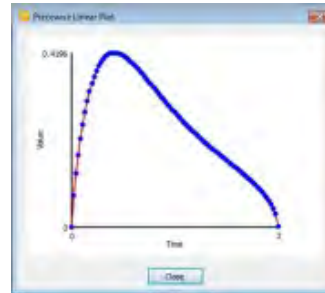
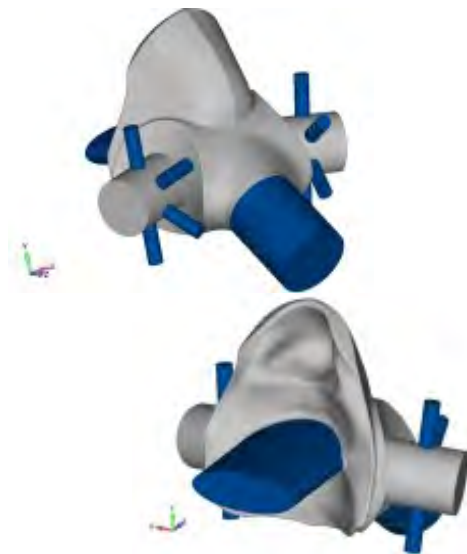
The LS-DYNA run pushes the head against the silicone seal as the straps are being pulled backward with a displacement function. Fit pressures were calculated at various strap pressures to optimize the fit function of the respirator mask.



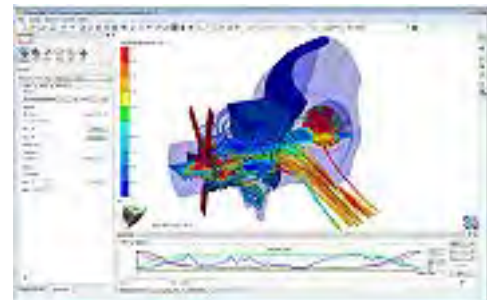
Contact pressures can be generated within LS-DYNA through the use of a specialized keyword that provides the true pressure field generated during contact between the silicone rubber and pseudo human skin.

Respirator Modeling; Fit (LS-DYNA) and Function (CF Design) NIST Predictive Engineering

The transient inhalation and exhalation curves were used as the boundary conditions for the CFD analysis. The geometry on the right represents the starting point for the transient flow analysis. Extensions to the original respirator geometry were added within Femap to prevent undesired flow turbulence.



The inhalation model at the working respiration rate is shown above. The convergence traces at the bottom of the image shows a stable transient analysis run with little variance during the solution. The graphic above shows the flow lines at a time of 0.75 second.



Additional Consulting projects visit:
<http://www.predictiveengineering.com>

NVH, Frequency Domain, Durability and Vibro-Acoustics Analysis with LS-DYNA



LSTC – info@lstc.com www.lstc.com

During the week of February 6, 2011, LSTC offered the first NVH class. NVH is an acronym for “Noise, Vibration and Harshness”.

The two-day class was taught by Dr. Yun Huang at LSTC’s California offices. NVH, frequency domain, and vibro-acoustic simulations are performed extensively by automotive and aerospace engineers worldwide who are charged with analyzing interior noise, exterior radiated noise, passing-by noise, vibration, and BSR (buzz, squeak, and rattle) as well as machine vibration and testing simulations.

For more than a decade, nonlinear time domain NVH and durability analyses have represented significant automotive applications of LS-DYNA. The more traditional approach to solving these problems, which dates back many decades, assumes linearity with the analysis performed in the frequency domain. During the past sixteen years, LSTC extended most explicit capabilities related to structures for implicit solutions. Also, linear elements and eigenvalue-eigenmode extractions were added, with the capability to create or import superelements for representing structural components whose geometry is not needed. Since 2008, Dr. Huang has worked exclusively in expanding these later linear capabilities within LS-

DYNA and developed the acoustic boundary element method (BEM) solver. In 2011, Dr. Zhe Cui, a second engineer dedicated to implementing and supporting these frequency domain LS-DYNA features, joined LSTC.

Applications of frequency domain analysis

1. Vehicle NVH
 - Interior noise
 - Exterior radiated noise
 - Passing by noise
 - Vibration
 - BSR (Buzz, Squeak and Rattle)
2. Aircraft / space craft vibro-acoustics
3. Engine noise simulation
4. Structural vibration
5. Earthquake engineering
6. Response spectrum
7. Off-shore engineering, wind turbine, etc.

Frequency Domain Analysis

- Continuing developments
- Random vibration
 - Frequency response function
 - Steady state dynamics
 - BEM Acoustics
 - FEM Acoustics

For additional information:

info@lstc.com



Melbourne Olympic Park Stadium COX Architects & Arup Engineers

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Part of the ARUP group

High resolution graphics and article - <http://www.oasys-software.com/casestudies?id=4/>

Software Used on this Project- * GSA Analysis * GSA Building * GSA Suite

Project Overview



Though Melbourne already has a world class stadium to population ratio (WCSPR) of about one to one hundred, the sleeping giant soccer (aka football) recently woke up and noticed through bleary eyes that this sports-mad city did not yet have a world class soccer facility in its proverbial trophy cabinet.

Now under construction, this new stadium will allow soccer and rugby fans to get close to the action like never before, rather than conforming to the geometric restrictions of Melbourne's much-beloved oval pitch stadiums,

where 'Aussie Rules' football and cricket reign supreme.

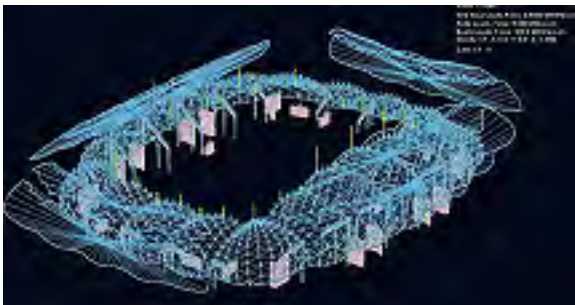
COX Architects, working alongside Arup as structural engineers designed a 'bioframe' roof, comprising a single structural layer of steel tubes that use a combination of arch, cantilever and shell actions for stability. With the structural mass of the roof weighing in at only 45 kg/m², it makes many a lesser stadium look positively flabby in comparison.

How GSA Was Used

GSA, with its user-friendly interface and wide range of analysis functions, was an integral part of realising this lightweight roof. In the initial stages of the project the wireframe of the complex geometry was imported directly into GSA using .DXF file format, ensuring consistency between architectural and analysis models.

Melbourne Olympic Park Stadium COX Architects & Arup Engineer

Once the geometry was established, GSA's grid loading capabilities allowed roof member loads to be input (and amended) more quickly than if line loads were individually applied to each element.



to inform calibration of wind tunnel tests, modal analysis was used to estimate the natural frequency of the roof structure, the results of which were fed back into the analysis model for use in checking strength and serviceability criteria.

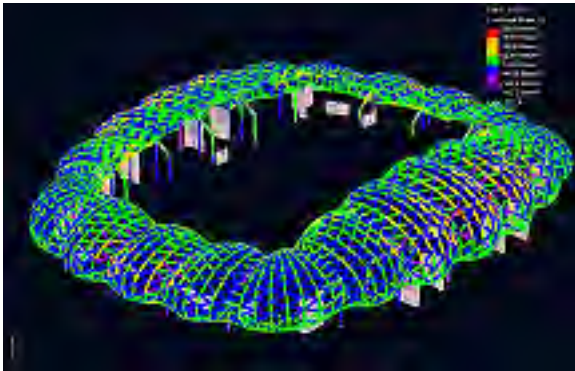
To assess whether each of the CHS members (over 4000 in total) had adequate strength, and in order to

account for the buckling behaviour of the bioframe, the 'Dallard Method' was adopted. The 'Dallard Method' is ideally suited to analysis using GSA, as it makes use of GSA's P-Delta and buckling solvers. As part of this process it was necessary to have an analysis package that is capable of re-calculating the stiffness of the structure in its displaced conditions, and GSA was again able to deliver.

Conveniently, the buckled mode shapes and associated displacements are already normalised, ready for direct application to Dallard's method of buckling assessment. Also beneficial was GSA's graphic output, such as deflected shape and displacement contours, as it allowed clear identification of the effective length of each mode shape. Furthermore, the ease with which load cases and design actions are able to be enveloped within GSA was a factor in reducing the time required for analysis.

Melbourne Olympic Park Stadium COX Architects & Arup Engineer

When checking the final load combinations, the ability to plot combined stress contours meant structural adequacy could be quickly ascertained.



Throughout all stages of analysis, GSA's ability to easily import and output data in spreadsheet format was crucial, and its user-friendly and excellent graphic representations allowed the model to be quickly manipulated and understood.



NAFEMS is an independent not-for-profit body with the sole aim of promoting the effective use of engineering simulation methods such as finite element analysis, multibody system dynamics and computational fluid dynamics.

NAFEMS has one clear vision - the safe and reliable use of analysis and simulation technology. Over the past 25 years, it has been our mission to:

- facilitate international industry,
- academic and government collaboration that leverages unbiased multi-disciplinary engineering expertise
- improve product and process simulation
- have a positive impact on quality, profitability, schedules and safety

An important part of our mission is listening to the needs of the community and paying close attention to any emerging interests. Our working groups, consisting of more than 300 NAFEMS members, identify areas of interest to the analysis community that require educational materials to be developed which ensures our vision evolves in line with the needs of our members and the wider simulation community. More information can be found at www.nafems.org

The Composites Working Group

The Composites Working Group has been formed recently to try to support the usage of Composites in FEA. The group includes several of the leading practitioners in the field of Composites in FEA. The type of activities being researched, by the group include:

- how to select the best topics for introductory type guides,
- more detailed publications,
- training and seminars.

To try to understand the typical usage and issues concerning engineers at the moment, the Working Group has designed an online survey. The individual contribution is confidential and only the overall trends will be published. These results will be available to anyone who takes part.

We are hoping you will be able to find the time to complete the Survey at the link given below.

<http://www.surveymonkey.com/s/nafemscwgsurvey2012>

Best regards from the NAFEMS Team.



New Participant Introduction Dynamore Swiss GmbH

LSTC is pleased to announce the appointment of a direct distributor in Switzerland to accommodate the local use of LSTC's suite of software products in Switzerland and Liechtenstein.

Located in TECHNOPARK® in Zurich, DYNAMore Swiss GmbH was founded by Bernd Hochholdinger and DYNAMore GmbH during Q4-2011.



The new distributorship is managed by Bernd Hochholdinger, who has over 10 years of experience using LS-DYNA, LS-PrePost and LS-OPT for metal forming crash and impact simulations, as well as consulting for DYNAMore Germany.

Among the focus of the new company will be:

- Solving nonlinear mechanical problems with finite element simulations
- Solving coupled thermo-mechanical problems with finite element simulations.
- Software sales, Support, Training & consulting:
 - LS-DYNA;
 - LS-PrePost the pre postprocessor,
 - LS-OPT for design optimization and reliability analysis,
 - LS-TaSC for topology and shape optimization
 - LSTC's ATD and Barrier Models

As a qualified spin-off company of the ETH Zurich, DYNAMore Swiss GmbH has now moved into its new premises and can be contacted for LS-DYNA.

Further information:

DYNAMore Swiss GmbH
Technoparkstrasse 1
CH-8005 Zurich, Switzerland
phone.: +41-(0)44-6336162
fax: +41-(0)44-6331394
info@dynamore.ch
www.dynamore.ch



BETA CAE Systems S.A.– ANSA

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

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



Participant Solutions

CRAY

www.cray.com

The Cray XK6

The Cray XK6 supercomputer combines Cray's proven Gemini interconnect, AMD's leading multi-core scalar processors and NVIDIA's powerful many-core GPU processors to create a true, productive hybrid supercomputer

Cray XE6™ and Cray XE6m™ Supercomputers

The Cray XE6 scalable supercomputer is engineered to meet the demanding needs of capability-class HPC applications. The Cray XE6m is optimized to support scalable workloads in the midrange market.

Cray XMT™ System

The Cray XMT supercomputing system is a scalable massively multithreaded platform with a shared memory architecture for large-scale data analysis and data mining. The system is purpose-built for parallel applications that are dynamically changing, require

random access to shared memory and typically do not run well on conventional systems.

Cray CX1000™ High(brid) Performance Computers

The Cray CX1000 series is a dense, power efficient and supremely powerful rack-mounted supercomputer featuring best-of-class technologies that can be mixed-and-matched in a single rack – creating a customized hybrid computing platform to meet a variety of scientific workloads.

Cray Sonexion 1300™ Storage System

The Cray Sonexion 1300 system is an integrated, high performance storage system that features next-generation modular technology to maximize the performance and capacity scaling capabilities of the Lustre file system.

Cray also offers custom and third-party storage and data management solutions

Participant Solutions
DatapointLabs



www.datapointlabs.com

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

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

DatapointLabs maintains a world-class testing facility with expertise in physical

properties of plastics, rubber, food, ceramics, and metals.

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

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



Participant Solutions

ETA – Engineering Technology Associates

www.eta.com

Inventium Suite™

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

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

PreSys

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

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

VPG

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

DYNAFORM

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



Visual-Crash

Visual Crash for LS-DYNA helps engineers perform crash and safety simulations in the smoothest and fastest possible way by offering an intuitive windows-based graphical interface with customizable toolbars and complete session support. Being integrated in ESI Group's Open VTOS, an open collaborative multi-disciplinary engineering framework, Visual-Crash for DYNA allows users to focus and rely on high quality digital models from start to finish. Leveraging this state of the art environment, Visual Viewer, visualization and plotting solution, helps analyze LS-DYNA results within a single user interface.

vibro-acoustic software

With ESI's vibro-acoustic software you no longer have to account for noise and vibration right at the design stage - no more costly

delays or panic driven test-based solutions. Our vibro-acoustic software has everything you need to diagnose potential noise and vibration problems up front in your development process. Manage risk by identifying possible problem areas that may need more detailed modeling or test based development, while you still have time to make an impact on the product!

VA One

VA One is a complete solution for simulating the response of vibro-acoustic systems across the full frequency range. VA One seamlessly combines Finite Elements (FE), Boundary Elements (BEM) and Statistical Energy Analysis (SEA) in ONE model. It is the only simulation code on the market today that contains the complete spectrum of vibro-acoustic analysis methods within ONE common environment.



Participant Solutions GNS - Gesellschaft für Numerische Simulation mbH

www.gns-mbh.com

Animator4

A general finite element post-processor and holds a leading position in its field. Animator4 is used worldwide by almost all automotive companies, a great number of aerospace companies, and within the chemical industry.

Generator2.

A specialized pre-processor for crashworthiness applications and has become very successful in the field of passenger safety and pedestrian protection. It is mainly used as a positioning tool for finite element component models by a great number of automobile companies throughout the world.

Indeed

An easy-to-use, highly accurate virtual manufacturing software that specializes in the simulation of sheet metal forming processes. Indeed is part of the GNS software suite and works concurrently with all other GNS software products.

OpenForm

A pre- and post-processor independently of a particular finite element forming simulation package. The software is extremely easy to handle and can be used as was designed to enable those who are not finite element experts to carry out multi-stage forming simulations with even complex multi purpose finite element codes.

**Participant Solutions
Gompute on demand®
Gridcore AB in 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.



Participant Solutions 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



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-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



Participant Solutions Oasys, Ltd

www.oasys-software.com/dyna

Oasys LS-DYNA® Environment

The Oasys Suite of software, exclusively written for LS-DYNA®, is at the leading edge of the market and is used worldwide by many of the largest LS-DYNA® customers.

Oasys PRIMER

Oasys PRIMER is a model preparation tool that is fully compatible with the latest version of LS-DYNA®, eliminating the risk of data loss or corruption when a file is manipulated, no matter what operations are performed on it:

Key benefits:

- Maintains data integrity
- Finds and fixes model errors (currently over 5000 checks)
- Specialist tools for dummy positioning, seatbelt fitting, mechanisms, interior head impact etc.
- Connection manager for spotwelds, bolts, adhesive etc.
- Intelligent editing, deletion and merging of data
- Customisable with macros and JavaScript.

Oasys D3PLOT

Oasys D3PLOT is a powerful 3D visualization package for post-processing LS-DYNA® analyses

Key benefits:

- Fast, high quality graphics
- Easy, in-depth access to all LS-DYNA® results.
- User defined data components
- Customisable with JavaScript.

Oasys T/HIS

Oasys T/HIS is an X-Y graph plotting package for LS-DYNA®

Key benefits:

1. Automatically reads all LS-DYNA® results.
2. Wide range of functions and injury criteria.
3. Easy handling of data from multiple models
4. Scriptable for automatic post-processing

Oasys REPORTER

Oasys REPORTER is an automatic report generation tool, for use with LS-DYNA®, which allows fast automatic report creation for analyses.



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, Hengstar Technology will continue to organize high level training courses and seminars in 2012.

The lectures/training are taught by senior engineers and experts mainly from LSTC, Carhs, OEMs, and other consulting groups.

On Site Training

Hengstar also provides customer customized training programs on-site at the company facility. Training is tailored for company

needs using LS-DYNA or the additional software products by LSTC.

Distribution & Support

Hengstar Distributes and supports LS-DYNA, LS-OPT, LS-PrePost, LS-TaSC. Hongsheng Lu, previously was directly employed by LSTC before opening his distributorship in China for LSTC software. He travels to LSTC often to keep current on the latest software features and support to continue to grow Hengstar as a CAE consulting group.



Participant Solutions

Products

ANSA	TestPaks®	LS-PrePost	CRAY XE6m™
Inventium Suite™	CRAY XK6	HYCRASH	LS-TaSC™
Animator 4	TOYOTA THUMS	CRAY XE6™	PreSys
CRAY CX1000™	Visual Crash	Generator 2	VPG
JMAG	VA One	DYNAFORM	LSTC Dummy Models
LS-DYNA	CRAY Sonexion 1300™	Indeed	Vibro-Acoustic Software
OpenForm		Oasys Primer	
JSTAMP/NV	GOMPUTE Cloud		LSTC Barrier Models
Oasys D3Plot	μETA		Oasys T/HIS



North America Distribution – Consulting

**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**

CAE Associates Inc.

www.caeai.com

info@caeai.com

ANSYS Products

CivilFem

Consulting ANSYS

Consulting LS-DYNA

**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

Europe Distribution – Consulting



France	Alliance Svce. Plus - AS+ www.asplus.fr/ls-dyna	v.lapoujade@asplus.fr	LS-DYNA DYNAFORM LSTC Dummy Models	LS-OPT VPG	LS-PrePost MEDINA LSTC Barrier Models	LS-TaSC
France	ALYOTECH www.alyotech.fr	nima.edjtemai@alyotech.fr	ANSYS Primer MERCUDA	LS-DYNA PreSys MOCEM	MOLDEX3D DYNAFORM	FEMZIP SKYGEN
Germany	CADFEM GmbH www.cadfem.de	lsdyna@cadfem.de	ANSYS ESAComp FTI FormingSuite	LS-DYNA AnyBody	optiSLang VPS	DIGIMAT
Germany	DYNAMore GmbH www.dynamore.de	uli.franz@dynamore.de	ANSYS LS-OPT Primer VisualDoc	LS-DYNA LS-PrePost D-Spex	optiSLang LS-TaSC GENESIS LSTC Dummy & Barrier Models TOYOTA THUMS	DIGIMAT DYNAFORM FEMZIP
Germany	GNS www.gns-mbh.com	mbox@gns-mbh.com	Animator	Generator	Indeed	OpenForm
Netherland	Infinite www.infinite.nl	j.mathijssen@infinite.nl	ANSYS Products LS-DYNA	CivilFem LS-PrePost	CFX LS-OPT	Fluent LS-TaSC



Europe Distribution – Consulting

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@dynamore.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			
	ANSA	μETA	LS-DYNA	LS-OPT
	LS-PrePost	LS-TaSC	FastFORM	DYNAform
	FormingSuite		LSTC Dummy Models	
		LSTC Barrier Models		
Sweden	GRIDCORE		info@gridcore.com	
	www.gridcore.se			
	LS-DYNA Cloud Service		Additional software Additional Services	
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			
	LS-DYNA		LS-OPT	LS-PrePost
	LS-TaSC	PRIMER	D3PLOT	T/HIS
	REPORTER	SHELL	FEMZIP	HYCRASH
	DIGIMAT	Simpleware	LSTC Dummy Models	
		LSTC Barrier Models		

Asia Pacific Distribution – Consulting



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

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

China **Oasys Ltd. China** Stephen.zhao@arup.com
www.oasys-software.com/dyna

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

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

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



Asia Pacific Distribution – Consulting

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

EASI Engineering

rvenkate@easi.com

www.easi.com

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

India

CADFEM Eng. Svce

info@cadfem.in

www.cadfem.in

ANSYS	VPS	optiSLang	ESAComp	DIGIMAT
LS-DYNA		LS-OPT	LSTC Dummy Models	LS-PrePost
FTI FormingSuite		AnyBody	LSTC Barrier Models	LS-TaSC

Asia Pacific Distribution – Consulting



Japan **ITOCHU** Ls-dyna@ctc-g.co.jp
www.engineering-eye.com

LS-DYNA LSTC Dummy Models	LS-OPT LSTC Barrier Models	LS-PrePost CmWAVE	LS-TaSC
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Japan **JSOL**
www.jsol.co.jp/english/cae

JSTAMP LS-DYNA LSTC Dummy Models	HYCRASH LS-OPT LSTC Barrier Models	JMAG LS-PrePost	LS-TaSC
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Japan **FUJITSU**
<http://jp.fujitsu.com/solutions/hpc/app/lsdyna>

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

Distribution – Consulting

Korea

THEME

wschung@kornet.com

www.lsdyna.co.kr

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

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

Cloud Services including LS-DYNA



Japan Fujitsu www.fujitsu.com

Germany Gridcore www.gridcore.se

Sweden Gridcore www.gridcore.se

United States Gompute www.gompute.com



A Gridcore Company

GOMPUTE Inc.

Cloud Service FOR LS-DYNA®

Gompute delivers professional and reliable High Performance Computing on demand for Technical and Scientific users.



GOMPUTE Inc.

Imperial Business Park,
4819 Emperor Boulevard,
Suite 400

Durham, NC. 27703 USA.

Contact:

info@gompute.com

www.gompute.com

Gompute also provides independent software vendors (ISVs) with a faster time to market by reselling their products on-demand. Users of Gompute range from large corporations to one-man consultant companies. Gompute's own technology allows the establishment of Virtual teams who can share resources and results collaboratively.

Gompute provides: CPU hours, storage, system administration and support for applications provided by third party Gompute partners.

Gompute supports: departmental license servers, simulation database repository, common documentation areas, etc.

**Hosting the Grand Reception - 12th Int'l LS-DYNA® Users Conference
June 03-05, 2012, Dearborn, MI
Visit our GOMPUTE Exhibitor Booth**



The Complete Courses Offered Can Be Found At: www.cadfem.de

Please check the site for accuracy and changes. Among the many course offered:

Introduction to simulation with ANSYS
Workbench
03/13/12

Introduction to explicit structural
mechanics with ANSYS-LS-DYNA and
LSTC's LS-DYNA
02/08/12 05/09/12
08/29/12 09/05/12
11/06/12 12/19/12

Material Modeling with LS-DYNA
03/06/12 10/16/12

Simulation of composites with ANSYS
Composites PrepPost and LS-DYNA
05/08/12 08/21/12

Contact modeling with LS-DYNA
05/22/12 11/06/12

Modeling joints with LS-DYNA
03/02/12 10/12/12

Crash simulation with LS-DYNA
09/25/12

Introduction to simulation with Diffpack
03/22/12 11/06/12

Working efficiently with Diffpack in
ANSYS Workbench
03/23/12 11/07/12

Introduction to simulation of joint- and
muscle-forces with AnyBody
04/25/12 09/19/12

Efficient coupling of AnyBody with ANSYS
Workbench
04/27/12 09/21/12

Additional Courses are offered – please
check the website for upcoming dates
for: FTI Forming Suite - DIGIMAT
DIFFPACK and others.

Individual Training: Take advantage of
the expertise of our specialists and get to
know how simulation processes in your
company can be arranged in an optimal
way.



Training Germany **DYNAmore**

The Complete Courses Offered Can Be Found At: www.dynamore.de/en

Intro LS-DYNA

03/12/12 04/19/12 04/25/12
06/18/12 09/20/12 10/15/12
10/30/12 12/10/12

Contact Definitions

03/16/12 10/18/12

Element types

07/04/12

Plasticity

10/24/12

Users Interfaces

11/19/12

Crash Analysis

04/17/12 12/04/12

Spot Welds

03/19/12 09/27/12

Dummy Modeling

06/14/12

Airbag Modeling

06/14/12

eta/DYNAFORM

03/17/12 09/17/12

Metal Forming

03/29/12

ALE

10/11/12

Meshless Methods

10/11/12



The Complete Courses Offered Can Be Found At: www.lstc.com

Please check the site for accuracy and changes.
Among the many course offering are the following:

Smoothed Particle Hydrodynamics (SPH)
in LS-DYNA and Element-Free Galerkin
(EFG) CA
February 23-24, 2012

March 20-21, 2012

Implicit Analysis with LS-DYNA CA
March 22-23, 2012

Contact in LS-DYNA CA
March 15-16, 2012

Advanced Impact Using LS-DYNA MI
April 24-26, 2012

Introduction to LS-PrePost (no charge)
MI
March 19, 2012

Introduction to LS-PrePost (no charge)
CA
April 30, 2012

Introduction to LS-DYNA MI
March 20-23, 2012

Introduction to LS-DYNA CA
May 1-4, 2012

Advanced Options in LS-DYNA CA



Training Sweden
DYNAmore Nordic

The Complete Courses Offered Can Be Found At: www.dynamore.se

Please check the site for accuracy and changes.

Among the many course offering are the following:

LS-PrePost 3, introduction

March 12, 2012

Anders Jernberg Fars Hatt,
Kungälv

LS-DYNA, introductory course

March 13, 2012

Dr. Jimmy Forsberg Fars Hatt,
Kungälv

ANSA & Metapost, Introductory course

March 20, 2012

David Karlsson
Linköping

ANSA CFD Meshing

March 22, 2012

David Karlsson
Linköping

LS-DYNA, implicit analysis

March 27, 2012

Dr. Thomas Borrvall
Linköping

LS-DYNA, Simulation of sheet metal
forming processes

April 17, 2012

Dr. Mikael Schill
Linköping

LS-DYNA, Material modelling

April 24, 2012

Dr. Thomas Borrvall
Linköping



The complete Training Courses offered can be found at www.asplus.fr/ls-dyna
Please check the site for accuracy and changes.

LS-DYNA Explicit/Implicit solver – Special University Training session (to be held in Toulouse) 15-18/02 – Special University Price (date to be confirmed)	LS-DYNA Advanced Implicit Solver 25/09
Other regular courses (in Paris) ...	LS-DYNA ALE / FSI 19-20/03 & 22-23/10
LS-DYNA Introduction Explicit Solver 10-12/09	LS-DYNA SPH 21-22/05 & 8-9/10
LS-DYNA Introduction Implicit Solver 24/09	LS-PrePost 3.0 – Advanced meshing capabilities 5/04 & 27/09 & 29/11
LS-DYNA Unified Introduction Implicit & Explicit Solver 16-19/01, 18-21/06 & 12-15/11	LS-DYNA User Options 23-24/05
LS-OPT & LS-TaSC Introduction 21-22/03 & 24-25/10	LS-DYNA – Plasticity, Damage & Failure – By Paul DU BOIS 26-27/11 (date may be changed in Q1)
Switch to LS-DYNA 2-3/04 & 10-11/10	LS-DYNA – Polymeric materials – By Paul DU BOIS 12-13/12
Switch from Ls-PrePost 2.X to 3.X 4/04 & 26/09 & 28/11	LS-DYNA – Geo-material modeling 14-15/12



*Training United States
Engineering Technology
Associates*

The Complete Courses Offered Can Be Found At: www.eta.com

Please check the site for accuracy and changes.

Among the many course offering are the following:

Introduction to DYNAFORM

03/06-07/2012

04/03-04/2012

05/01-02/2012

Introduction to PreSys

03/13/2012

04/10/2012

05/08/2012

Introduction to LS-DYNA

03/20-21/2012

04/17-18/2012

05/15-16/2012



The Complete Courses Offered Can Be Found At: www.caeai.com

Please check the site for accuracy and changes.

Among the many course offering are the following:

ANSYS Training, CFD and FEA Consultants Serving CT, NJ, NY, MA, NH , VT

Mar 05, 2012 1 day ANSYS DesignModeler Middlebury, CT	Introduction to ANSYS Mechanical APDL Part II (Traditional GUI) Middlebury, CT
Mar 06, 2012 2 days Introduction to ANSYS Mechanical (Workbench) Middlebury, CT	May 14, 2012 1 day ANSYS Workbench Meshing for CFD Middlebury, CT
Apr 12, 2012 2 days Introduction to CivilFEM Middlebury, CT	May 15, 2012 2 days Introduction to CFX Middlebury, CT
Apr 16, 2012 3 days Introduction to ANSYS Mechanical APDL Part I (Traditional GUI) Middlebury, CT	Jun 11, 2012 1 day ANSYS DesignModeler Middlebury, CT
Apr 19, 2012 2 days	Jun 16, 2012 2 days Introduction to ANSYS Mechanical (Workbench) Middlebury, CT



Training China Hengstar Technology

The Complete Courses Offered Can Be Found at www.hengstar.com

2012	2	3	4	5	6	7	8	9	10	11	12
An Introduction to LS-DYNA(High Level)											
Concrete & Geomaterial Modeling with LS-DYNA											
Pedestrian Safety and Bonnet Design with LS-DYNA											
Crashworthiness Theory and Technology											
LS-DYNA MPP, Airbag Simulation with LS-DYNA											
Introduction of LS-OPT which is Based on LS-DYNA											
Passive Safety and Restraint Systems Design											
Crashworthiness Simulation with LS-DYNA											
Passive Safety Simulation with LS-DYNA											
Crashworthy Car Body Development - Design, Simulation and Optimization											



For course location visit www.alyotech.fr

LS-DYNA Introduction

March 14-16
April 03-05
June 04-06
Sept 10-12
Oct 01-03
Nov 12-14
Dec 03-05

LS-DYNA Thermal

Sept 13-14

LS-DYNA Implicit

March 19-20
May 21-23
Sept 17-19
Nov 19-21

LS-PrePost – Meshing

March 22
May 24
Sept 27
Nov 26

LS-PrePost – New Interface

March 23

May 25

Sept 28

Nov 27

LS-OPT Introduction

June 18-19

Dec 10-11

LS-TaSC – Topology Optimization

June 20

Dec 12

Material Modeling & User Defined
Material in LS-DYNA

July 10-11

Crash & Impact Modeling

April 02-05

FSI & ALE in LS-DYNA

March 15-16

LS-DYNA Composite

July 12-13

April 24-16 Tues – Thursday Instructor: Suri Bala

www.lstc.com/training/advanced_impact

What you will learn:

- Time Integration Schemes
- Element Technology
- Material Modeling
- Overview of Connections
- Contact-Impact
- Introduction to SPH and ALE
- Automating Design using LS-OPT
- Best Practices
- Workshop
- Conclusions

Automotive Topics
Retractors & Pretensioners
Seatbelts
Inflators & Airbags

30-day demo license available:
info@lstc.com

LS-DYNA is a general purpose multi-physics software with a wide range of applications. This class introduces several topics in LS-DYNA that are essential for engineers to model and simulate real-world crash events.

The content of the class is targeted towards the use of LS-DYNA in the automotive industry; however, it also presents topics that are industry independent.

Location of Training:

LSTC Michigan
1740 West Big Beaver
Troy, MI 48084

Registration:

www.lstc.com/training

Information Class Contact:

Cathie Walton
cathie@lstc.com
313-790-9040



ANSA & μ ETA Nordic Open Meeting



March 7, 2012

http://www.beta-cae.gr/news/20120207_2012_nordic_om_invitation.htm

BETA CAE Systems SA has the pleasure to invite you to the 2012 Open Meeting that will take place on Wednesday March 7th 2012 at Quality Hotel 11, Göteborg, Sweden. The event aims to introduce the latest developments in ANSA and μ ETA Pre- and Post-Processing suite and to showcase its application in various CAE disciplines. The "Technical Discussions" session that will follow the event's closing will give participants the opportunity to meet in person with our engineers and discuss about the software features and their application.

BETA CAE Systems S.A. would like to express its appreciation to the invited speakers for their contributions.

There is no participation fee for this event. However, for the better organization, we would appreciate if you register by email to congress@beta-cae.gr, no later than Friday February 24th, 2012.

The language of the event will be English.

The attire will be business casual. Coffee servings and lunch are courtesy of BETA CAE Systems S.A.

Venue

Quality Hotel 11 &
Eriksbergshallen
Maskingatan 11
41764 Göteborg, Sweden
Map: QH11
Web: <http://www.hotel11.se>

Contact:

Ms Photini Paraskevopoulou
BETA CAE Systems S.A.
Tel: +30-2392-021914
Fax: +30-2392-021828
Email: congress@beta-cae.gr



Oasys LS-DYNA 5th Annual Update Meetings India

April 17th & 19th 2012

Pune – Tuesday, 17th April 2012

The Ista Hotel, 88 Nagar Road, Adjacent to Aga Khan Palace Pune.

Bangalore – Thursday, 19th April 2012 – The Taj Vivanta, Whitefield, Bangalore.

Oasys Ltd and nHance Engineering Solutions Pvt Ltd are pleased to announce the 5th Oasys LS-DYNA Update meetings in India for the year 2012. First meeting shall be held at Pune on Tuesday 17th April 2012 at The Ista Hotel and second meeting shall be held at Bangalore on Thursday 19th April 2012 at The Taj Vivanta, Whitefield.

Each of these is a full day free of charge event covering both LS-DYNA and Oasys software and is a perfect opportunity to find out about current and future developments and how the software is being used in the engineering community.

The presentations will mainly cover latest features of LS-DYNA software, Oasys suite and presentations from industry members specifically from OEMs. This year's presentations also include presentation from Mr. Yun Huang, LSTC on the implicit capabilities of LS-DYNA for NVH and Durability. Detailed agenda shall be published next month.

Presentations of the last year Update Meeting can be seen at http://www.oasys-software.com/dyna/en/events/users_india_apr-11/users_india_apr-11.shtml .

Registration: Please send your registration to this event by email to india.support@arup.com with your name, company/affiliation, telephone number and your choice for event.

Venue: If you plan to stay over before or after the event, we are pleased to confirm that we have negotiated a special rate for attendees of the Oasys LS-DYNA Update meeting. Please contact us for assistance.

Contact Details: If you have any queries regarding this event you can contact:

Mr. Asif Ali:
nhance Engineering Solutions(P)Ltd (Part of the ARUP Group)
Plot No. 39, Ananth Info Park, HiTec City-Phase 2
Madhapur, Hyderabad-500081, India
Tel: +91 (0) 40 44369797/8 Email: india.support@arup.com

Compute User Group Meeting (7th Edition)



May 08 & 09, 2012

<http://www.simdi.se/>

Location:

Scandic Crown Hotel
Gothenburg (Sweden)

About the Compute User Meeting

The Compute User Meeting, formerly called SIMD I (Simulation and Data intensive Fair), is an event that gathers different actors of the Simulation Industry

Primarily GUM11 gathers users of Gompute® software suite and the Gompute on Demand™ service but it is open to any other person interested in the application of numerical simulation on their daily work.

This year meeting is the sixth one all of them has been celebrated in Gothenburg Sweden.

Compute on Demand delivers HPC on demand for technical and scientific applications, it is owned and operated by Gridcore AB, a Swedish System integrator specialized in technical and scientific computing.

You may get more information about gompute and Gridcore at www.gompute.com and www.gridcore.se.

GUM11's Agenda Manager

Iago Fernandez
Phone: +46 704 19 39 76
Mail: iago.fernandez@se.gompute.com

GUM11's Event Manager

Anne-Marie Ohlsson
Phone: +46 31 18 21 60
Mail: amo@gridcore.se



12th International LS-DYNA Users Conference

June 03-05, 2012

Conference website: www.ls-dynaconferences.com

12th Int'l LS-DYNA Users Conference
June 3rd, 4th & 5th

Training 6th & 7th

Conference Plenary/Keynote
Addresses

June 4th

Professor Thomas J.R. Hughes

The University of Texas

Professor David J. Benson

University of California

Mr. Kenji Takada

Honda Japan

Mr. Paul A. Du Bois

Consulting

FEA Information Participants
Sponsoring and/or exhibiting:

- ARUP
- CRAY
- BETA CAE Systems, S.A.
- DatapointLabs
- ESI North America
- ETA
- Gompute Inc.
- GNS mbH
- D3View
- FEA Information
- JSOL

Hotel - Venue - Reservations

Hyatt Regency Dearborn

Fairlane Town Center, Dearborn, MI 48126

Please inform reservations that you're
attending the LS-DYNA Conference

For booth, sponsorships or any conference
questions contact: info@lst.com

TRAINING OFFERED:

- Pre- Conference LS-PrePost
- Pre- Conference User Material Dev. In LS-DYNA
- Advanced ALE Applications
- ALE/Eulerian & FSI
- Blast & Penetration Using LS-DYNA
- Heat Transfer with Warm Forming and Hot Stamping Applications
- Introduction to LS-OPT
- NVH & Frequency Domain Analysis w/ LS-DYNA
- Occupant Restraint: Dummies/Barriers
- Polymeric Material With LS-DYNA
- Probabilistic Design Using LS-OPT & LS-DYNA
- SPH & Element-Free Galerkin

GNS – 7th OpenFOAM® Workshop

June 25th 2012



<http://www.openfoamworkshop.org/2012/OFW7.html>

7th OpenFOAM® Workshop

The 7th OpenFOAM® Workshop will be held in Darmstadt (next to Frankfurt, Germany) from June 25-28, 2012 - hosted by the Center of Smart Interfaces (CSI) and the Graduate School of Computational Engineering (GSCE) of the Technische Universität Darmstadt.

The OpenFOAM® Workshop intends to bring together OpenFOAM®'s developers and users, to promote collaborative activities, exchange information and share experiences in similar areas of interest. The 7th OpenFOAM® Workshop is

- a community forum and open discussion platform for

OpenFOAM® users and developers,

- the largest OpenFOAM® community event of the world (expected 400 participants),
- since 2006: sustainable, community-driven and non-profit.

The 7th OpenFOAM® Workshop is organized using the Community Portal of the Extend Project.

Please visit for abstract submission, registration and program schedule.

Your OpenFOAM®-Workshop Organizing Committee

committee@openfoamworkshop.org



DYNAmore German LS-DYNA Forum

October 09, 2012

<http://www.dynamore.de/en/training/conferences/upcoming/ls-dyna-forum-2012/ls-dyna-update-forum-2011>

German LS-DYNA Forum 2012

LS-DYNA Forum, 9 - 10 October 2012,
Ulm, Germany

On the 9th and 10th October 2012, our 11th LS-DYNA Forum will be taking place at the Maritim Hotel in Ulm, Germany. We cordially invite you not only to attend the event but submit a paper. In your presentation, you can talk about your experiences with LS-DYNA or LS-OPT and you can discuss and exchange these experiences with other users.

User presentations will form the core of the event. General lectures given by renowned speakers are also planned as well as talks on the latest LS-DYNA und LS-OPT .

Comprehensive information all about LS-DYNA software can be obtained from the accompanying exhibition.

The Forum will be accompanied by seminars which will be held during the week of the conference on the subjects of CPM Airbag OoP, ALE and fluid-structure inter-action, meshless methods

and on concrete and geomaterial modeling.

Your presentation: You are cordially invited to contribute towards the program plan by submitting a paper. Contributions from the various areas of application of LS-DYNA/LS-OPT are planned

To Submit your papers: Please send us the title, authors and a short summary (approx. 300 words).

Dates: Submission of proposed paper: 25th May 2012

Author notification: 11th June 2012

Submission of two-page summary for proceedings: 7th Sept. 2012

Location: Maritim Hotel Ulm
Basteistraße 40, 89073 Ulm

Registration and contact

DYNAmore GmbH

Tel. +49 (0) 7 11 - 45 96 00 - 0

Fax +49 (0) 7 11 - 45 96 00 - 29

E-Mail: forum@dynamore.de

www.dynamore.de/forum12

ANSYS Conference & 30. CADFEM Users´ Meeting



October 24-26, 2012

Location: Kassel Germany

Environmental protection and economic aspects make electric mobility one of the great challenges of the coming years. Step-by-step it will replace traditional forms of mobility in everyday life. Therefore, a number of projects have been defined in so-called 'model regions' in order to better understand and optimize this process.

For a better understanding of electric mobility and its optimization, simulation specialist ANSYS has extended its portfolio with a set of simulation applications that can serve as models in the development and implementation of innovative drive concepts. Structural and fluid mechanics and electromagnetic simulation models of the individual components are modeled in a consistent environment both individually and

interacting, considering the drive as a complete multi-physical system – Engineering the System!

The ANSYS Conference & the 30th CADFEM Users' Meeting focus on the many simulation options in electric mobility and several other current application fields where structural mechanics, fluid mechanics and electro magnetics issues are important.

CADFEM GmbH and ANSYS Germany GmbH cordially invite you to join the conference

We look forward to your participation

The CADFEM & ANSYS Germany Team



Events - Conferences

Conference - Event

start date

03/12 US	Aerospace & Defense Supplier Summit www.bciaerospace.com/seattle
04/03 Germany	Automotive CAE Grand Challenge 2012 www.carhs.de/grand-challenge
04/16 Belgium	11th Int'l Conf. - Computer Applications/Information Tech. -Maritime Ind. www.compit.info/
05/15 US	2012 SIMULIA Customer Conference www.3ds.com/company/events/scc-2012/overview/
05/21 Germany	Nastran Users Meeting http://pages.mscsoftware.com/NastranUserMeeting2012-Home.html
06/11 USA	AMD Fusion12 Developer Summit http://www.amd.com
06/12 US	Seventh M.I.T. Conference www.seventhmitconference.org/

Naury Birnbaum Joins ESI



<http://www.esi-group.com/corporate/finance/news/financial-press-release/>

ESI reinforces its leadership team:

Appointment of Naury Birnbaum as Chief Strategic Officer

ESI Group, a pioneer and world leader in virtual prototyping solutions today announced the appointment of Naury Birnbaum as Chief Strategic Officer and member of the Group Executive Committee.

In this newly created position, Naury will strengthen the international management organization and contribute to the growth strategy focusing on industry sector diversification and M&A programs.

Alain de Rouvray, Chairman and Chief Executive Officer of ESI Group, commented: "We heartily welcome Naury Birnbaum as a new member of our Group Executive Committee. Naury will contribute a unique software industry experience having participating in several major industrial software ventures in the domain of Computer Aided Engineering (CAE)". His international experience of this market and customer-focused thinking will be key drivers to lead our international development strategy."

A pioneer in Mechanical CAE, Naury was President of PISCES International in the 1970's and 80's developing, marketing, and supporting the PISCES* software globally. From 1985 to 2005, Naury was

co-founder and CEO of Century Dynamics (CDI) the provider of the renowned AUTODYN software with a substantial worldwide user base in energy and aerospace applications. In 2005, CDI was acquired by ANSYS, today's world leading MCAE software vendor. Naury became the ANSYS General Manager for Explicit and Offshore Products. More recently, Naury was entrusted as Vice President, Business Strategy at ANSYS, active in Industry Marketing, Corporate and Product Strategy, and M&A focused on key markets in Electronics, Automotive, Aerospace & Defense, Energy, Turbomachinery, Civil Engineering, Consumer Products, and Healthcare.

Naury commented, "I am very happy to join ESI Group at a time when the Company is remarkably well positioned to accelerate its comprehensive offering of world-class virtual prototyping solutions. As a member of ESI's Group Executive Committee I am excited by the prospect of providing leadership in formulating and executing global strategies to spur innovative Virtual Engineering in key industries and to successfully propel ESI's growth to the next level."

*PISCES, a leading US software for simulating high energy physics of engineering materials, was later acquired by MSC Software in 1989.

About ESI

ESI is a pioneer and world-leading player in virtual prototyping that take into account the physics of materials. ESI has developed an extensive suite of coherent, industry-oriented applications to realistically simulate a product's behaviour during testing, to fine-tune manufacturing processes in accordance

with desired product performance, and to evaluate the environment's impact on product performance. This offer represents a unique collaborative and open environment for Simulation-Based Design, enabling virtual prototypes to be improved in a continuous and collaborative manner while eliminating the need for physical prototypes during product development. Present in over 30 countries, ESI employs some 850 high-level specialists throughout its worldwide network. ESI Group is listed on compartment C of NYSE Euronext Paris.

For further information, go to www.esi-group.com

Cray Forms New Subsidiary in China



<http://investors.cray.com/phoenix.zhtml?c=98390&p=irol-newsArticle&ID=1664300&highlight=>

Complete About Cray & Safe Harbor Statement can be read at the above link.

SEATTLE, WA, Feb 23, 2012 -- Global supercomputer leader Cray Inc. (NASDAQ: CRAY) today announced it has formed a new wholly-owned subsidiary in China aimed at strengthening Cray's presence in China's growing High Performance Computing (HPC) marketplace.

Located in Beijing's Haidian district, Cray Computing Equipment (Beijing) Co. Ltd. will focus on selling Cray supercomputing systems and storage, training end-users and administrators, and providing the excellent, direct customer service for which Cray has become known. With plans to staff the subsidiary with new Cray employees that are highly skilled in HPC, the Company is making a long-term commitment towards building a strong base of Cray customers in China. Cray Computing Equipment (Beijing) Co. Ltd. is a wholly-owned subsidiary of Cray China Limited, a wholly-owned subsidiary of Cray registered in Hong Kong.

"Cray believes the Company needs to expand its supercomputing capability and expertise in the rapidly growing HPC field in China, and thus provide a strong, local presence to China's scientific community," said Andrew Wyatt, vice president, Cray Asia Pacific. "The country's HPC market is of rising importance, and establishing a new subsidiary in Beijing reconfirms our dedication to providing world-class supercomputing technologies to meet the growing needs of China's HPC users."

Cray continues to expand its global expertise in designing, developing, marketing and servicing the world's most advanced supercomputers. In April 2009, Cray formed a new subsidiary in New Delhi, India, and currently has offices, subsidiaries and research and development facilities in the United States, Canada, Brazil, Japan, Australia, Taiwan, Hong Kong, South Korea and in several countries throughout Europe. Cray's corporate headquarters are located in Seattle, Washington.

About Cray Inc.: " As a global leader in supercomputing, Cray provides highly advanced supercomputers and world-class services and support to government, industry and academia..."

Safe Harbor Statement: This press release contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934 and Section 27A of the Securities Act of 1933, including, but not limited to, statements related to the Company's plans to staff its new subsidiary in China and build a base of customers in China. These statements involve current expectations, forecasts of future events and other statements that are not historical facts..."



Press Release – News

TOYOTA

LIFE BEHIND THE WHEEL

<http://pressroom.toyota.com/releases/new-safe-driving-documentary-for-all-ages.htm>

February 24, 2012

New Discovery Documentary Examines Safe Driving For All Ages

-- LIFE BEHIND THE WHEEL premieres Saturday, March 3 at 8am e/p on Discovery Channel in partnership with Discovery Education –

-- Special produced with support from Toyota --

Silver Spring, Md. - February 24, 2012 - New drivers, older drivers, passengers and pedestrians alike, we are all precious cargo – and the stakes are high at any age when you get behind the wheel. Now, Discovery Channel and Discovery Education, in partnership with Toyota, present LIFE BEHIND THE WHEEL, airing Saturday, March 3 at 8am e/p, a comprehensive look at safe driving habits from generation to generation. An encore presentation airs on Saturday, May 5, 2012.

Embeddable Clip Here:

<http://www.youtube.com/v/j-Fawez3zOg>

Today's driving statistics are staggering:

- 70% of all child car seats in the U.S. are improperly installed.
- Vehicle crashes are the single greatest cause of death for teenagers.
- A driver is 8 – 23 times more likely to crash if texting while driving.
- Fatality rates per mile driven for 75-79 year olds are more than four times as high as those for 30-59 year olds.

Across the nation, hospitals, universities and corporations are partnering with one another to tackle these critical issues and decrease fatalities. From Toyota's innovative "Buckle Up for Life"

community outreach program with Cincinnati Children's Hospital educating parents on proper car seat installation to new technology allowing parents to monitor and track their teen's driving habits and MIT's groundbreaking empathy suit designed to teach us all about the challenges faced by older drivers on the road, LIFE BEHIND THE WHEEL showcases a broad range of driver education and attempts to offer real solutions.

"At Toyota, safety is a priority in everything we do, we are focused on making sure drivers everywhere have the resources they need to keep their families, friends and loved ones safe and secure," said Pat Pineda, Group Vice President, National Philanthropy, Toyota Motor North America, Inc. "Toyota's partnership with Discovery Channel is significant and underscores our efforts to keep the roads safe for all."

"We are proud to partner with Toyota for this important documentary. Safe driving is a life-long lesson. LIFE BEHIND THE WHEEL gives people of all ages critical information while highlighting important new strides in technology that are creating better drivers and saving lives along the way,"

said John Whyte, MD, Chief Medical Expert for Discovery Channel.

LIFE BEHIND THE WHEEL is available for free download at www.discoverychannelpatiented.com or on iTunes. In addition, portions of the documentary will be available on ToyotaTeenDriver.com, a free, online program in partnership with Discovery Education designed to provide safety educational resources to schools, educators, parents and students.

LIFE BEHIND THE WHEEL is produced with support from Toyota.

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Contact(s):
Zoe Zeigler - Toyota
(212) 715-7492
zoe_zeigler@tma.toyota.com

About Discovery Channel

Discovery Channel is dedicated to creating the highest quality non-fiction content that informs and entertains its consumers about the world in all its wonder, diversity and amazement. The network, which is distributed to 100.8 million U.S. homes, can be seen in 210 countries and territories, offering a signature mix of compelling, high-end production values and vivid cinematography across genres including, science and technology, exploration, adventure, history and in-depth, behind-the-scenes glimpses at the people, places and organizations that shape and share our world. For more information, please visit www.discovery.com.

About Toyota

Toyota (NYSE: TM) established operations in the United States in 1957 and currently operates 10 manufacturing plants. Toyota directly employs nearly 30,000 in the U.S. and its investment here is currently valued at more than \$18 billion, including sales and manufacturing operations, research and development, financial services and design.

Toyota is committed to being a good corporate citizen in the communities where it does business and believes in supporting programs with long-term sustainable results. Toyota supports numerous organizations across the country, focusing on education, the environment and safety. Since 1991, Toyota has contributed over half a billion dollars to philanthropic programs in the U.S.

For more information on Toyota's commitment to improving communities nationwide, visit <http://www.toyota.com/community>.

About Discovery Education

Discovery Education transforms classrooms, empowers teachers and captivates students by providing high quality, dynamic, digital content for grades K-12 and community colleges. Powered by Discovery Communications (NASDAQ: DISCA, DISCB, DISCK), the number one nonfiction media company in the world, Discovery Education is the global leader in standards-based digital media, professional development, assessment tools and a passionate educator network to support districts in accelerating student achievement. Discovery Education services like Discovery Education streaming, Discovery Education Techbook and Discovery Education Higher Ed, are in more than half of all US schools and 35 countries around the world. Explore the future of education at www.discoveryeducation.com.

Press Release – News
Publishing a Press Release



There is no fee to publish a press release.

If you are interested in publishing a press release FEA Information Solutions needs the press release by the 15th of each month for publication at the end of that month.

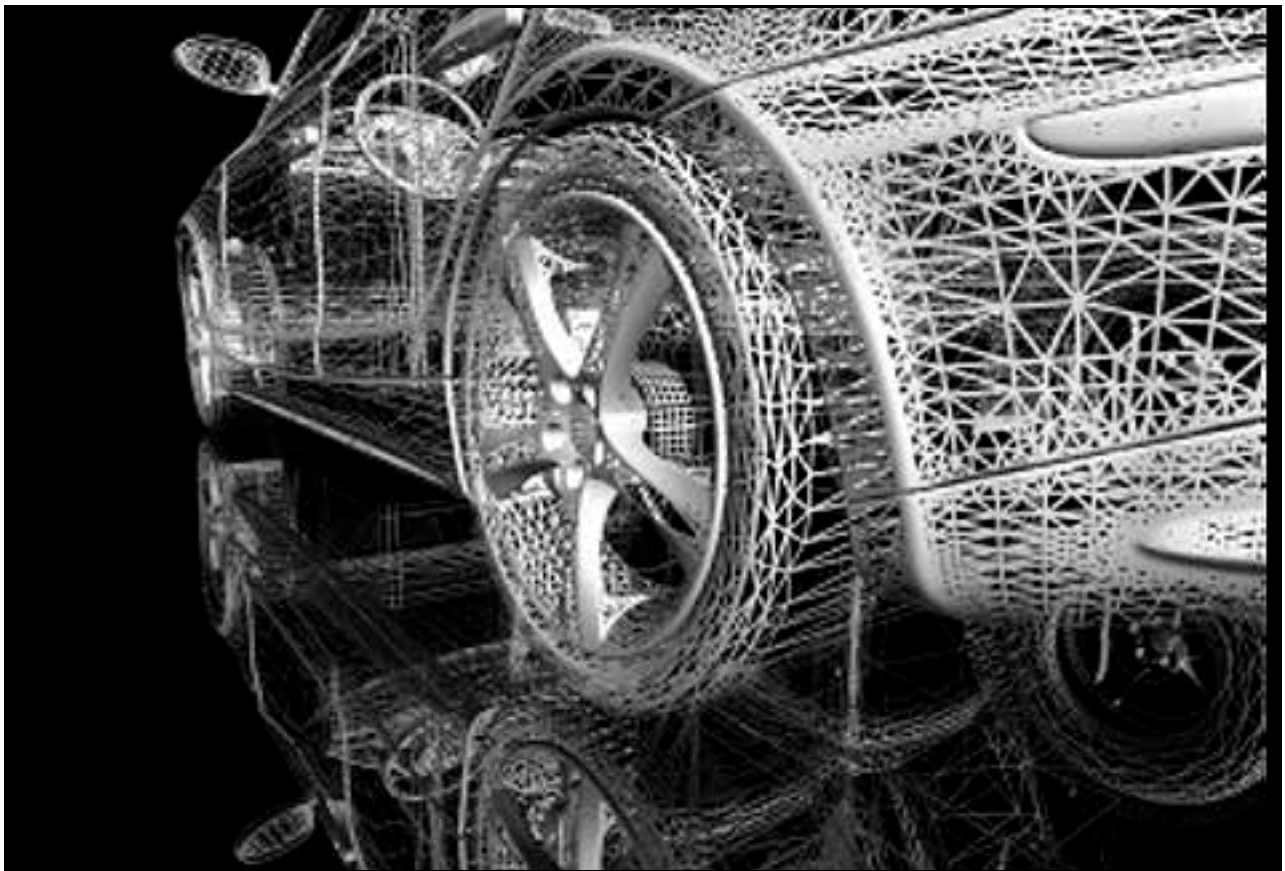
Space and acceptance is solely at the discretion of FEA Information Engineering Solutions.

A Press Release should be no longer than two pages.

**Send your press release to mv@feainformation.com
Subject line: Press Release**

Volume 1
Issue 1
February 2012

FEA Information Engineering Journal



FINITE ELEMENT
ANALYSIS *fea* INFORMATION.COM

FEA Informaton Inc.

FEA Information Engineering Journal

Goals & Intent

FEA Information Engineering Journal is published monthly in pdf format by FEA Information Inc. To showcase 3 to 5 papers.

FEA Information Engineering Journal papers will be published on www.feapublications.com

The focus is toward publications of papers, or other media geared for Finite Element Analysis, specifically on, and limited to, the software LS-DYNA and it's related software LS-PrePost, LS-OPT, LS-TaSC, Dummy and Barrier models, including software that interface and/or enhance LS-DYNA in the engineering community.

Consideration is given to all aspects of technically excellent written information without limitation on length. All submissions must follow guidelines for publishing a paper, or periodical. If a paper has been previously published, permission to reprint is required with proper acknowledgment given to the publisher of the work.

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FEA Information Engineering Journal will be published monthly and limited to a maximum of ten papers either re-print or new for publication by FEA Information Journal.

FEA Information Engineering Journal papers will be published on www.feapublications.com and www.feaengineeringjournal.com (to open March 01, 2012)

For Information on publishing a paper, or recommending a paper for re-print in the FEA Information Engineering Journal contact mv@feainformation.com

Subject Line Should Be: Journal Publication

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