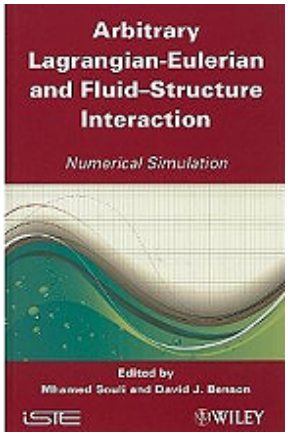
FEA Information http://www.feainformation.com

Engineering Journal and Website Resource

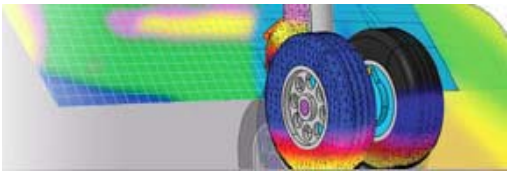
JULY 2010

Successful Training Course China

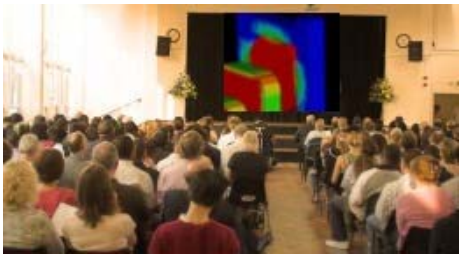
Users Group on Google



M'hamed Souli/David J. Benson



MSC.Software Releases MD Nastran 2010



Training Courses New Section

BETA CAE Systems SA launches a Twitter account

TABLE OF CONTENTS

Announcements

Training Course Area:

Please feel free to send us your listings to be added to the training area. Send them to agiac99@aol.com for review/publication in the news

Due to magazine size we had to postpone LSTC Barrier Model update to the August issue.

Press Releases are free postings.

If you have a press release you would like for us to consider for publishing please send it to Anthony, agiac99@aol.com

Sincerely, Marsha J. Victory,
President, FEA Information Inc

From engineering to horses -

Churchill and our rescued Race Horse Timber Cruiser..
http://www.livermorehorses.com

FEA Information

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ETA: http://www.eta.com	**INTEL**: http://www.intel.com	**ESI Group**: http://www.esi-group.com
BETA CAE Systems S.A.: http://www.beta-cae.com	**LSTC:** http://www.lstc.com	**SGI:** http://www.sgi.com
MICROSOFT http://www.microsoft.com		

Conference Paper Showcase

LS-DYNA® and JMAG® Coupling Simulation for Change of SPM Motor Magnetic Properties Due to Press-Fitting

.

The full paper and others of the 11th Int'l LS-DYNA Users Conference – 2010 are available for download at: http://www.dynalook.com/

http://www.dynalook.com/international-conf-2010/Simulation-1-5.pdf

LS-DYNA® and JMAG® Coupling Simulation for Change of SPM Motor Magnetic Properties Due to Press-Fitting

Kazuya Sato, Kazuyuki Narita, Hiroyuki Sano – JSOL Corporation

Abstract:

Press-fitting is one of the methods to keep the laminated structure of the motor core. It is known that the compressive stress due to press-fitting causes an increase of the core-losses. In this paper, the influence of the press-fitting stress on the motor magnetic properties was investigated using LS-DYNA and JMAG coupling simulation. JMAG is a comprehensive software suite for electromechanical equipment design and development. In this investigation, using LS-DYNA for press-fitting analysis, passing the results of the element data to JMAG, finally core-losses analysis was carried out by JMAG. From the results, the change of the magnetic properties due to press-fitting was clearly obtained.

Press-fitting is on e of the methods to keep the laminated structure of the motor core. It is known that that compressive stress due to the press-fitting stress causes an increase of the core-losses [1][2]. In this paper, the influcents of the press-fitting stress on the motor magnetic properties was investigated using LS-DYNA and JMAG coupling simulation.

Conference Paper Showcase

How to Use the New CESE Compressible Fluid Solver in LS-DYNA

.

The full paper and others of the 11th Int'l LS-DYNA Users Conference – 2010 are available for download at: http://www.dynalook.com/

http://www.dynalook.com/international-conf-2010/FluidFSI-3.pdf

How to Use the New CESE Compressible Fluid Solver in LS-DYNA

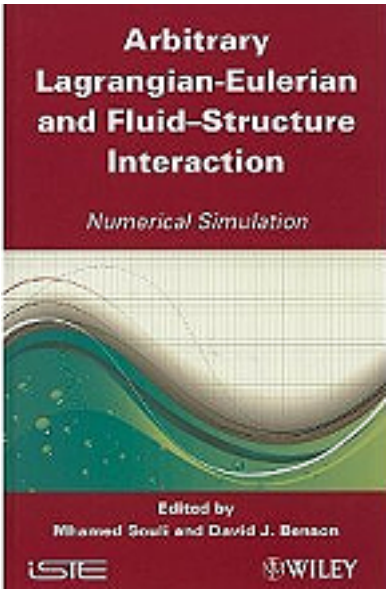
Zeng-Chan Zhang – LSTC

This new solver is based on the conservation element and solution element (CESE) method[1, 2]. The CESE method is a novel numerical method for solving conservation laws, and it has many nontraditional features, such as: space- time conservation; high accuracy (2nd order for both flow variables and their spatial derivatives); novel shock- o capturing strategy; both strong shocks and small disturbances can be handled very well simultaneously, etc. Because of these advantages, this CESE solver is a good choice for high-speed compressible flows with complex shocks and acoustics (noise) problems (near field).

The solver has also been used to solve fluid/structure interaction (FSI) problems. For these problems, the fluid solver is based in an Eulerian frame while the structure solver is a Lagrangian frame. Their meshes are independent of each other, and the structural boundaries (fluid-structure interfaces) are tracked by the fluid solver automatically. The fluid solver gets the displacements and velocity of the interfaces from the structural solver and feeds back the fluid pressure (forces)

Recommended

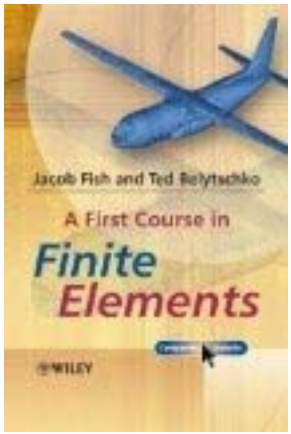
Reading



Arbitrary Langrangian-Eulerian and Fluid Structure Interaction.

Edited by M'hamed Souli

and David J. Benson



A First Course in Finite Elements

Jacob Fish (Author),

Ted Belytschko (Author)

BETA CAE Systems SA

Twitter
Events to Visit BETA CAE

From the BETA CAE Systems SA News In Brief pdf.
http://www.beta-cae.gr/news/20100624_news_in_brief.pdf

BETA CAE Systems SA launches a Twitter account

Follow@betacae on Twitter to be updated on the latest news about our products, services and events. http://twitter.com/betacae

4th ANSA & μETA International Conference,
June 1-3, 2011, Makedonia Palace, Thessaloniki, Greece

NAFEMS Nordic Regional Summit 2010: Trends and Future Needs in Engineering Simulation,
October 26–27, 2010, Gothenburg, Sweden organized by NAFEMS

German LS-DYNA User Forum
October 12-13, 2010, Bamberg, Germany organized by DYNAmore GmbH

LS-DYNA Nordic Users' Forum,
October 14, 2010, Kungälv (Gothenburg), Sweden organized by Engineering Research Nordic AB

8th MIRA International Vehicle Aerodynamics Conference
October 13-14, 2010, Grove, United Kingdom organized by MIRA

Open Source CFD International Conference 2010,
November 4-5, 2010, Munich, Germany organized by ICON

SIMVEC - Berechnung und Simulation im Fahrzeugbau,
November 16-17, 2010, Baden-Baden, Germany organized by VDI

SPC Constraints in Dynamic Relaxation to Improve Convergence

Article updates: Suri Bala

July 26th http://blog.d3view.com/ Published by Suri Bala

The On Line (no fee) esource for Tracking Developments in LS-DYNA

SPC Constraints in Dynamic Relaxation to Improve Convergence

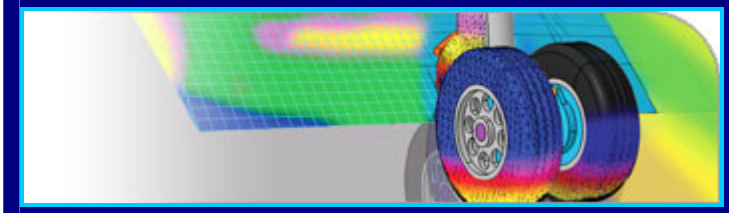
July 26th, 2010 in LS-DYNA Bytes

Dynamic Relaxation (DR) is a simple but effective technique to initialize structures to pre-loads prior to any primary load application. LS-DYNA has supported DR for several decades and is used by several users. Recently, in an attempt to improve convergence (Explicit DR or Implicit DR), there was a need to HOLD certain portion of a structure to reduce undesired movement. The problem with enforcing such constraints using BOUNDARY_SPC was they continue to be present in TRANSIENT phase as well which may not be desired.

http://blog.d3view.com/

One method to overcome this was to use BOUNDARY_PRESCRIBED_MOTION keyword (one for each DOF) and specify a zero displacement as a function of DR time and set SIDR=1 in the define curve. However, recent update to R5 enables uses to use BOUNDARY_SPC with BIRTH_DEATH option with DEATH eq 0.0 which causes the spc constraints to be honored in DR phase but they die as soon as LS-DYNA enters TRANSIENT phase.

Please refer the latest LS-DYNA manual under BOUNDARY_SPC for more information.



MSC.Software

Releases MD Nastran 2010

Press Contact: Leslie Rickey, Director Product Marketing

http://www.mscsoftware.com/Products/CAE-Tools/MD-Nastran.aspx

MSC.Software Releases MD Nastran 2010
Comprehensive Nonlinear, Expanded Physics, Multimodel Optimization and Breakthrough Performance

Multidiscipline Simulation

MD NastranSANTA ANA, CA--(Marketwire - July 26, 2010) - MSC.Software, the leader in multidiscipline simulation solutions that accelerate product innovation, today announced that MD Nastran 2010 is released and ready for download.

With this release, engineers can rely on MD Nastran for problems they couldn't before -- such as advanced nonlinear analysis, bi-directional thermo-mechanical coupling and expanded physics simulations including co-simulation with CFD codes, and multi-model optimizations, with ground-breaking solver performance improvements!

MD Nastran enables and encourages analysts to expand beyond the traditional isolated discipline analysis to simulate more real world behaviors with a single solver.

Comprehensive Nonlinear -- Superior Linear and Nonlinear Analysis in a Single FE Solver
This release of MD Nastran delivers robust nonlinear capabilities allowing engineers to use a single FE solver for advanced linear and nonlinear simulations. Benefits to users include:

•Automatic Bolt Analysis -- easier and more accurate assembly modeling through better control of preload and improved results with continuous contact.
•Contact Enhancements -- more accurate contact stresses and better stress continuity with segment-to-segment algorithm, and improved thermal analysis results with thermal contact for true contact or near contact between dissimilar meshes.
•Thermal-Mechanical Analysis -- improved accuracy through thermal-mechanical coupling, helping users solve new classes of problems involving heat

generation due to mechanical work loss, including brake pad heating, road-tire contact and manufacturing operations.
•Nonlinear Adaptive Time Stepping -- reduced run times and easier setup with new time stepping scheme.
"We are looking forward to using a single model in MD Nastran 2010 for both our linear and nonlinear car body analysis needs in our next vehicle program," said Helene Detable, Specialist in Mechanics, PSA Peugeot Citroen.

Expanded Physics to Simulate Real World Design Behaviors
This release of MD Nastran expands the range of physics that engineers can model, providing more accurate representations of design behaviors and helping accelerate product innovation. Enhancements and new capabilities in this release include:

•Advanced Thermal Capabilities with RC Network Solver -- Benefit from industry leading thermal capabilities of MSC SINDA from within MD Nastran for accurate thermal results
•Co-simulation with CFD -- obtain more accurate structural and fluid analysis results through co-simulation of MD Nastran with 3rd party of CFD codes
•Explicit and FSI Enhancements -- DMP for Explicit FSI Applications provides the fastest explicit simulation solver on market
•NVH and Dynamics Enhancements -- better integration with test data now available with new capabilities to include test based FRF parts to the FRF and FBA functionality
Multi-Model Optimization -- Combine Multiple Models in Single Optimization Run
MD Nastran 2010 provides the exciting capability of Multi-Model Optimization to enable users to perform design optimization when the design conditions are produced by two or more MD Nastran design models. This gives engineers ability to optimize designs by considering all disciplines in single optimization run rather than merging separate run augmenting the value of MD Nastran as a multidisciplinary solver.

Performance & Robustness
Several new computational tools and procedures implemented for linear and nonlinear contact analyses result in improved performance raising user productivity.

•The Pardiso and MUMPS solvers for parallel and multithreaded processing implemented for Linux and Windows machines enables users take full advantage of their multi-core systems without added cost.
•Distributed memory parallel (DMP) solvers are also introduced into MD Nastran nonlinear solutions enabling users to solve larger models in less time.
•UMFPACK solver implemented for complex Lanczos eigen value extraction for improved efficiency. For example, a model of approximately 190,000 DOF resulted in 50% speed up for extraction of 100 complex eigen values.
•DMP support extended to include multi-material FSI problems resulting in dramatic performance improvements for this class of problems. For example, a landmine blast model with about 1 million elements, shows a speed up of 250% on a 4-CPU Linux8664 system, while it shows nearly 900% speed up with 32-cores.
"This new release of MD Nastran takes a giant leap forward in the area of cutting edge simulation capabilities for robust nonlinear and coupled physics analyses,"

said Sanjay Choudhry, VP Product & Release Management at MSC.Software. "Together with huge improvements in the parallel direct solver scalability and performance, MD Nastran 2010 now offers a unified environment for both linear and nonlinear analysis of both parts as well as large, complex systems. This is expected to result in improved accuracy and huge productivity gains for customers doing both types of analyses routinely. Support in SimXpert 2010 adds a new dimension to the ease-of-use of these capabilities. Continued major enhancements in MD Nastran's traditional areas of strength of noise & vibration and optimization will provide significant value to our Aerospace and Automotive customers."

For more information about new features in MD Nastran 2010, listen to the On-Demand webinar at http://www.mscsoftware.com/events/Webcasts/MDNastran/WhatsNew2010/

About MSC.Software

MSC.Software is a global leader of multidiscipline simulation solutions that help companies improve quality, save time and reduce costs associated with designing and testing manufactured products. MSC.Software works with thousands of companies worldwide to develop better products faster with simulation technology, software, and services. MSC.Software employs 1,000 people in 23 countries. For additional information about MSC.Software's products and services, please visit www.mscsoftware.com .

Benchmarks
TO DATE

LS-DYNA®

http://www.topcrunch.org

HP/IEE S.A. 02/04/2010

Computer/ Interconnect	Processor	#Nodes x #Processors per Node x #Cores Per Processor = Total #CPU	Time (Sec)	Benchmark Problem
Z800/Gigabit	Intel Xeon W5580 3.2GHz	1 x 2 x 4 = **8**	982	Neon refined
Z800/Gigabit	Intel Xeon W5580 3.2GHz	1 x 2 x 4 = **8**	982	Neon refined
Z800/Gigabit Ethernet	Intel Xeon W5580 3.2GHz	1 x 2 x 4 = **8**	1016	Neon refined revised

Cisco Systems/Technical Marketing 03/26/2010
Computer/Interconnect - Cisco UCS C460 M1/QPI

Processor	#Nodes x #Processors per Node x #Cores Per Processor = Total #CPU	Time (Sec)	Benchmark Problem
Intel Xeon X7560	1 x 4 x 8 = 32	355	Neon refined
Intel Xeon X7560	1 x 4 x 8 = 32	41727	car2car
Intel Xeon X7560 (2.26 Ghz)	1 x 4 x 8 = 32	4349	3 Vehicle Collision

Benchmarks TO DATE

LS-DYNA®

http://www.topcrunch.org

Intel/Intel/SSG 03/28/2010

Processor Intel® Xeon® Six Core X5670

Computer/Interconnect Intel SR1600UR system/QDR IB

#Nodes x #Processors per Node x #Cores Per Processor = Total #CPU	Time (Sec)	Benchmark Problem
4 x 2 x 6 = **48**	218	Neon refined revised
2 x 2 x 6 = **24**	356	Neon refined revised
1 x 2 x 6 = **12**	639	Neon refined revised
16 x 2 x 6 = **192**	962	3 Vehicle Collision
8 x 2 x 6 = **96**	1509	3 Vehicle Collision
4 x 2 x 6 = **48**	2637	3 Vehicle Collision
64 x 2 x 6 = **768**	4009	car2car
32 x 2 x 6 = **384**	4567	car2car
2 x 2 x 6 = **24**	4608	3 Vehicle Collision
16 x 2 x 6 = **192**	7690	car2car
1 x 2 x 6 = **12**	9271	3 Vehicle Collision
8 x 2 x 6 = **96**	14781	car2car
4 x 2 x 6 = **48**	23888	car2car
2 x 2 x 6 = **24**	45828	car2car
1 x 2 x 6 = **12**	89500	car2car
8 x 2 x 6 = **96**	137	Neon refined revised

Benchmarks TO DATE

LS-DYNA®

http://www.topcrunch.org

Bull 04/08/2010

Computer/Interconnect - bullx blade cluster/IB QDR

Processor	#Nodes x #Processors per Node x #Cores Per Processor = Total #CPU	Time (Sec)	Benchmark Problem
Intel® Xeon® Quad Core X5560 @2.80GHz	16 x 2 x 4 = **128**	108	neon refined revised
Intel® Xeon® Quad Core X5560 @2.80GHz	8 x 2 x 4 = **64**	163	neon refined revised
Intel® Xeon® Quad Core X5560 @2.80GHz	4 x 2 x 4 = **32**	259	neon refined revised
Intel® Xeon® Quad Core X5560 @2.80GHz	2 x 2 x 4 = **16**	443	neon refined revised
Intel® Xeon® Quad Core X5560 @2.80GHz	1 x 2 x 4 = **8**	803	neon refined revised
Intel® Xeon® Quad Core X5560 @2.80GHz	16 x 2 x 4 = **128**	9991	car2car
Intel® Xeon® Quad Core X5560 @2.80GHz	8 x 2 x 4 = **64**	17040	car2car
Intel® Xeon® Quad Core X5560 @2.80GHz	4 x 2 x 4 = **32**	30941	car2car
Intel® Xeon® Quad Core X5560 @2.80GHz	2 x 2 x 4 = **16**	58283	car2car
Intel® Xeon® Quad Core X5560 @2.80GHz	1 x 2 x 4 = **8**	113803	car2car

Benchmarks TO DATE

LS-DYNA®

http://www.topcrunch.org

IBM/IBM/Microsoft 05/28/2010
System x® iDataPlex™ dx360 M2/ConnectX Infiniband

Processor	#Nodes x #Processors per Node x #Cores Per Processor = Total #CPU	Time (Sec)	Benchmark Problem
Intel® Xeon® Quad Core X5550	64 x 2 x 4 = **512**	4196	car2car
Intel® Xeon® Quad Core X5550	32 x 2 x 4 = **256**	5989	car2car
Intel® Xeon® Quad Core X5550	16 x 2 x 4 = **128**	10696	car2car
Intel® Xeon® Quad Core X5550	8 x 2 x 4 = **64**	18790	car2car
Intel® Xeon® Quad Core X5550	4 x 2 x 4 = **32**	33782	car2car
Intel® Xeon® Quad Core X5550	2 x 2 x 4 = **16**	62435	car2car
Intel® Xeon® Quad Core X5550	1 x 2 x 4 = **8**	120657	car2car

Dell/HPC Advisory Council 06/15/2010
Dell PowerEdge M610/Mellanox ConnectX IB QDR

Processor	#Nodes x #Processors per Node x #Cores Per Processor = Total #CPU	Time (Sec)	Benchmark Problem
Intel® Xeon® Six Core X5670	14 x 2 x 6 = **168**	1071	3 Vehicle Collision
Intel® Xeon® Six Core X5670	8 x 2 x 6 = **96**	1371	3 Vehicle Collision
Intel® Xeon® Six Core X5670	4 x 2 x 6 = **48**	2290	3 Vehicle Collision
Intel® Xeon® Six Core X5670	2 x 2 x 6 = **24**	3809	3 Vehicle Collision
Intel® Xeon® Six Core X5670	1 x 2 x 6 = **12**	7403	3 Vehicle Collision

SGI

Cloud Computing

LS-DYNA core use by the month

SGI Cloud Computing with LS-DYNA

For LS-DYNA customers that need additional LS-DYNA core use by the month, the week, or the day contact cyclonesales@sgi.com

The SGI technology at Cyclone's core is comprised of some of the world's fastest supercomputing hardware architectures, including SGI® Altix® scale-up, Altix® ICE scale-out and Altix® XE hybrid clusters, all based on Intel® Xeon® or Itanium® processors. The hybrid architecture offers either NVIDIA® Tesla GPUs or AMD FireStream™ GPU compute accelerators for floating point double precision workloads, and Tilera accelerators for integer workloads. High performance SGI InfiniteStorage systems are available for scratch space and long-term archival of customer data.

At the system software level, Cyclone offers a flexible computing environment with the choice of Novell® SUSE® or Red Hat® Linux® operating systems, further performance-optimized through the addition of SGI® ProPack™. Altair PBS Professional® and SGI® ISLE™ Cluster Manager provide system scheduling and management.

With Cyclone's SaaS model, SGI delivers access to leading-edge open source applications and best-of-breed commercial software platforms from top Independent Software Vendors (ISVs).

Supported applications include:

OpenFOAM, NUMECA, Acusolve, LS-Dyna, Gaussian, Gamess, NAMD, Gromacs, LAMMPS, BLAST, FASTA, HMMER, ClustalW and OntoStudio. SGI expects to add additional domains and applications partners over time…

Complete information at:

http://www.sgi.com/products/hpc_cloud/

Guy Fawkes' 1605 attempt to blow up the UK Houses of Parliament.

Arup Advanced Technology + Research
http://www.arup.com/Projects/Gunpowder_plot.aspx

The Advanced Technology and Research (AT+R) practice at Arup generates exceptional value by promoting innovative concepts and alternative design strategies, often supported by advanced numerical optimisation techniques.

Arup AT+R makes extensive use of the Oasys LS-DYNA Environment software in the consultancy work it undertakes across a broad range of disciplines including automotive, rail, civil, structural, wind and vibration engineering. For more information visit the

Arup's blast analysis techniques used to recreate the notorious plot.

Arup's applied analysis techniques, designed to investigate modern-day terrorism, were used to reconstruct Guy Fawkes' 1605 attempt to blow up the UK Houses of Parliament.

Guy Fawkes attempted to kill King James I and almost every influential person in the land. He was captured directly below Parliament with 36 barrels of gunpowder and a slow-burning fuse. Since then, historians have speculated about the results if Fawkes had not been prevented from setting off the gunpowder.

To mark the 400th anniversary of the plot, a television programme was commissioned to recreate the event.

For LS-DYNA Sales: Oasys Ltd is the software house of Arup and distributor of the LS-DYNA software in the UK, India and China. We also develop the Oasys suite of pre- and post-processing software for use with LS-DYNA:
http://www.oasys-software.com/dyna/en/

Isogeometric Analysis 2011
www.ices.utexas.edu/iga
January 13-15, 2011, Austin Texas
Integrating Design and Analysis

Dr. David Benson
dbenson@ucsd.edu

Contact: Ruth Hengst - e-mail ruthusacm@ices.utexas.edu

Geometry is the foundation of analysis yet modern methods of computational geometry have until recently had very little impact on analysis. The reason may be that Finite Element Analysis (FEA), as we know it today, was developed in the 1950's and 1960's, before the advent and widespread use of Computer Aided Geometric Design (CAGD), which occurred in the 1970's and 1980's. The CAGD – FEA interface gives rise to many problems.

Perhaps the most significant of all is the problem of translating CAGD files into analysis-suitable FEA geometry and meshing, reputed to take 80% of overall analysis time for complex engineering designs. The approximate, polynomial-based geometry of FEA also creates difficulties in modeling sliding contact, flows about aerodynamic shapes, buckling of thin shells, etc. It would seem that it is time to look at more powerful descriptions of geometry to provide a new and more efficient basis for analysis. An attempt to address these issues and improve on FEA has led to the introduction and development of Isogeometric Analysis, in which a single geometric representation is utilized for design and analysis. Among the approaches that have been proposed, those that have demonstrated the most potential so far are Subdivision Surfaces, NURBS, and T-Splines. NURBS are the industry standard for CAGD systems used in engineering design. NURBS-based isogeometric analysis has already been applied to fluids, structures, fluid-structure interaction, phase-field modeling, electromagnetics, shape and topology optimization, material modeling (e.g., implicit gradient damage models), discrete and diffuse modeling of crack propagation, etc. T-Splines, which are a generalization of NURBS that allow efficient local refinement while maintaining higher-order continuity and exact geometry, have recently attracted increasing attention. The purpose of this workshop is to bring together experts in geometry and analysis interested in the development of the new generation of analysis procedures based on modern methods of computational geometry. The workshop will focus on:

- Analysis-suitable geometry
- Mathematics of isogeometric methods
- New isogeometric analysis technologies
- Applications
- Implementation and software
- History of CAGD and FEA

New Short Course on Impact and Blast Effects: Theory, Analysis and Design

Among the presenters will be Mr John Crawford,
Karagozian & Case, California, USA
http://www.kcse.com
Mr. Crawford has provided engineering services related to blast effects to a variety of US Government agencies, building developers and owners, as well as commercial engineering and architectural firms for over 30 years. This work includes designing structural and mechanical systems to resist blast loads; developing engineering tools and first principle finite element codes for predicting the response of structural and mechanical systems to airblast and high velocity impacts; and testing full-scale and scaled structural systems under small to very large blast loads. In recent years, much of his work has been focused on the antiterrorist programs of various US Government agencies, performing blast effects analyses of a variety of buildings and structures, and developing design concepts for new construction and retrofit of existing buildings to protect them from blast and impact loads.

What is the course about?

The course is designed for professional engineers, consultants, researchers and graduate students, who may be involved in analysis, testing, modelling, design and the assessment of structures against impact and blast loads. It will cover basic and theoretical concepts, analytical, modelling and design methods and practical applications for structural protection against impact and blast effects.

Background

Impact and blast threats exist in a wide range of engineering, security and defense sectors, which have been frequently linked to industrial safety (surface/air/space transportations, nuclear power plant, offshore platforms and critical facilities in other industries) and protections against impact and blast effects in terrorist and battlefield events. Depending on the impact velocity and blast intensity, material and structural behavior may become very different from their quasi-static behavior when inertia and/or strain-rate effects become dominant in

impact and blast events, which need to be considered in the design of protective structures against impact and blast loads. This short course integrates basic theory, design methodology and latest research progress and offers an introduction to professionals and researchers for dealing with impact and blast effects in various engineering fields.

Who should attend?

This course will provide an introductory training for practicing engineers, consultants, researchers and research students, who may involve in dealing with impact and blast effects in mechanical engineering, civil engineering, nuclear engineering, aerospace engineering, oil and petrochemical engineering and defence engineering and industries. The course will be also suitable to architects, estate developers and security managers, who need updating in the latest developments in this area.

Course Presenters:

Mr John Crawford,
Karagozian & Case, California, USA

Dr Qingming Li
Reader and Leader of Impact and Explosion Expert Group
School of Mechanical, Aerospace and Civil Engineering — The University of Manchester, UK

Dr Hong Hao
Professor of Structural Dynamics
School of Civil and Resource Engineering — The University of Western Australia

For Information:
http://www.mace.manchester.ac.uk/business/cpd/courses/ballistic/index.html

LS-DYNA Training

China

The advanced training courses "Crashworthiness Theory and Technology", and "Introduction of LS-OPT which is based on LS-DYNA", taught by Dr. Shengrong Wu, Chief Engineer at Automobile Engineering Research Institute, Chery Automobile CO., LTD. and Dr. Nielen Stander, senior engineer, from LSTC, have been successfully held at Shanghai, China by Shanghai Hengstar Technology Corp. www.hengstar.com on July 8-10 2010.

We appreciated LSTC and FEA information www.feainformation.com for their kind supports and assistance in arranging this course. CAE engineers from Geely, JMC, DNS, Tianjing FAW, FAWAY JOHNSON, Chery, TRANE, Shanghai JiaoTong Univ., Jilin University, and HeHai University, etc attended the seminar. All the attendees gave a very high evaluation of course content and presentation. They appreciated this chance to have a face-to-face discussion with senior experts from automobile industry with a strong experience in foreign and domestic automobile design, and from LSTC who implements the new features in LS-OPT. More courses on using LS-DYNA, taught by high level experts from LSTC and other consulting companies, will be available in the near future. It is our pleasure to have a chance to provide these training courses and seminars to the CAE engineering community and LS-DYNA users in China.

Training Course on Pedestrian Safety and Passive Safety Simulation with LS-DYNA will be held on Sep. 26-28 2010. Dr. Yuanzhi Hu, the chief engineer of the Automobile Engineering Research Institute at China Automotive Technology & Research Center will provide the pedestrian safety with LS-DYNA in 1-day, and Mr. Dilip Bhalsod, senior engineer, from LSTC will give the 2-days seminar on passive safety Simulation with LS-DYNA. CAE engineers are very welcome to attend the 3-days seminar, and the detailed information can be found at website www.hengstar.com

CaféNews
ANSYS Turns 40

http://www.mcadcafe.com/

Contact: David Heller, David.Heller@MCADCafe.com

A Must Read Article: ANSYS Turns 40

"…The editors of MCADCafe.com are pleased to offer its readers a chance to see an article written by long-time MCAD/MCAE and EDA veteran Dr. Russ Henke, about the 40th Anniversary of ANSYS, Inc. (Dr. Henke is the author of the MCAD Commentaries that have appeared quarterly (since 2003) in MCADCafe.com, that recount the then-current financial performances of a group of leading public MCAD/MCAE vendors)…"

The Full article can be read at:
http://www10.mcadcafe.com/nbc/articles/view_weekly.php?articleid=844029&page_no=1

Two benefits of their desktop delivery is that you may choose how often you want to receive your copy of CafeNews. Additionally, you can select whether you want your version as an HTML page, or in text only version. Of course, as a courtesy, you can change your preferences, or unsubscribe from the service at any time by simply clicking a link on each delivered issue.

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Among their many website features:

- Corporate Newsletters
  - Issues of FEA Information Inc.
- Events
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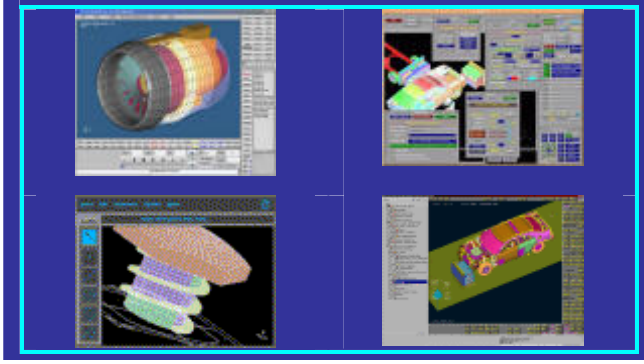
- Products
- Books
- Resources
- Forums
- Blogs
- Videos and Movies
- Audio Interviews
- Newsgroups

More Information, Contact:
David Heller
Managing Director
MCADCafe.com
408-850-9201
David.Heller@MCADCafe.com



Pre-Processing

Post Processing

Model Editing

A preprocessor is a program that processes its input data to produce output. This data is then used as input to another program.

BETA CAE Systems S.A.

http://www.beta-cae.gr/

Provides complete CAE pre- and post-processing solutions. ANSA, the world wide standard pre-processor and full product modeler for LS-DYNA, with integrated Data Management and Task Automation. µETA, with special features for the high performance an effortless 3D & 2D post-processing of LS-DYNA results.

Engineering Technology Associates, Inc.

http://www.inventiumsuite.com

PreSys is an advanced Pre/Post Processor. PreSys is a full-featured, core solution that can be used on its own or with a variety of available add-on applications. The system offers advanced automeshing tools to provide the highest quality mesh with little CAD data preparation. It also features a scripting interface and model explorer feature for in-depth data navigation.

Oasys, Ltd

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

Oasys Primer is a model editor for preparation of LS-DYNA input decks. - Oasys D3Plot is a 3D visualization package for post-processing LS-DYNA analyses using OpenGL® (SGI) graphics.

JSOL Corporation

http://www.jsol.co.jp/english/cae/

JVISION is a general purpose pre-post processor for FEM software. Designed to prepare data for, as well as support, various types of analyses, and to facilitate the display of the subsequent results.

Livermore Software Technology Corporation

http://www.lstc.com

LS-PrePost is an advanced interactive program for preparing input data for LS-DYNA and processing the results from LS-DYNA analyses.

LS-DYNA Distributors

LS-DYNA is delivered with
LS-OPT
LS-PrePost
LSTC Dummy & Barrier Models

Alpha Order by Country

Australia	Leading Eng. Analysis Providers - LEAP http://www.leapaust.com.au/ info@leapaust.com.au
Canada	Metal Forming Analysis Corp - MFAC http://www.mfac.com/ galb@mfac.com
China	OASYS Ltd. (software house of Arup) http://www.oasys-software.com/dyna/en stephen.zhao@arup.com
France	ALYOTECH TECH. http://www.alyotech.fr nima.edjtemai@alyotech.fr
France	ALLIANCE SVCE. PLUS - AS+ http://www.asplus.fr/ls-dyna v.lapoujade@asplus.fr
Germany	CADFEM http://www.cadfem.de/en lsdyna@cadfem.de
Germany	DYNAmore http://www.dynamore.de/ uli.franz@dynamore.de

LS-DYNA Distributors

LS-DYNA is delivered with
LS-OPT
LS-PrePost
LSTC Dummy & Barrier Models

India	OASYS Ltd. (software house of Arup) http://www.oasys-software.com/dyna/en lavendra.singh@arup.com
India	EASi Engineering http://www.easi.com/ rvenkate@easi.com
India	CADFEM Eng. Svce India http://www.cadfem.in/ info@cadfem.in
Italy	EnginSoft SpA http://www.enginsoft.it/ info@enginsoft.it
Japan	JSOL Corporation http://www.jsol.co.jp/english/cae cae-info@sci.jsol.co.jp
Japan	ITOCHU Techno-Solutions Corp. http://www.engineering-eye.com/ ls-dyna@ctc-g.co.jp
Japan	FUJITSU http://jp.fujitsu.com\solutions\hpc\app\lsdyna\

LS-DYNA Distributors

LS-DYNA is delivered with
LS-OPT
LS-PrePost
LSTC Dummy & Barrier Models

Korea	Theme Engineering http://www.lsdyna.co.kr/ wschung@kornet.com
Korea	Korea Simulation Technologies http://www.kostech.co.kr young@kostech.co.kr
Netherlands	Infinite Simulation Systems, BV http://www.infinite.nl/ j.mathijssen@infinite.nl
Sweden	Engineering Research AB http://www.erab.se/ sales@erab.se
Taiwan	Flotrend Corporation http://www.flotrend.com.tw/ gary@flotrend.tw
Russia	State Unitary Enterprise –STRELA info@ls-dynarussia.com

LS-DYNA Distributors

LS-DYNA is delivered with
LS-OPT
LS-PrePost
LSTC Dummy & Barrier Models

United Kingdom	OVE ARUP & PARTNERS http://www.oasys-software.com/dyna/en/ dyna.sales@arup.com
USA	Livermore Software Tech. Corp. - LSTC http://www.lstc.com/ sales@lstc.com
USA	Engineering Tech. Assc. Inc. – ETA http://www.eta.com/ sales@eta.com
USA	DYNAMAX http://www.dynamax-inc.com/ sales@dynamax-inc.com

Finite Element Analysis

North America

FEA Consulting/Consultants
&
Engineering Services

FEA Consultants use a wide range of software simulation programs. Their expertise using specific programs for their customers offers the ability for controlling the modeling and analysis of structures, systems, products and many other applications. Consultants and Engineering Services are used by government, homeland security, court trials, and a number of industries needing to have outside sources for expertise in FEA

http://www.fea-consulting.com

North America

Located: California'

Karagozian & Case - (K&C)
http://www.kcse.com

Shangrui Lan
(818) 303-1268

Located: Connecticut

CAE Associates
http://www.caeai.com

(203) 758-2914

Located: Oregon

Predictive Engineering
http://predictiveengineering.com

George Laird
(800) 345-4671

Located: California

Schwer Engineering
http://schwer.net

Len Schwer
(707) 837-0559

Located: Texas

KBEC
Khan Bui

(512) 363-2739

Located: Ohio

AEG Product Engineering Svce.

http://engineering-group.com
support@enginering-group.com

Software & Hardware Alliances

Software Solutions
SMP/MPP Hardware & OS
MPP & Interconnect MPI

ETA – DYNAFORM & VPG

http://www.eta.com

Includes a complete CAD interface capable of importing, modeling and analyzing, any die design. Available for PC, LINUX and UNIX, DYNAFORM couples affordable software with today's high-end, low-cost hardware for a complete and affordable metal forming solution.

ETA – VPG

http://www.eta.com

Streamlined CAE software package provides an event-based simulation solution of nonlinear, dynamic problems. eta/VPG's single software package overcomes the limitations of existing CAE analysis methods. It is designed to analyze the behavior of mechanical and structural systems as simple as linkages, and as complex as full vehicles.

OASYS software for LS-DYNA

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

Oasys software is custom-written for 100% compatibility with LS-DYNA. Oasys PRIMER offers model creation, editing and error removal, together with many specialist functions for rapid generation of error-free models. Oasys also offers post-processing software for in-depth analysis of results and automatic report generation.

Software & Hardware Alliances

Software Solutions
SMP/MPP Hardware & OS
MPP & Interconnect MPI

ESI Group Visual-CRASH For DYNA

http://www.esi-group.com

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.

BETA CAE Systems S.A.– ANSA

http://www.beta-cae.gr

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

BETA CAE Systems S.A.– μETA

http://www.beta-cae.gr

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

FEA Participants

SMP & MPP Hardware & OS

For LS-DYNA®

http://www.hpcservers.com

CRAY XD1	Linux
HP PA-8X00	HP-UX 11.11 and above
HP IA-64	HP-UX 11.22 and above
HP Opteron	Linux CP4000/XC
INTEL IA32	Linux, Windows
INTEL IA64	Linux
INTEL Xeon	Linux Windows 64 bit
SGI Mips	IRIX 6.5 X
SGI IA64	SUSE 9 w/Propack 4 RedHat w/Propack 3

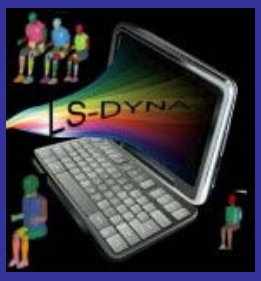
FEA Participants

MPP and Interconnect and MPI

For LS-DYNA®

http://www.hpcservers.com

Vendor	O/S	HPC Interconnect	MPI Software
CRAY XD1	Linux		
HP PA8000	HPUX		
HPIA64	HPUX		
INTEL IA32	Linux, Windows	InfiniBand (Voltaire), MyriCom	Open MPI, MPICH, HP MPI, SCALI
INTEL IA64	Linux		Open MPI, MPICH, HP MPI
INTEL Xeon	Linux x86-64 Windows 64	InfiniBand (Topspin, Voltaire), MyriCom, PathScale InfiniPath	Open MPI, MPICH, HP MPI, INTEL ICR, SCALI
SGI Mips	IRIX 6.5 X	NUMAlink	MPT
SGI IA64	SUSE 9 w/Propack4 RedHat w/Propack 3	NUMAlink, InfiniBand (Voltaire)	MPT, Intel MPI, MPICH



Crash Test Dummy Models

Anthropomorphic Test Devices
Crashest Devices
Websites/Information

FEA Information

http://www.ls-dynadummymodels.com

LSTC's Models

http://www.lstc.com/models/

Arup Cellbond Barrier Models

http://www.oasys-software.com/dyna/en/fe-models/barrier.shtml

Arup Pedestrian Impactor Models

http://www.oasys-software.com/dyna/en/fe-models/pedestrian.shtml

Arup RCAR Barrier Model

http://www.oasys-software.com/dyna/en/fe-models/rcar.shtml

DYNAMore Models for

http://www.dummymodels.com

LS-DYNA Dummy Mailing List

sarba@lstc.com

SUPPORT SITES FOR LS-DYNA

The Official LS-OPT Support site

[http://www.lsoptsupport.com]

LS-OPT User's Group on Google

A new LS-OPT User Group has been established. The intention of this group is to support LS-OPT users and to provide useful information according to LS-OPT. In addition, the user group provides the possibility to get in contact with other users and to share experience on the application of LS-OPT.

In order to subscribe to the group, please use the following (external) link:
https://www.google.com/accounts/ServiceLogin?service=groups2&passive=1209600&continue=http://groups.google.com/group/lsopt_user_group&followup=http://groups.google.com/group/lsopt_user_group

The Official LS-OPT Support site
[http://www.lsoptsupport.com] is jointly monitored by DYNAmore GmbH (Germany) and LSTC (US)

The LS-OPT support site was jointly developed to keep you updated with current information. During January 2010 the site will be updated with

"Getting Started"
A first place to stop for new users to view the LS-OPTui and the basic procedures of optimization with LS-OPT.

How To's
A collection of information and examples for several tasks with LS-OPT

Documents
A collection of documents related to LS-OPT, Optimization and Stochastics

Examples
This Section demonstrates LS-OPT capabilities by means of a series of examples

Glossary
Alpha order to view definitions such as Anova, Bias error, Iteration and other technical terms.

Downloads
Downloads specific to LS-OPT

FAQ's
Questions related to Optimization, Robustness and Reliability Analysis
Answers are posted on the LS-OPT Support Site
http://www.lsoptsupport.com/faqs

News
Latest news relation to, or about LS-OPT

9th German LS-DYNA User Forum

12th – 13th October, 2010,

Bamberg, Germany

DYNAmore invites you to contribute to the 9th German LS-DYNA Forum. The conference will be held in the marvellous city of Bamberg, awarded as Unesco world cultural heritage.

The conference will be an ideal forum to share and discuss experiences, to obtain information on upcoming features, and to learn more about new application areas of LS-DYNA and LS-OPT.

All users are kindly encouraged to submit a paper on any application of LS-DYNA or LS-OPT. Dr. John Hallquist as well as other developers from LSTC already confirmed contributions on new LS-DYNA and LS-OPT features. Almost all presenters will use English slides and many of the presentations will be held in English language.

Please download a Call for Papers and further information at

http://www.dynamore.de/german-forum-2010

Deadline for Abstract Submission:
21 May 2010.

Additionally, the conference offers information about products related to LS-DYNA and LS-OPT in a comprehensive hardware and software exhibition. Please find more details about exhibition and sponsorship at

http://www.dynamore.de/conferences/upcoming/2010-german-forum/exhibition-sponsoring

We are looking forward to welcoming you either as presenter, exhibitor, sponsor, or attendee.
Please find more information at www.dynamore.de

2010 EnginSoft International Conference
CAE Technologies for Industry
and
ANSYS Italian Conference

21-22 October 2010,
Fiera Montichiari, Brescia - Italy

For more than 20 years, the EnginSoft International Conference on "CAE Technologies for Industry" has been the reference event for the VP community in Italy, offering unique insights into: current and future values of software technologies, background trends, outstanding achievements, groundbreaking scientific developments and the visions of those who realize advancements.

The accompanying exhibition will see the world's leading CAE and VP solution providers showcasing products and services covering all aspects of the technologies and their successful implementation.

Delegates and exhibitors use the exhibition as an international networking forum to gain new insights, share experiences and find new business opportunities.

The 2010 EnginSoft International Conference also offers:

- a think tank bringing together executives from industry, research, academia and technology providers
- a panel of simulation-based engineering and science experts and technology experts
- an informal environment for delegates, technology providers, managers and experts to meet and share experiences, address key industry issues and challenges, and explore new business opportunities

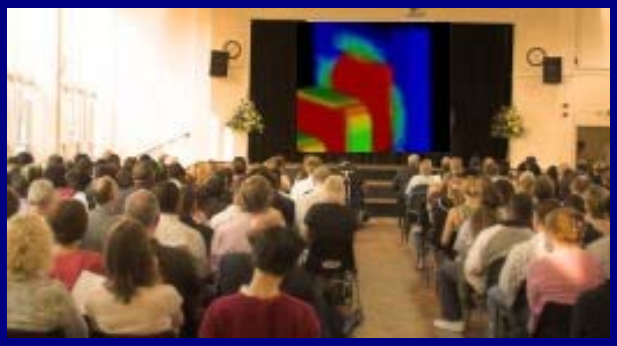
…in a word: the ideal occasion to discuss today's limitless applications of "simulation based engineering and sciences" in the true sense of the conference motto: "Believe in innovation: simulate the world"

The annual conference takes place concurrently with the ANSYS Italian Users' Meeting.

The conference program highlights applications in automotive, aerospace, energy, marine, oil & gas, consumer goods, environment, biomedicine and others and presents the use of the following software:
ANSYS - ANSYS CFX - ANSYS FLUENT - ANSYS ICEM CFD - modeFRONTIER - ANSOFT - -FLOWMASTER - MAGMASOFT - FORGE - FTI - THIRD WAVE SYSTEM

LSTC's LS-DYNA®

Submit a talk, attend the conference, visit the exhibition and/or be an exhibitor: www.caeconference.com



ERAB

The Nordic LS-DYNA Users' Forum

Sponsored by Microsoft

Engineering Research organizes the Nordic LS-DYNA Users' Forum biannually.

http://www.erab.se/?page+conf_registration

Nordic LS-DYNA Users' Forum: FREE of CHARGE,

About

The Nordic LS-DYNA Users' Forum will be held at Fars Hatt , Gothenburg, on October 14 2010.
The forum brings together LS-DYNA users, researchers and developers to discuss LS-DYNA developments and its applications in simulations of complex mechanical problems. Developers from LSTC will participate to inform about the latest developments in LS-DYNA, LS-PrePost and LS-OPT. Specially invited speakers will talk about how LS-DYNA simulations contribute to their companies and products. We expect 200 attendees from the Nordic countries and Baltic states.

Training and Seminars

In close connection to the forum, we are pleased to offer the following training classes and seminars in Gothenburg.

•LS-DYNA Introductory course

Date: Monday October 11 - Wednesday October 13.

•ANSA and mETA Introduction
Date: Thusday October 12 - Wednesday October 13.

TRAINING COURSES

Send listings to
aqiac99@aol.com

For changes for accuracy please see the company websites.

Australia – LEAP

http://www.leapaust.com.au/

Introduction to ANSYS Workbench Simulation
(including DesignModeler) Training
2-4 August 2010 Manly, NSW LEAP Office Bettina Schmidmayr

ANSYS Workbench Structural Nonlinearities
Training 5-6 August 2010 MANLY, NSW LEAP Office Bettina Schmidmayr

France – AS+ www.asplus.fr

September

14-16	**LS-DYNA Introduction (explicit)**
17	**LS-OPT Introduction**
27	**LS-DYNA Implicit – Introduction**
28	**LS-DYNA Implicit - Advanced**
29	**LS-PrePost 3.0 – Switch from 2.4 to 3.0**
30	**LS-PrePost 3.0 – Advanced Meshing capabilities**

US ETA
http://www.eta.com/index.php/support/training/training/month.calendar

- August 3-4 Introduction to DYNAFORM
- August 5 Introduction to PreSYS
-

UK - Oasys

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

Oasys PRIMER –
An Introduction 1 FREE 27th Sep 2010
LS-DYNA Introductory Course
25th-27th Oct 2010

For further information or to enrol on any of the courses listed below please contact:
Katherine Groves
0121 213 3399 at
katherine.groves@arup.com .

TRAINING COURSES

Send listings to
agiac99@aol.com

For Full Course List and Dated: **http://www.dynamore.de/seminars/infodays**

DYNAstart - Getting Started with LS-DYNA

Ingolstadt, Sep 22, 2010
Traboch, Austria, Nov 03, 2010
Stuttgart, Nov 10, 2010
Stuttgart, Dec 14, 2010

Possibilities of Computational Fluid Dynamics (CFD) with LS-DYNA

Stuttgart, Sep 30, 2010

LS-DYNA Application in Civil Engineering

Stuttgart, Oct 05, 2010

Capabilities of LS-DYNA/Implicit

Stuttgart, Oct 20, 2010

Support Day

Stuttgart, Oct 22, 2010
Stuttgart, Dec 17, 2010

Simulation of Drop Tests with LS-DYNA

Stuttgart, Oct 28, 2010

Introduction to Forming Simulation using LS-DYNA and ETA/DYNAFORM

Stuttgart, Nov 09, 2010

Visual-Crash DYNA - Environment for LS-DYNA

Stuttgart, Nov 24, 2010

Dynamic Material Characterisation using 4A Impetus

Stuttgart, Dec 01, 2010

Occupant Safety Support Day

Stuttgart, Dec 06, 2010

Current LS-DYNA Trends and Delevopments for Forming Simulations

Stuttgart, Dec 09, 2010

General Motors Renews $2 Billion HP Enterprise Services Agreement Supporting Vehicle Design and Production

http://www.hp.com/hpinfo/newsroom/press/2010/100721a.html
PALO ALTO, Calif., July 21, 2010

HP Enterprise Services today announced it has been awarded a multiyear applications and infrastructure services contract valued at more than $2 billion to help General Motors Company maintain focus on its business goals in a highly competitive market.

Under the terms of the agreement, HP will manage GM's technology infrastructure with a focus on providing an enhanced and continuously improving world-class end-user experience – from manufacturing plants to the boardroom. HP will provide network, workplace, mainframe management, applications and systems integration services for GM's global operations, including OnStar.

The new agreement covers a significant portion of HP's existing work with GM. It also renews the contract one year early and extends the two companies' 25-year relationship.

"GM's innovative business and in-vehicle technology strategy requires collaborative, cost-effective approaches so we can provide even better service to our customers as we design, build and sell the world's best cars and trucks," said Terry Kline, vice president, IT, and chief information officer, GM. "HP has been one of our most long-term, reliable partners with a team that has the expertise and creativity to help us quickly and successfully complete new phases of our business strategy."

HP will provide applications and infrastructure management services in support of tens of thousands of desktop PCs and mobile devices as well as GM's manufacturing and supply chain operations. Services include:

- Providing applications development and management services for product development, manufacturing, business services, supply chain, OnStar and more.
- Integrating a converged infrastructure and overall technology roadmap that supports GM's multisupplier technology environment.
- Providing managed mainframe services for GM's major business systems, including financial transactions and supply chain.
- Delivering HP global service desk and site support services in more than 50 countries and languages.

- Providing total remote network management for data, network security and videoconferencing services.

"The automotive industry is in the midst of a transformation and GM's technology infrastructure needs to be hitting on all cylinders to take full advantage of the potential market opportunities," said Tom Iannotti, senior vice president and general manager, HP Enterprise Services. "HP has a track record of outstanding service to GM that we will continue to deliver to help GM realize their business objectives."

HP Agility Alliance partners, including Microsoft and PricewaterhouseCoopers, will provide additional tools, technologies and resources to HP in support of GM.

About HP: HP creates new possibilities for technology to have a meaningful impact on people, businesses, governments and society. The world's largest technology company, HP brings together a portfolio that spans printing, personal computing, software, services and IT infrastructure to solve customer problems. More information about HP (NYSE: HPQ) is available at http://www.hp.com/ .

This news release contains forward-looking statements that involve risks, uncertainties and assumptions. If such risks or uncertainties materialize or such assumptions prove incorrect, the results of HP and its consolidated subsidiaries could differ materially from those expressed or implied by such forward-looking statements and assumptions. All statements other than statements of historical fact are statements that could be deemed forward-looking statements, including but not limited to statements of the plans, strategies and objectives of management for future operations; any statements concerning expected development, performance or market share relating to products and services; any statements regarding anticipated operational and financial results; any statements of expectation or belief; and any statements of assumptions underlying any of the foregoing. Risks, uncertainties and assumptions include macroeconomic and geopolitical trends and events; the execution and performance of contracts by HP and its customers, suppliers and partners; the achievement of expected operational and financial results; and other risks that are described in HP's Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2010 and HP's other filings with the Securities and Exchange Commission, including but not limited to HP's Annual Report on Form 10-K for the fiscal year ended October 31, 2009. HP assumes no obligation and does not intend to update these forward-looking statements.

SGI Announces Industry's First One-Stop-Shop Website for Advanced HPC Training

Hpctraining.com

http://www.sgi.com/company_info/newsroom/press_releases/2010/july/hpctraining.htm

Hpctraining.com Offers Courses Led by Industry Leaders from Multiple Companies; Online Forum Facilitates Easy Knowledge Sharing

FREMONT, Calif. — July 1, 2010 — SGI (NASDAQ: SGI), a global leader in HPC and data center solutions, today announced hpctraining.com, the industry's first complete, vendor-agnostic training portal aimed at the technical high performance computing (HPC) user community. Hpctraining.com offers a broad portfolio of courses — from novice to advanced — to help users realize the full potential of their HPC systems. Hpctraining.com offers E-Learning training courses, virtual classroom environments and customized on-site classes. A Technical User Forum enables simplified knowledge sharing around best practices.

Hpctraining.com brings an integrated systems approach to training directly to users from experts on a variety of in-depth technical topics. The site assembles instructors from a breadth of notable server, storage and software companies that span the industry.

"SGI created hpctraining.com as a one-stop shop to streamline training with a complete repository of courses from trusted vendors," said Peter Luff, professional services director at SGI. "Our common goal is to promote the best system operations training available."

Hpctraining.com provides coursework in the following areas:

- System Administration
- Network Administration
- Cluster Administration
- Storage Administration
- Visualization
- Applications/Software Development

Hpctraining.com partners include: Adaptive Computing, CAPS Software, Spectra Logic, Oracle, Red Hat, Novell, Atempo, Intel, LSI, Octality, Panasas and Platform Computing. Additional partners are expected in the coming months.

"Hpctraining.com literally opens the door to worldwide 'local' training, delivering courses directly to individual HPC users," said Derek Burke, channels and marketing director at Panasas. "It is extremely simple to manage training, from registration to coursework; it streamlines the entire learning process, and eliminates costly and time-

consuming travel. We are pleased to be a partner in this industry-first endeavor."

Users can earn points for the Accreditation for Continued Excellence (ACE) program. Hpctraining.com offers ACE credentials to students who successfully complete examinations on topics presented in one or more classes. Individual and sequence credentials are available.

"I have taken many valuable courses on HPC technology equipment through SGI Customer Education. Now hpctraining.com, with its cross-company curriculum, will become a very valuable HPC education hub," said Peter Guyan, production systems manager at Deluxe Digital London. "Previously the training approach in the market was adhoc and fragmented; now my staff and I can consider all of our training needs and benefit from a breadth of experts in one place, decreasing the time and cost of training and increasing our productivity."

Available Courses and Pricing: Hpctraining.com is available in English and French, and offers a range of tracks and coursework, with new additions all the time. For more information on availability and pricing, please visit www.hpctraining.com.

About SGI: SGI is a global leader in large-scale clustered computing, high performance storage, HPC and data center enablement and services. SGI is focused on helping customers solve their most demanding business and technology challenges. Visit www.sgi.com for more information.

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Contact Information:

Schwartz Communications, Inc.
Gina Titus
415-512-0770
SGIPR@schwartz-pr.com

Johnson King
Jonathan Mathias and Fiona Halkerston
+ 44 207 401 7968
SGIPR@johnsonking.co.uk

This news release contains forward-looking statements regarding SGI technologies and third-party technologies that are subject to risks and uncertainties. These risks and uncertainties could cause actual results to differ materially from those described in such statements. The reader is cautioned not to rely unduly on these forward-looking statements, which are not a guarantee of future or current performance. Such risks and uncertainties include long-term program commitments, the performance of third parties, the sustained performance of current and future products, financing risks, the ability to integrate and support a complex technology solution involving multiple providers and users, and other risks detailed from time to time in the company's most recent SEC reports, including its reports on Form 10-K and Form 10-Q

Cray Ships the First Multi-Cabinet Cray XE6 Supercomputer

News Release Cray Ships the First Multi-Cabinet Cray XE6 Supercomputer
SEATTLE, WA, Jul 26, 2010 (MARKETWIRE via COMTEX) --

Global supercomputer leader Cray Inc. (NASDAQ: CRAY) today announced it has shipped the first multi-cabinet Cray XE6 supercomputer. This is the beginning of the anticipated shipment of several significant systems to a number of customers over the next few months.

"We are very proud of achieving this important milestone, which is the result of innovation, hard work and a strong commitment from Cray employees company-wide," said Peter Ungaro, president and CEO of Cray. "There is still a lot of work to be done, but shipping the first large Cray XE6 system is a special accomplishment. On behalf of the company, I would like to thank our partners and suppliers, all of our customers who have been working with us through the development process and the United States Defense Advanced Research Projects Agency (DARPA) for their support. Also, I would like to extend a special thanks to our beta-testing partner, the Swiss National Supercomputer Center (CSCS), for their help in getting the Cray XE6 supercomputer ready to meet this major milestone."

Cray shipped a beta-level Cray XE6 system to CSCS in June and, in addition to the multi-cabinet system mentioned above, has also shipped a number of small, test and development systems to additional customers.

Launched in May 2010, the new Cray XE6 supercomputer combines the company's new Gemini system interconnect with powerful AMD Opteron(TM) processors and is designed to bring production petascale computing to a new and expanded base of high performance computing users. Fully upgradeable from a Cray XT5 or Cray XT6 system, the Cray XE6 supercomputer features additional enhancements such as an improved network resiliency, a mature scalable software ecosystem and the latest version of the Cray Linux Environment. This collection of industry-leading features provides Cray XE6 users with a supercomputing system that combines true scalable performance with production reliability.

Although Cray has begun shipping Cray XE6 systems, to obtain revenue and cash from these sales, or any future Cray XE6 deliveries, the company must obtain customer acceptances of the systems typically based on a multi-week process

of performance, functionality and reliability testing.

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. Cray technology is designed to enable scientists and engineers to achieve remarkable breakthroughs by accelerating performance, improving efficiency and extending the capabilities of their most demanding applications. Cray's Adaptive Supercomputing vision is focused on delivering innovative next-generation products that integrate diverse processing technologies into a unified architecture, allowing customers to surpass today's limitations and meeting the market's continued demand for realized performance. Go to www.cray.com for more information.

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 our ability to deliver additional Cray XE6 systems over the coming months and obtain revenue and cash from these and other Cray XE6 sales. These statements involve current expectations, forecasts of future events and other statements that are not historical facts. Inaccurate assumptions and known and unknown risks and uncertainties can affect the accuracy of forward-looking statements and cause actual results to differ materially from those anticipated by these forward-looking statements. Factors that could affect actual future events or results include, but are not limited to, the risk that customer acceptances on Cray XE6 systems are not received when expected or at all, the risk that Cray XE6 systems do not perform as expected or as required by customers, the risk that we are unable to successfully manufacture what for us would be an extremely large number of system cabinets in a relatively short period of time, the risk that the Company is not able to adequately resolve or mitigate potential Cray XE6 product issues known now or that are discovered later and such other risks as identified in the Company's quarterly report on Form 10-Q for the quarter ended March 31, 2010, and from time to time in other reports filed by Cray with the U.S. Securities and Exchange Commission. You should not rely unduly on these forward-looking statements, which apply only as of the date of this release. Cray undertakes no duty to publicly announce or report revisions to these statements as new information becomes available that may change the Company's expectations.

Cray Media: Nick Davis
206/701-2123 - pr@cray.com

Cray Investors: Paul Hiemstra
206/701-2044
ir@cray.com

In Review

4th PhilonNet CAE Conference

The 4th PhilonNet CAE Conference was held on 17 June 2010 at the Training Center of the National Bank of Greece in Athens. Presenting, for the first time, at the conference was Roger Grimes of LSTC.

Attendees enjoyed a day full of exciting speeches and presentations from an international group of experienced engineers on how Computer Aided Engineering Technologies help companies jump ahead of their competition, covering a wide range of application areas. Coffee breaks, lunch and the evening reception left room to relax and meet with people, discuss projects and ask in-depth questions.

Feedback from all the attendees was overwhelmingly positive and are looking forward to the 5th PhilonNet CAE Conference. Each year attendance and enthusiasm for the conference grows from within Greece and worldwide.

The theme of the conference "Drive Innovation with Simulation" was outlined with multiple examples of industrial applications demonstrating the benefits of simulation technologies: Reduced product cost, faster development cycles, improved part quality, more new products per year and increased innovation.

Among the many presentations and speakers making the conference a success was **Roger Grimes**, senior developer at LSTC, showed advances in process integration in LS-DYNA, which make it possible to switch seamlessly between explicit and implicit solvers with just one command in the input deck, helping to solve difficult problems like spring-back in sheet-metal forming applications more efficiently and faster.

Abe Keisoglou, President of ETA introduced Accelerated Concept to Product Processes as well as information on VPG, DYNAform, and Inventium a suite of solutions built within a dynamic, user-friendly architecture

More contributions from industry and academics were presented by

- Charalambous, Assoc. Researcher, Hydrus, Cyprus
- Founti, Professor, NTUA, Greece
- Natsiavas, Professor, AUTH, Greece
- Odorizzi, CEO, EnginSoft, Italy
- Penzar, Expert CAE, Continental, Germany
- Provatidis, Professor, NTUA, Greece
- Vlahinos, Principal, aes, USA.

The abstracts are posted on the web pages of PhilonNet at:
www.philonnet.gr/events