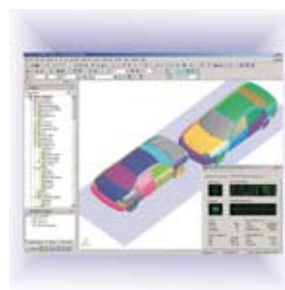


AUGUST
2008

fea INFORMATION

WWW.FEA INFORMATION.COM

ESI Group
Visual Crash for DYNA



Simpleware
Image-based
Meshing



New
LS-OPT®
Support Website





FEA Information Announcements:

FEA Information –India - Hot Forming

We are pleased to announce a support e-mail for hot forming engineers in India
hotforming@feainformation.com

Dhev Anandh, Cranes Software, India:

Dhev Anandh Dhev.Anandh@cranesoftware.com is your metal forming support contact for DYNAform.

LSTC:

10th International Conference CD is now available for mailing – no fee for CD, or postage.

If you would like the CD contact marsha@lstc.com

Sarba, LSTC Michigan:

H-III Dummy Model" mailing list

You will receive all LSTC's new H-III Dummy Releases and Updates.

If you would like to be on the H-III Dummy mailing list contact me, sarba@lstc.com

Reminder for September 11th, 2008 afternoon from 2pm to 6pm

A half-day seminar to our customers to present "New Capabilities and Current Developments of LS-DYNA". ALYOTECH TECHNOLOGIES - *société du groupe ALYOTECH FRANCE* – Contact: nima.edjtemai@alyotech.fr

Sincerely,

Art Shapiro
Marsha Victory
Trent Eggleston
Wayne Mindle

Editor
President
Business Manager
Graphics

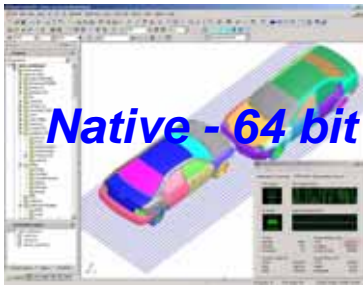
art@feainformation.com
mv@feainformation.com
feanswer@aol.com
wlm@lstc.com

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ESI Group – Visual Crash for DYNA

A Powerful Open Environment for LS-DYNA



Visual-Crash for DYNA is the most competitive environment solution for LS-DYNA solver. It 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 as it addresses the coupling with tier Finite Element or Rigid Body simulation software. Leveraging this state of the art environment, Visual Viewer, a visualization and plotting solution, helps analyze LS-DYNA results within a single user interface. Visual Viewer performs automated tasks and generate customized reports therefore increasing engineers productivity

Key Features

- Complete support of LS-DYNA till 971 Release 2
- Model Assembler
- Sub-Assembly Replace
- Advanced Part Replace
- Intersection and Penetration check
- LS-DYNA-MADYMO Coupling
- Entity Visualization

Benefits

- A complete solution for Crash and Safety simulation that can be coupled with process automation solution within a single user interface which increase productivity.
- Large data models management which addresses refined model or car to car crash scenarios

- Allows users to capture the best practice or recovery of the data
- using sessions, Quick and easy scripting customization through a direct access to the dialog box and the database.
- Fast iteration and rapid model revision process that shorten design cycles

[The full Power Point Presentation in pd format](#)

Featuring

- Modal Assembler
- Model Check, DYNA-MADYMO Coupling & Advanced Safety and Welding Functionalities
- Meshing and Mesh Editing
- Supported Platforms

Simpleware – image-based meshing: the simple way to FEA

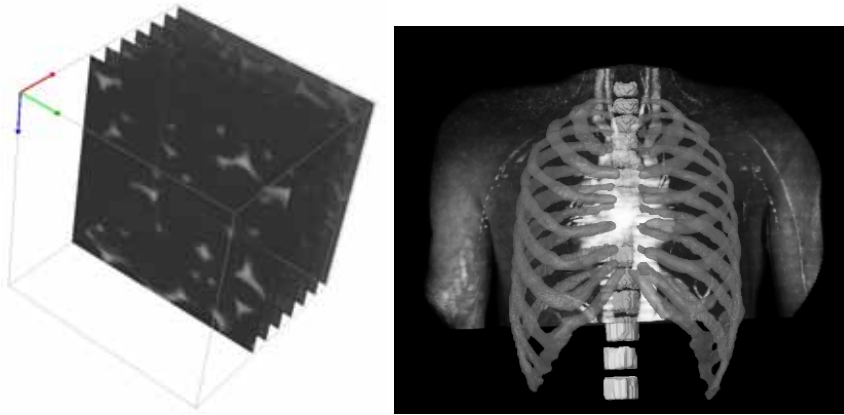
Simpleware develops world-leading mesh generation software which converts 3D scan data (e.g. MRI, CT, MicroCT, etc.) into high-quality computer models used for FEA and CFD, as well as CAD and Rapid Prototyping.

The ease and unprecedented accuracy with which Simpleware generates meshes has opened exciting new possibilities for LS-

DYNA users in a variety of research fields, including Biomechanics, Materials Research, and Industrial Reverse Engineering.

Simpleware provides a complete solution going from 3D image data right through to meshes suitable for use in FEA and CFD. The procedure for generating models is very simple and consists of the following 3 steps:

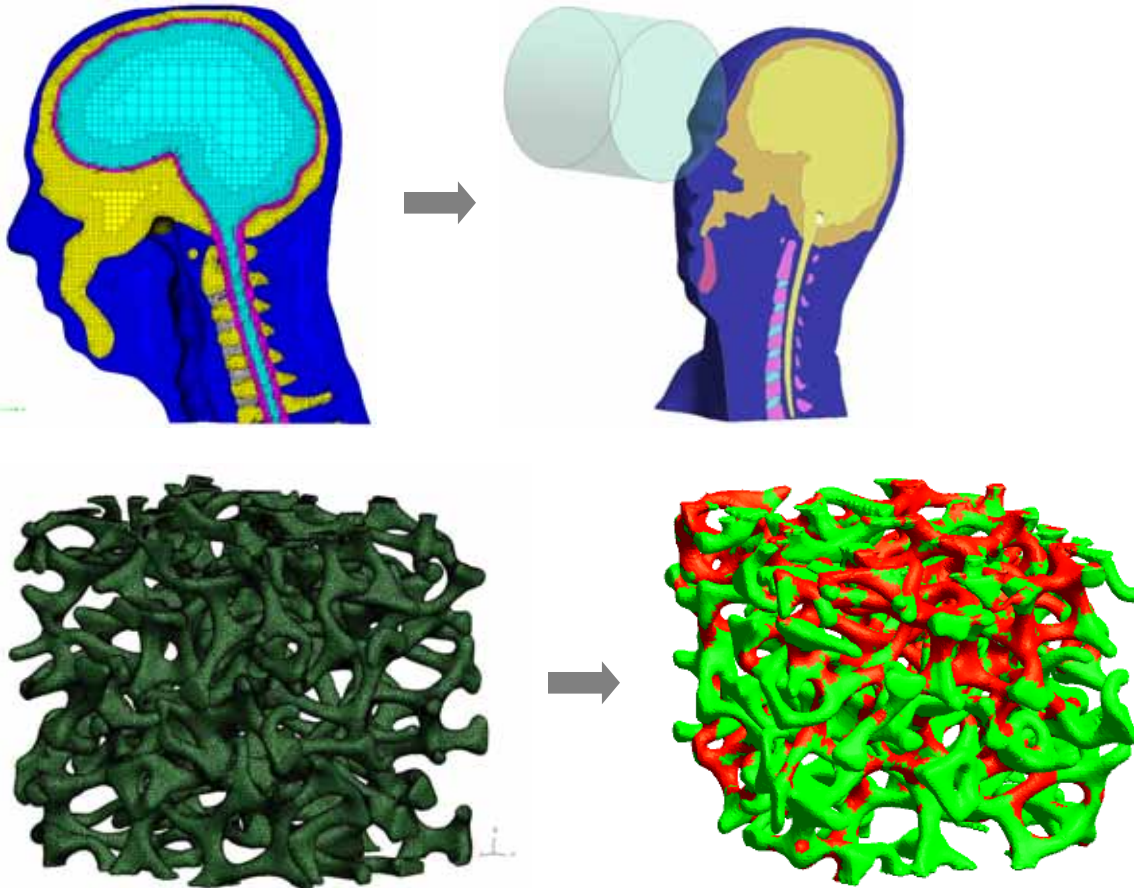
1) Obtain a 3D image of a part or object (e.g. from MRI, CT, MicroCT, etc)



2) Import into ScanIP software and segment structures of interest



3) Mesh using +ScanFE module and export directly to LS-DYNA



+ScanFE software generates volume and/or surface meshes, contact surfaces and material properties from segmented data. These high quality meshes can be directly imported into LS-Dyna, as well as a range of other commercial FE and CFD packages.

Researchers and engineers across a range of applications have been using Simpleware tools in combination with LS-DYNA for image-based modelling. Some of the advantages of using Simpleware include the ability to:

- Mesh topologically and geometrically complex problems with a high degree of accuracy.
- Mesh multiple components, allowing for user defined contact surfaces at interfaces.
- Assign material properties within a give structure based on signal strength.
- Export resulting meshes directly to LS-DYNA and other commercial FEA and CFD solvers.

- Reverse engineer physical components robustly into meshes in a fraction of the time taken with alternative approaches.

The ease and accuracy with which models can be generated opens up a wide range of previously difficult or intractable problems to FEA and CFD. Simpleware software improves productivity, leads to significantly more accurate results for image based models, and enables engineers to focus on the analysis and generation of results rather than on the geometry definition and mesh creation.

For further information and a free trial version, please contact us at info@simpleware.com or visit our website: www.simpleware.com. For more information on a Simpleware/LS-DYNA bundle, please contact Mr Brian Walker at ARUP: brian.walker@arup.com

New LS-OPT® Support Website

<http://www.lsoptsupport.com>

LSTC and DYNAmore have established a new website dedicated to support LS-OPT® users. General information about LS-OPT regarding optimization, DOE-studies and probabilistic analysis are available. In **Getting Started**, users can get a first idea how to apply LS-OPT. For this purpose a simple example with a very detailed explanation is introduced.

Several documents, papers, manuals and tutorials dealing with the application of LS-

OPT are provided in the folder **Documents**. An **FAQ** section contains frequently asked

questions, such as for example *“How does concurrent jobs work?”* or *“Which meta-model to choose?”*

In the area **HOWTO'S** it is planned to provide instructions, scripts and examples on different application tasks with LS-OPT, e.g. *“How to couple a User-Defined solver”* or *“Integrating ANSA in LS-OPT”* for shape optimization. A few topics are already available in this section, and will be added to on a regular basis.



Figure 1: Home of www.lsoptsupport.com

The menu **Downloads** offers the possibility to download current LS-OPT versions and Release Notes. **Glossary** describes many terms related to optimization, probabilistic analysis and LS-OPT. Presently the most comprehensive part is **Examples**. Several examples on different

LS-OPT tasks are already available including a detailed description with many GUI screenshots (see Figure 2). Downloading of files (command file, input files,...) for each example is possible.

The webpage www.lsoptsupport.com just started a few months ago. Therefore, some areas are rather sparsely filled, but will be complemented in the near future.

Comments and contributions are very welcome, please feel free to contact info@dynamore.de or support@lstc.com.



Figure 2: Examples dealing with different tasks of LS-OPT at www.lsoptsupport.com

TOP CRUNCH Participant Submission

www.topcrunch.org

August 05, 2008 Vendor/Submitter Org HP/HP

Computer/ Interconnect	Processor	#Nodes x #Processors per Node x #Cores Per Processor = Total #CPU	Time (Sec)	Benchmark Problem
CP3000/InfiniBand Topspin 270 SDR	Intel Xeon X5272 3.40GHz DL160	8 x 2 x 2 = 32	365	neon_refined_revised
CP3000/InfiniBand Topspin 270 SDR	Intel Xeon X5272 3.40GHz DL160	4 x 2 x 2 = 16	605	neon_refined_revised
CP3000/InfiniBand Topspin 270 SDR	Intel Xeon X5272 3.40GHz DL160	2 x 2 x 2 = 8	1155	neon_refined_revised
CP3000/InfiniBand Topspin 270 SDR	Intel Xeon X5272 3.40GHz DL160	1 x 2 x 2 = 4	2249	neon_refined_revised
CP3000/InfiniBand Topspin 270 SDR	Intel Xeon X5272 3.40GHz DL160	1 x 2 x 2 = 4	2249	neon_refined_revised
CP3000/InfiniBand Topspin 270 SDR	Intel Xeon X5272 3.40GHz DL160	8 x 2 x 2 = 32	4845	3 Vehicle Collision
CP3000/InfiniBand Topspin 270 SDR	Intel Xeon X5272 3.40GHz DL160	4 x 2 x 2 = 16	9040	3 Vehicle Collision
CP3000/InfiniBand Topspin 270 SDR	Intel Xeon X5272 3.40GHz DL160	2 x 2 x 2 = 8	16518	3 Vehicle Collision
CP3000/InfiniBand Topspin 270 SDR	Intel Xeon X5272 3.40GHz DL160	1 x 2 x 2 = 4	29808	3 Vehicle Collision

LS-PrePost® UPDATE August 18, 2008

<http://www.lstc.com/lsp>

LS-PrePost® was designed to provide the following core functionalities:

- ▶ Full LS-DYNA® keyword support
- ▶ LS-DYNA model visualization
- ▶ LS-DYNA model creation and editing
- ▶ Advanced post-processing

LS-PrePost's main post-processing capabilities include states result animation, fringe component plotting, and XY history plotting.

LS-PrePost is also capable of importing and exporting data in a number of common formats. The figure on the right illustrates a sampling of those that a typical user might find most useful.

- Added Roller Hemming interface (accessible through the [Applications Menu](#))
- Added *Project curves to elements* option to the [Curves](#) Interface
- Added ability to pick a line endpoint to define a coordinate system
- Added support for some additional keywords:
 - *BOUNDARY_PRESCRIBED_ORIENTATION_RIGID_VECTOR,
 - *CONTACT_TIEBREAK_SURFACE_TO_SURFACE_ONLY, *DATABASE_DCFAIL,
 - *DATABASE_ELOUTDET, *DATABASE_BINARY_BINOUT, *DATABASE_BINARY_BLSTFOR,
 - *DATABASE_ATDOUT, *DEFINE_CONNECTION_PROPERTIES,
 - *DEFINE_CONNECTION_PROPERTIES_ADD, *DEFINE_HEX_SPOTWELD_ASSEMBLY,
 - *ELEMENT_BEAM_SECTION_ORIENTATION, *ELEMENT_MASS_MATRIX,
 - *ELEMENT_MASS_MATRIX_NODE_SET, *INITIAL_AXIAL_FORCE_BEAM, *INITIAL_CESE_CONSTANT,
 - *LOAD_SEGMENT_SET_ANGLE, and *MAT_SPOTWELD_DAIMLERCHRYSLER
- Added 2D ALE post-processing capabilities: display Iso surface, fringe fluid material groups, and plot group histories
- Added thermal analysis post-processing capabilities: plot histories and fringe rate of change of temperature per node
- Added ability to display any combination of principal stress and strain vectors (X, Y, and/or Z)
- Added support for reading *DCFALL* in the [ASCII](#) Interface
- Added support for reading and displaying Altair binary format files
- Improved efficiency of binary *INTFOR* processing (minimized memory requirements for plotting nodal force histories and fixed treatment of surfaces with multiple contacts to account for displayed surfaces only)
- Added automatic clipping for cross plotting curves with a differing time basis

DYNAmore Training Courses In English language

DYNAmore GmbH phone +49 (0) 7 11 – 45 96 00 – 0
Industriestr. 2 e-mail: info@dynamore.de
70565 Stuttgart, Germany http://www.dynamore.de

Introduction to LS-DYNA

This two-day introductory seminar provides a quick yet comprehensive overview of how to use LS-DYNA. It is designed for simulation engineers intending to use LS-DYNA as an FE-code to simulate general non-linear

problems. No prior knowledge required. Seminar attendees will also carry out exercises on their own to get an even better understanding of the use of LS-DYNA.

Date 25th - 26th September

Costs 740,- Euro; 640,- Euro for 7th LS-DYNA Forum attendees

Introduction to LS-DYNA - Advanced Topics

This one-day introduction class to LS-DYNA deals with advanced topics, such as material modelling and contact formulations. There is a variety of different material models available in LS-DYNA which allow for a wide range of applications. Their knowledgeable use is one of the key ingredients of a reliable finite element simulation. It is the objective of this seminar to give practical guidelines on how to use the most commonly applied material formulations in LS-DYNA. In addition, the seminar gives

an overview of the possibilities, application areas and limits of particular contact formulations. The course will point out the possibilities of troubleshooting, if the behaviour of a contact is not what it is expected to be.

Prerequisite for this class is the seminar "Introduction to LS-DYNA" or appropriate experience with LS-DYNA. Beginners and more experienced users will benefit from this class.

Date 29th September

Costs 370,- Euro; 320,- Euro for 7th LS-DYNA Forum attendees

DYNAmore Training Courses (continued) In English language

Component Connections with LS-DYNA

This seminar will provide you with insights into the options to model and simulate component connections in LS-DYNA. In numerical simulations, the most frequently used connections, such as adhesive bonding, bolt fastening, welding, spot-weld adhesive bonding or riveting, each require a specific structural and material model. For this reason, we will thoroughly deal with the degree of support and structural stability provided by the individual connections and demonstrates possible modelling approaches (in conjunction with flange models). Currently used models will be discussed, and the reliability of the results obtained critically reviewed with particular emphasis on scenarios that include connection failure. Also, for welded and bolted connections in particular, the most recent LS-DYNA releases included a large number of new features and improvements. For

example, the contact treatment of flanges has been expanded to enable a better assessment of the spot-weld forces at solid and beam elements. Further failure options have also been introduced. In addition, a new keyword is available to model bolted connections, which allows for a simplified prestressing definition.

The seminar is designed for engineers with practical simulation experience who wish to broaden their knowledge in the field of connection simulations using LS-DYNA.

Lecturers:

Dr. André Haufe
(DYNAmore GmbH);

Dr. Markus Feucht (Daimler AG)

Date 22nd - 23rd September 2008

Costs 740,- Euro + VAT if applicable

Contact:

DYNAmore GmbH
Industriestr. 2
70565 Stuttgart, Germany

phone +49 (0) 7 11 – 45 96 00 – 0
e-mail: info@dynamore.de
<http://www.dynamore.de>

India News - Local Metal Forming Support

Dhev Anandh

India - DYNAFORM

Dhev Anandh Dhev.Anandh@cranesoftware.com is your metal forming support contact for DYNAform

India - Hot Forming

Support e-mail for LS-DYNA hot forming engineers in India
hotforming@feainformation.com

LS-DYNA, is the engine within DYNAFORM. Offering tremendous calculation power to support difficult modeling and simulation challenges within a die system, these powerful processing and solving technologies enable DYNAFORM to meet the needs of users today and those in the future.

Complete Die System Simulation Solution

DYNAFORM is the complete die system simulation solution. DYNAFORM allows the organization to entirely bypass soft tooling, reducing overall tryout time, lowering costs, increasing productivity and providing complete confidence in die system design. It also allows evaluation of alternative and unconventional designs and materials for an optimal solution. The most cost-effective and accurate solution available, DYNAFORM is the clear choice among progressive organizations seeking to streamline the die analysis system.

One Simple Interface

DYNAFORM encompasses the entire die system process in one simple interface. By simulating every detail during the design stage, DYNAFORM ensures the highest quality formed part and best manufacturing process. The system guides the engineer through cost estimation,

quoting, die face design and formability analysis. Then, in a virtual environment, moves the part through the stamping process inside the plant—station by station. DYNAFORM simulates trimming/shedding and scrap removal and analyzes die structural integrity. Finally, DYNAFORM evaluates the part transfer process within the die system and simulates the behavior of the part during shipping.

MODULES:

BSE Blank Size Engineering

The BSE module is a complete solution for accurate blank size estimation, nesting to maximize material utilization, piece price and scrap calculation. BSE is based on a one-step algorithm for rapid calculation. Potential forming failure due to excessive blank thinning is detected through an inverse method. BSE also creates a forming limit diagram (FLD) map for feasibility review.

DFE Die Face Engineering

Based on the product design of a panel, the DFE module offers capabilities of both CAD surface and CAE meshing tools. DFE Interactively generates binder surfaces, addendum profiles/surfaces, PO Lines and

layout drawbeads with full associativity between FEA mesh and surfaces. A preliminary die face is created for further formability studies with an iterative process until die face validation is achieved.

FS Formability Simulation

The FS module is a complete incremental die simulation program for quickly generating formability results at a very early stage of the product design cycle. It is suited for design feasibility analysis and verification. Stress, strain and thickening results are plotted and a complete forming limit diagram (FLD) is generated. It is a proven tool for uncovering hidden problem areas.

DSA Die System Analysis

DSA offers an LS-DYNA based FEA solution to analyze die system operations including scrap shedding/removal, die structural integrity and sheet metal transferring/handling. Further development will include trimming, flanging and hemming operations.

Panasas News Update

Michelle Cheng - Director, Business Development and Global Alliances

Panasas New Products Create First End-To-End Parallel Storage Platform.

On August 19th, Panasas, Inc., the global leader in parallel storage solutions, announced the expansion of the ActiveStor product line with increased performance, enterprise-class software capabilities and a new second-tier parallel storage solution.

View the full press-release here:

http://www.panasas.com/press_release_081908.html

Panasas New Products Webcast: September 17, 2008

If you are interested in learning about the improved performance, manageability, data-integrity and scalability features of ActiveStor high-performance storage join Panasas Director of Product Marketing, Matt Reid, for this live webcast where he will provide an overview of the new Panasas products, Register here, for the live webcasts being broadcast on September 17, 2008.

<http://www.panasas.com/solvingrealworldproblems/>.

Panasas Parallel Storage Boosts Performance and Productivity for the University of Cambridge

The University of Cambridge's High Performance Computing Service (HPCS) is experiencing a significant reduction in the time it takes to complete jobs, as well as increased system uptime. They attribute this boost in performance and productivity to deployment of a Panasas parallel storage system. The full release is located at:

http://www.panasas.com/press_release_061208.html

Enterprise Storage Forum Article: NFS Enters a Parallel Universe

The network file system (NFS) protocol is getting its biggest overhaul in more than a decade, and the results could be profound for end users. In this Enterprise Storage Forum article from August 7, 2008, Derek Robb interviews representatives from NetApp and Panasas and discusses how "pNFS changes the storage world." The full article is located at:

<http://www.enterprisestorageforum.com/ipstorage/features/article.php/3763911>

Pre Post Processing Software

Livermore Software Technology Corporation

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

Engineering Technology Associates, Inc

FEMB Engineering Technology Associates' Finite Element Model Builder (FEMB) is a finite element pre- and post-processor for use with all major analysis codes and CAD Software.

Japanese Research Institute, Ltd

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

Oasys, Ltd

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.

BETA CAE Systems S.A.

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.

Simpleware

Provides software solutions for robust, fast, and easy conversion of 3D images into high quality meshes which can be used for FEA, CFD, CAD, RP.

Participant LS-DYNA® Resource Page (alpha order)

Fully QA'd by Livermore Software Technology Corporation

SMP and MPP Hardware and OS

FUJITSU

FUJITSU Prime Power	SUN OS 5.8
FUJITSU VPP	Unix_System_V

HP

HP PA-8X00	HP-UX 11.11. and above
HP IA-64	HP-UX 11.22 and above
HP Opteron	Linux CP4000/XC
HP Alpha	True 64

INTEL

INTEL IA32	Linux, Windows
INTEL IA64	Linux
INTEL Xeon EMT64	Linux, Windows 64

NEC

NEX SX6	Super-UX
---------	----------

SGI

SGI Mips	IRIX 6.5X
SGI IA64	SUSE 9 w/Propack 4 Red Hat w/ Propak 3

Participant LS-DYNA® Resource Page (alpha order)

Fully QA'd by Livermore Software Technology Corporation

MPP and Interconnect MPI

FUJITSU

	O/S	HPC Interconnect	MPI Software
FUJITSU Prime Power	SUN OS 5.8		
FUJITSU VPP	Unix_System_V		

HP

	O/S	HPC Interconnect	MPI Software
HP PA8000	HPUX		
HP IA64	HPUX		
HP Alpha	True 64		

INTEL

	O/S	HPC Interconnect	MPI Software
INTEL IA32	Linux, Windows	InfiniBand (Voltaire), MyriCom	LAM/MPI, MPICH, HP MPI, SCALI
INTEL IA64	Linux		LAM/MPI, MPICH, HP MPI
INTEL Xeon EMT 64	Linux	InfiniBand(Topspin, Voltaire), MyriCom, PathScale InfiniPath	LAM/NPI, MPICH, HP MPI, INTEL MPI, SCALI

NEC

	O/S	HPC Interconnect	MPI Software
NEX SX6	Super-UX		

SGI

SGI Mips	IRIX 6.5 X	NUMalink	MPT
SGI IA 64	SUSE 9 w/Propack 4 RedHat w/Propack 3	Numalink, InfiniBand(Voltaire)	MPT, Intel MPI, MPICH

LS-DYNA® Resource Page - Participant Software

Interfacing or Embedding LS-DYNA - Each software program can interface to all, or a very specific and limited segment of the other software program. The following list are software programs interfacing to, or have the LS-DYNA solver embedded within their product. For complete information on the software products visit the corporate website.

ANSYS - ANSYS/LS-DYNA ANSYS/LS-DYNA

Built upon the successful ANSYS interface, ANSYS/LS-DYNA is an integrated pre and postprocessor for the worlds most respected explicit dynamics solver, LS-DYNA. The combination makes it possible to solve combined explicit/implicit simulations in a very efficient manner, as well as perform extensive coupled simulations in Robust Design by using mature structural, thermal, electromagnetic and CFD technologies.

AI *Environment:

A high end pre and post processor for LS-DYNA, AI*Environment is a powerful tool for advanced modeling of complex structures found in automotive, aerospace, electronic and medical fields. Solid, Shell, Beam, Fluid and Electromagnetic meshing and mesh editing tools are included under a single interface, making AI*Environment highly capable, yet easy to use for advanced modeling needs.

ETA – DYNAFORM

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

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.

MSC.Software - MSC.Dytran LS-DYNA

Tightly-integrated solution that combines MSC.Dytran's advanced fluid-structure interaction capabilities with LS-DYNA's high-performance structural DMP within a common simulation environment. Innovative explicit nonlinear technology enables extreme, short-duration dynamic events to be simulated for a variety of industrial and commercial applications on UNIX, Linux, and Windows platforms.

MSC.Software - MSC.Nastran/SOL 700

The MSC.Nastran™ Explicit Nonlinear product module (SOL 700) provides MSC.Nastran users the ability access the explicit nonlinear structural simulation capabilities of the MSC.Dytran LS-DYNA solver using the MSC.Nastran Bulk Data input format. This product module offers unprecedented capabilities to analyze a variety of problems involving short duration, highly dynamic events with severe geometric and material nonlinearities.

MSC.Nastran

Explicit Nonlinear will allow users to work within one common modeling environment using the same Bulk Data interface. NVH, linear, and nonlinear models can be used for explicit applications such as crash, crush, and drop test simulations. This reduces the time required to build additional models for another analysis programs, lowers risk due to information transfer or translation issues, and eliminates the need for additional software training.

MSC.Software – Gateway for LS-DYNA

Gateway for LS-DYNA provides you with the ability to access basic LS-

DYNA simulation capabilities in a fully integrated and generative way. Accessed via a specific Crash workbench on the GPS workspace, the application enhances CATIA V5 to allow finite element analysis models to be output to LS-DYNA and then results to be displayed back in CATIA.

Oasys software for LS-DYNA

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.

Visual-CRASH For DYNA

Visual-Crash for 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. Visual Viewer performs automated tasks and generates customized reports therefore increasing engineers productivity..

APTEK

The MMCD is a graphics-based and menu-driven program that interfaces with the LS-DYNA library of material models and the LS-OPT optimization code. The core of the MMCD is the driver, which calculates the stress-strain behavior of material models driven by combinations of strain increments and stress boundary conditions, i.e. pure shear stress, and combinations of uniaxial, biaxial, and triaxial compression and tension. MMCD input and output is accessed via pre- and post-processors; graphical user interfaces (GUIs) for easily selecting the material model parameters and load histories, and for plotting the output in both two (stress-strain curves) and three (yield surfaces) dimensions. The pre-processor, driver, and post-processor are combined into a web downloadable software package that operates seamlessly as a single code.

FEA Information Participants – **Company name takes you directly to Website**

OASYS Ltd: Markets engineering software products. Consulting engineers, planners and project managers working in all areas of the built environment.

JRI Solutions Ltd.: Specializing in Research & Consulting; System Consulting, Frontier Business, System Integration and Science Consulting.

HP: Leading provider of high performance computing solutions for CAE, including workstations, servers, blades and storage..

ANSYS Inc.: Develops, markets, supports and delivers collaborative analysis optimization software tools.

SGI: Silicon Graphics, Inc., is a leader in high-performance computing, visualization, and storage.

MSC.Software: Information technology software and services provider.. Products & services used to enhance & automate the product design/manufacturing process.

NEC: A history of more than 100 years of leadership/innovation in the core high-technology sectors of communications, computers/electronic components

INTEL: For more than three decades, Intel Corporation has developed technology enabling the computer and Internet revolution that has changed the world.

Engineering Technology Associates, Inc.: Provides engineering & IT services & has created the streamlined simulation software packages DYNAFORM and VPG

ESI Group: A software editor for the numerical simulation of prototype and manufacturing process engineering in applied mechanics.

Microsoft: For customers solving complex computational problems, Microsoft Windows Compute Cluster Server 2003 accelerates time-to-insight.

BETA CAE Systems S.A.: Specialized in the development of state of the art CAE pre- and post-processing software systems.

FEA Information Participants – **Company name takes you directly to Website**

APTEK: Among the software developed APTEK develops and licenses an interactive program for driving LS-DYNA material models - the Mixed Mode Constitutive Driver (MMCD).

PANASAS: High performing Parallel Storage for scalable Linux clusters. Delivering exceptional scaling in capacity and performance for High Performance Computing (HPC) organizations.

Intelligent Light: A a world leader in the development and delivery of software for computational fluid dynamics (CFD) users. We help the world's best engineering and research organizations maximize the productivity and impact of their CFD capabilities

LS-DYNA® Software Distributors - Alphabetical order by Country

Australia	<u>Leading Engineering Analysis Providers</u>
Canada	<u>Metal Forming Analysis Corporation</u>
China	<u>Arup</u>
France	<u>Alyotech</u>
Germany	<u>CAD-FEM</u>
Germany	<u>DynaMore</u>
India	<u>Oasys, Ltd.</u>
Italy	<u>DynaMore</u>
Japan	<u>The Japan Research Institute</u>
Japan	<u>ITOCHU Techno-Solutions Corporation</u>
Japan	<u>Fujitsu</u>
Korea	<u>Theme Engineering</u>
Netherlands	<u>Infinite Simulation Systems BV</u>
Russia	<u>State Unitary Enterprise - STRELA</u>
Sweden	<u>Engineering Research AB</u>
Taiwan	<u>Flotrend Corporation</u>
USA	<u>Engineering Technology Associates, Inc.</u>
USA	<u>Dynamax</u>
USA	<u>Livermore Software Technology Corp.</u>
UK	<u>ARUP</u>

Consulting and Engineering Services

Australia	<u>Leading Engineering Analysis Providers (LEAP)</u> Greg Horner info@leapaust.com.au 02 8966 7888
Canada	<u>Metal Forming Analysis Corp. -</u> (613) 547-5395 Chris Galbraith galb@mfac.com
Canada	<u>ROI Engineering Inc.</u> (416)249-1471
France	<u>Alyotech</u> 33 (0)1 30 67 23 44 Nima Edjtemai nima.edjtemai@alyotech.fr
Netherlands	<u>Infinite Simulation Systems BV</u> Jurgen Mathijssen j.mathijssen@infinite.nl
UK	<u>ARUP</u> - 44 (0) 121 213 3317 Brian Walker brian.walker@arup.com
UK	<u>GRM</u> +44 (0) 1926 889300 info@grm-consulting.co.uk
USA	KBEC L.C - (512) 363-2739 Khanh Bui kdbui@sbcglobal.net
USA	<u>SE&CS</u> - (707) 837-0559 Len Schwer len@schwer.net
USA	<u>Engineering Technology Associates, Inc:</u> (248) 729-3010
USA	<u>Predictive Engineering</u> - (1-800) 345-4671 George Laird george.laird@predictiveengineering.com
USA	<u>Friedman Research Corporation</u> (805) 683-1300
USA	<u>Structure Technology</u> (920).722.7060
USA	<u>CAE Associates, Inc</u> (203) 758-2914

Educational & Contributing Participants
Alphabetical Order By Country

China	Dr. Qing Zhou	Tsinghua University
India	Dr. Anindya Deb	Indian Institute of Science
Italy	Professor Gennaro Monacelli	Prode – Elasis & Univ. of Napoli, Federico II
Russia	Dr. Alexey I. Borovkov	St. Petersburg State Tech. University
USA	Dr. Ted Belytschko	Northwestern University
USA	Dr. David Benson	University of California – San Diego
USA	Dr. Bhavin V. Mehta	Ohio University
USA	Dr. Taylan Altan	The Ohio State U – ERC/NSM
USA	Dr. Ala Tabiei	University of Cincinnati
USA	Prof. John D. Reid	University of Nebraska

Informational Websites

The LSTC LS-DYNA Support site: www.dynasupport.com

LS-DYNA Support Site	FEA Informationwebsites
LS-DYNA Examples (more than 100 Examples)	LS-DYNA Conference Site
TopCrunch – Benchmarks	LS-DYNA Publications to Download On Line
LS-DYNA Publications	LSTC LS-PrePost Tutorials
CADFEM GmbH Portal	LS-OPT Support Site

LSTC Training Classes in California & Michigan

Remainder of 2008 classes

	California	Michigan
Advanced Impact		
Advanced Option		Dec 15-16
ALE/Eulerian & FSI		
Blast & Penetration		
Composite Materials		
Concrete & Geomaterial Modeling	Sept 25-26	
Contact		Sept 16-17
Heat Transfer & Thermal-Stress		
Implicit		
Intro to LS-DYNA [®] LS-PrePost [®] (no fee)	LS-PrePost Nov 10 Nov 11-14	LS-PrePost Sept 08 Sept 09-12 LS-PrePost Dec 08 Dec 09-12
Intro to LS-OPT [®]	Nov 18-21	
Material Modeling Using User Defined Options		
Mesh Free Methods (SPH & EFG)		

EVENTS & CLASS Announcements

2008

September 30 – October 1st

[7th GERMAN LS-DYNA FORUM](#)

BAMBERG, GERMANY

October 2

[The Nordic LS-DYNA Users' Forum](#)

Gothenburg, Sweden

October 7 - October 8

[JAPAN LS-DYNA Users Conference 2008](#)

JRI Solutions, Ltd

Tokyo, Japan

October 22nd - 24th

[ANSYS Conference & 26th CADFEM Users' Meeting](#)

Darmstadt, Germany

October 29-31

[NA Regional Summit - NAFEMS](#)

2020 Vision of Engineering Analysis and Simulation

Hampton, VA, USA

2009

May 14-15,

[7th European LS-DYNA Conference](#)

Salzburg, Austria

Class Announcement:

September 11th, 2008 afternoon from 2pm to 6pm

A half-day seminar to our customers to present "New Capabilities and Current Developments of LS-DYNA".

ALYOTECH TECHNOLOGIES - *société du groupe ALYOTECH FRANCE*

nima.edjtemai@alyotech.fr

LS-DYNA Dummy News

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The e-mail I send out will contain updated information. For those of you that are not familiar with my mailing, I will take this opportunity to share previous news with you.

For the link to the Power Point that appears in my updates please contact me at sarba@lstc.com

Hello LS-DYNA Dummy Users Worldwide:

There have been frequent inquiries about the status of the Fully Deformable Refined H-III Dummy Models that we are developing in collaboration with NCAC. In order to give everyone a Status Update, I have prepared a Power Point File for everyone to go through. In addition I have provided several "avi" files, to give you a feel for the calibration efforts. Some Generic Test Videos have been added, for the benefit of those who are not acquainted with the different Calibration Modes.

The following may be noted:

1) Almost all of the CAE work shown in the Power-Point has been done by NCAC. We, at LSTC, have merely advised them on certain things.

2) LSTC has planned Extensive Material Testing on all critical components. Materials are being procured for this purpose.

3) All calibration attempts shown in the Power Point and results displayed were obtained from NCAC. They are all preliminary, and likely to change once the material testing is complete.

4) The 50th% Model will be released shortly.

5) If the animation does not work within the Power-Point itself, please view them externally.

6) If the status changes significantly, I will let you all know.

Thanks to all those who are eagerly waiting for this model to be released and have repeatedly inquired about its progress. We hope to be able to give the world back something of high quality.

Sarba
LSTC, Troy Office, Michigan, USA