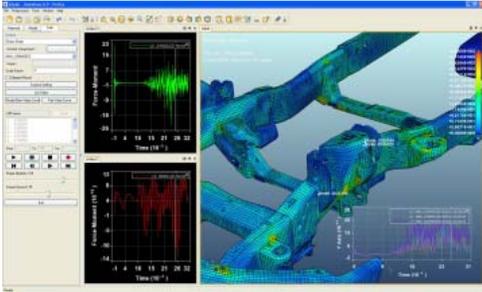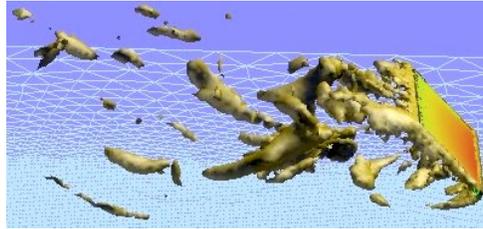# *FEA* Information http://www.feainformation.com

Engineering Journal and Website Resource

ETA's Inventium Suite

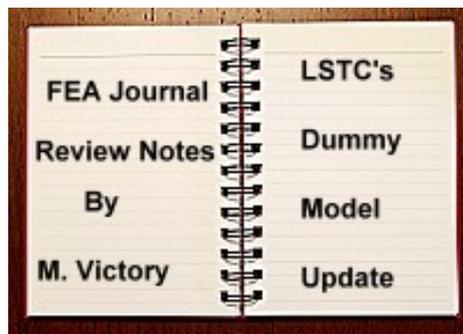
**Published paper
Facundo Del Pin**

**LSTC Dummy Models
In Development**

MCAD News On your Desktop

**Altix UV &
Cyclone Cloud Computing**

FEA Journal
Review Notes
By
M. Victory
LSTC's
Dummy
Model
Update

TABLE OF CONTENTS

Announcements

.
Rebuilding News Area:

Please send in any events, trade shows, training classes that you would like listed. I apologize that previous ones are not listed. Please resend and we will have them in the July issue.

Send them to Marsha mv@feainformation.com

Conference Reviews:

Our July issue will have a conference review of the 11th International LS-DYNA Users Conference and the 4th PhilonNet CAE Conference

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 -

My pony Sir Cody running through the pasture.
http://www.livermorehorses.com

OASYS Ltd:	JSOL Corporation:	HP:
http://www.oasys-software.com/dyna/en/	http://www.jsol.co.jp/english/cae	http://www.hp.com/
ETA:	**INTEL:**	**ESI Group:**
http://www.eta.com	http://www.intel.com	http://www.esi-group.com
BETA CAE Systems S.A.:	**LSTC:**	**SGI:**
http://www.beta-cae.com	http://www.lstc.com	http://www.sgi.com
MICROSOFT		
http://www.microsoft.com		
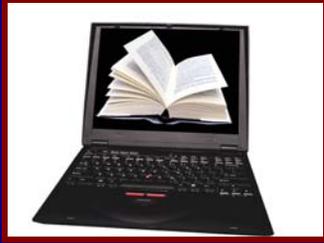
Conference Paper Showcase

Advances on
the Incompressible CFD Solver
in LS-DYNA®

The Complete Paper is available on the no fee Conference Publication CD (write to aleta@lstc.com) and is published on http://www.feapublications.com under link "featured"

Advances on the Incompressible CFD Solver in LS-DYNA®

Facundo Del Pin, Livermore Software Technology Corporation

Abstract

The present work will introduce some of the resent developments in the Incompressible CFD (ICFD) solver currently under development in LS-DYNA. The main feature of this solver is its ability to couple with any solid model to perform Fluid-Structure interaction (FSI) analysis. Highly non-linear behavior is supported by using automatic re-meshing strategies to maintain element quality within acceptable limits. In this work we will introduce the additional features for conjugate heat transfer, turbulence model, biphasic flow, some new feature in terms of mesh generation like boundary layer meshing and MPP.

Introduction

Incompressible flows cover a vast number of engineering problems ranging from car aerodynamics to arterial flows and parachute simulation. As a rule of thumb a flow may be considered incompressible if the Mach number presented in any part of the domain is not larger than 0.3. In LS-DYNA there are other two options to do CFD depending upon the kind of problem. The CESE solver is highly accurate CFD solver for compressible fluids. The ALE solver has support for both compressible and incompressible and it is a good option for highly transient problems.

Due to the requirement of industrial applications a number of new features have been added to the ICFD solver prior to the release version. They will be briefly described below.

Turbulence Models

The majority of the problems that involve real life applications fall in the category of high Reynolds number problems, where turbulent effects play an important role. Since full resolution of the problem is not possible due to resource limitations robust turbulent models are critical to provide realistic results. In ICFD turbulence is and will continue being a work in progress due to

the continued evolution of the field. At the moment three classical approaches have been incorporated namely K-e model, Smagorinsky LES model and a variational multiscale model which is still part of research work. The user will be able to modify some parameters of the models from the input deck to adjust it to some particular problem.
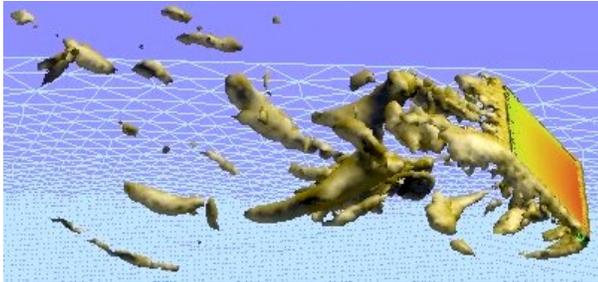
The image shows a flow past a flat plate in an angle on the left, simulating the wind effect on a solar panel.

The above is an FSI problem of a opening valve and the flow is shown and maximum aperture when the flow rate peaks. In both cases the turbulence was modeled using a LES approach.
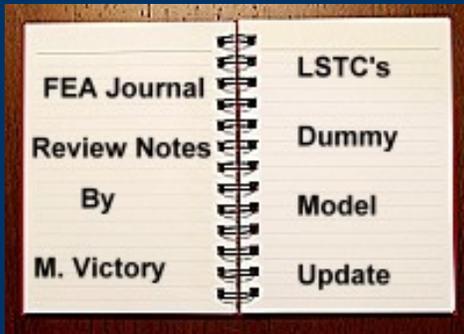
Dummy Model Update

June 28th, 2010

If you want to support LSTC's dummy model development, please contact atds@lstc.com

Available LSTC Dummy Models

- EuroSID 2re (Dynamore)
- EuroSID 2   (Dynamore)
- SID-IIs D
- Hybrid III 50th percentile (NCAC)
- Hybrid III Rigid-FE Adults
- Hybrid III 50th standing Rigid-FE
- USSID
- Free Motion Headform
- Pedestrian Legforms
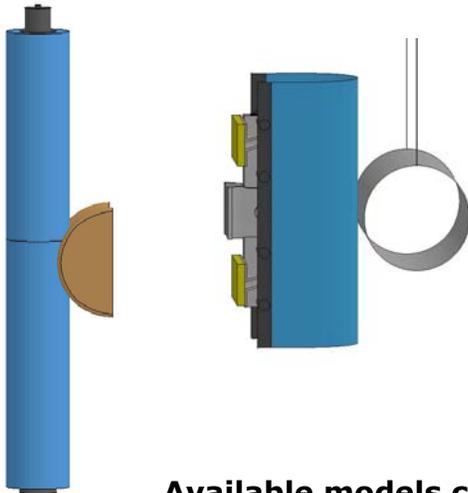
Available models can be downloaded from LSTC's ftp site:
Contact atds@lstc.com
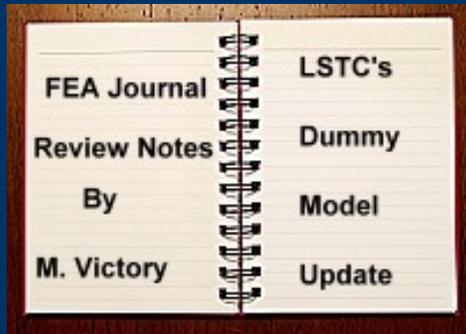
Dummy Models

No additional licensing costs.

The Dummy and Barrier Models provided by LSTC to licensed LS-DYNA users do not require separate licensing and are provided at no additional licensing costs.

The models are part of the LSTC suite of products distributed with your LS-DYNA license. Additionally included, at no additional license costs, are LS-PrePost, LS-OPT, LSOPT/Topology

The following Chart:

Models, Part, Nodes, Elements for the LSTC Dummy Models

| Model | Number of | | | | | | | |
| | Parts | Nodes | Elements | | | | | |
			Shell	Beam	Solid	Rigid	Deformable	Total
USSID	69	43868	12803	2712	41517	9914	47120	57034
Rigid-FE	96	4013	2054	1195	322	768	2810	3578
SID-IIs D	308	420816	7444	3823	307598	103050	215822	318872
ES-2	309	424433	20111	79	313363	121918	211647	333565
ES-2re	315	426201	20651	79	314138	122616	212264	334880
FMH	8	22467	2650	0	14462	8262	8850	17112
Legform	29	47402	2960	2	33664	21184	15445	36629
Upper Legform	22	50151	4902	0	29136	17488	16550	34038
Hybrid III 50th	363	228643	210439	242	186808	2338	395152	397490
Hybird III 95th Rigid-FE	116	7444	1636	3	2648	2453	1842	4295
Hybird III 50th Rigid-FE	116	7444	1636	3	2648	2453	1842	4295
Hybird III 5th Rigid-FE	116	7444	1636	3	2648	2453	1842	4295

FEA Journal Review Notes By M. Victory

LSTC's Dummy Model Update

Dummy Models
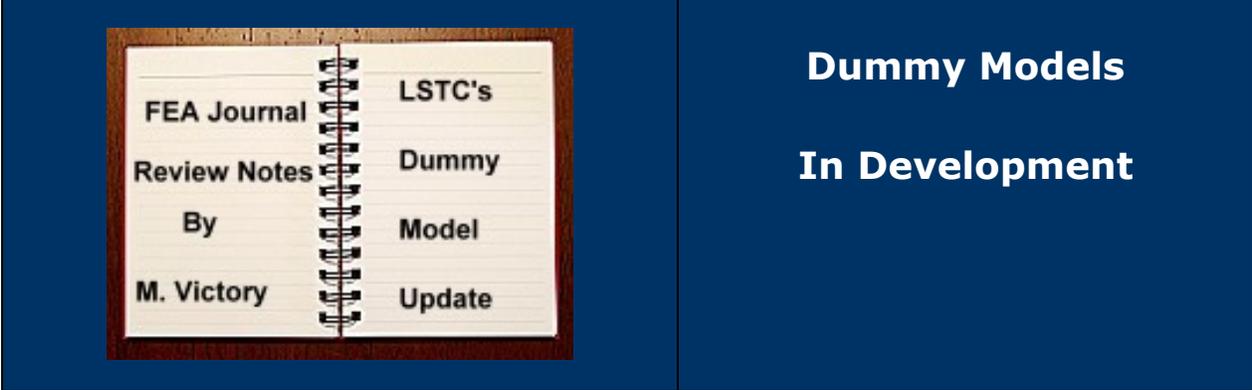
In Development

LSTC Dummy Models in Development

The models are continuously developed and supported and the models generated by LSTC use TrueGrid® parametric meshing.

The continued success of the models is attributable to the dedicated LSTC engineers, as well as The National Crash Analysis Center (NCAC), DYNAmore GmbH, and several automotive suppliers and OEMs who have been critical in supplying surface data, test and validation data and feedback related to the performance of their models, by LSTC and LS-DYNA Distributors. Again, if you would like to contribute to this dynamic worldwide team contact atds@lstc.com

In Development:
  Hybrid III
    3-year old

  Hybrid III
    6-year old

In Development:
  SID-IIs D
    Rigid-FE

  Hybrid III
    5th percentile
    female

In Development:
  Hybrid III
    95th percentile

  BioRID II
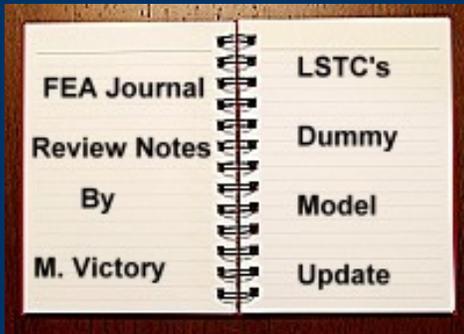
Dummy Models

BioRID II

Hybrid III 50th percentile

Feedback to LSTC on model performance is encouraged by LSTC. Companies may improve the LSTC models and keep their improvements proprietary. The company may redistribute their improved models to their suppliers and subsidiaries for LS-DYNA simulations.

BioRID II Update:

- Spine mesh complete
- Thorax flesh mesh complete

From LSTC's Hybrid III 50th percentile dummy model:

- Modified Hybrid III 50th head
- Modified Hybrid III 50th pelvis mesh
- Hybrid III 50th arms
- Hybrid III 50th legs
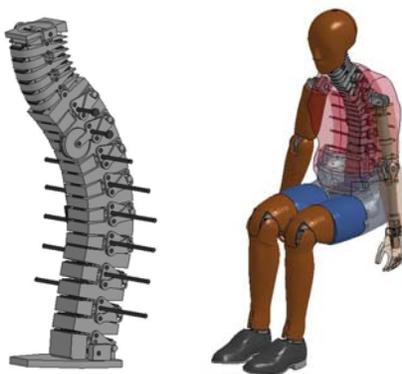
Certification test data has been received by LSTC and collaboration partners for development have been located and are proceeding with collaborative efforts.
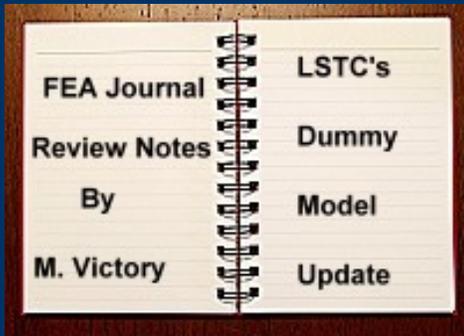
Release Dates

And

Future Dummy Models

As with all software development, the release dates are estimated and cannot be guaranteed due to various circumstances that may cause delays.

Estimated Release Dates

Hybrid III 3-year old
   Summer 2010

Hybrid III 6-year old
   Fall 2010

SID-IIs D Rigid-FE
   Summer 2010

Hybrid III 5th percentile female (NCAC)
   Summer 2010

Hybrid III 95th percentile (NCAC)
   Winter 2010

BioRID II (Dynamore)
   Fall/Winter 2010

Planned Dummy Models

- RigidFE versions of EuroSID 2 and EuroSID 2re
- Q-series child dummies
- Future Pedestrian Legform Impactors
- WorldSID

For questions, suggestions, or if you want to support our dummy model development, please contact us at atds@lstc.com .

Mellanox ConnectX IB QDR - Intel® Xeon® Six Core X5670
June 15, 2010

Vendor: Dell
 Submitter: HPC Advisory Council
  Computer: Dell PowerEdge M610
   Interconnect: Mellanox ConnectX IB QDR
    Processor: Intel® Xeon® Six Core X5670

#Nodes x #Processors per Node x #Cores Per Processor = Total #CPU	Time (Sec)	
14 x 2 x 6 = 168	1071	3 Vehicle Collision
8 x 2 x 6 = 96	1371	3 Vehicle Collision
4 x 2 x 6 = 48	2290	3 Vehicle Collision
2 x 2 x 6 = 24	3809	3 Vehicle Collision
1 x 2 x 6 = 12	7403	3 Vehicle Collision

SGI

Cloud Computing

&

Altix UV

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/

Press Release:

SGI Announces First Shipments of Complete Altix® UV 1000 Systems

Fastest, Most Scalable Shared Memory Supercomputer Supports up to 16TB of Global Shared Memory in a Single System Image

FREMONT, Calif., and Hamburg, Germany, International Supercomputing Conference 2010 —

June 1, 2010 — SGI (NASDAQ: SGI), a global leader in HPC and data center solutions, today announced it has shipped the first complete systems of Altix UV 1000, which are fully functional for use by its high performance computing (HPC) customers. Those among the first to benefit from Altix UV include leading scientific research institutions such as Pittsburgh Supercomputing Center (PSC), Oak Ridge National Laboratory, Leibniz Supercomputing Centre (LRZ), University of Cambridge and leading federal integrators that have selected Altix UV for its unprecedented performance, scalability and open architecture.

"These shipments of Altix UV are a major milestone for our customers and SGI," said Mark J. Barrenechea, SGI CEO. "The Altix UV platform is transformative to how customers can deploy the next generation of computing for the world's most demanding work loads, including traditional HPC, databases, I/O and cyber security."

Altix UV delivers unmatched scalability with up to 2,048 cores with architectural provisioning for up to 262,144 cores, and supports up to 16 terabytes (TB) of global shared memory in a single system image (SSI). Altix UV leverages NUMAlink® 5, SGI's high speed 15GB per second interconnect, and MPI Offload Engine (MOE) acceleration for superior performance. Altix UV is ideal for open source, custom and commercial HPC applications, and enterprise databases, as well as scalable I/O, data analytics and cyber security workloads.

"As one of the first users of Altix UV, we are excited to continue to work with SGI to explore the many new computational capabilities that are now available to the scientific community with its introduction," said Michael Levine, scientific director at Pittsburgh Supercomputing Center. "The Altix UV product line allows for unmatched scalability and performance for demanding, shared memory applications, and greatly expands the range of HPC computing capabilities."

Altix UV is built on open standard technologies from Intel® Xeon® to Linux®. The system's x86 architecture incorporates the latest Intel® Xeon® series 7500

processors, and supports out of the box Novell® SUSE® or Red Hat® Linux® operating systems.

"Supercomputing centers demand outstanding performance on a wide range of workloads. By shipping Altix UV systems, SGI has innovatively leveraged the scalability, memory capacity and efficient performance of the Intel® Xeon® 7500 processor series to satisfy a wide range of high performance computing application requirements," said Richard Dracott, general manager of high performance computing at Intel. "Intel has worked in close engineering cooperation with SGI to enable this, and we are excited to see this product in the market."

SGI's comprehensive management and performance software stack is available on all Altix UV systems for a consistent user experience.

For more information, please visit www.sgi.com/AltixUV .

D3View

**by
Suri Bala**

Suri Bala, owner of D3View Software, introduced its many features at the 11th International LS-DYNA conference

D3VIEW is a web based project originally designed to extract information about simulation quality and product metrics automatically saving time and effort.   It has evolved into full-fledged web 2.0 applications to manage simulation projects, tasks, people and all data from LS-DYNA.

Today, industries rely heavily on predictive simulation analysis to develop products based on the cost-benefit to performing computer simulations as opposed to building and testing physical prototypes. Although simulation analysis allows engineers to evaluate alternative designs, materials, or manufacturing processes, companies inherently face tremendous challenges related to the storage, retrieval, and most importantly, management and mining of simulation data.

Current PDM systems are not capable of handling the terabytes of data which is generated as a result of performing these simulations. D3VIEW's Simulation data and life-cycle management (SimDLM)

software provides a user friendly framework for storage, management, retrieval and visualization of performance-related data.

D3VIEW's breakthrough technologies help companies better understand their product performance and save time, reduce development costs, and improve time-to-market.

D3VIEW has been under development for over 4 years and grew out of a need for a tool to manage simulations and was specifically implemented for LS-DYNA in the initial phase of development.   There   are   three challenges we see with the growth of simulations performed today:

- The vast amount of data that is generated over time leading to storage, redundancy and retrieval complexities.
- The storage of simulation data is file-based which limits any data mining that is essential and the inability of this frequently leads to repetitive evaluations and simulation waste.

- Collaboration of simulation is still primitive with shared file systems and emails. D3VIEW solves all these problems by providing a powerful web front-end with mature data-visualization tools for LS-DYNA simulations with capabilities to create, manage and collaborate in a corporate environment. It also comes with standard functionalities such as user-authentication, role-based permission control, integration with load schedulers and a variety of other interfaces that is central to managing simulation data in a collaborative environment.

Visualizing User Generated Results into LS-OPT

To view results from manual what-if studies, LS-OPT provides a great way to import these results so we can take advantage of its data visualization package. The attached image, an excerpt from the LS-OPT Manual, shows how we can do this.

Full view link:

http://blog.d3view.com/wp-content/uploads/2010/06/lsopt_import_user_defined_results1-300x177.png

Article by Marsha Victory, FEA Information Inc.

MCADCafe.com's CaféNews

For those of you not familiar with CaféNews News I'd like to bring it to your attention. First, it is not associated with FEA Information Inc. but I have found it a valuable resource and you should look into subscribing and visiting their website.   CaféNews and the websites are owned and operated and copyright to Internet Business Systems, Inc.

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.

I have found them to be extremely technical with articles, blogs, commentaries by leading experts and professionals in the fields for industry news, emerging products, technical articles, and information

Subscribe - http://www10.mcadcafe.com/nl/newsletter_subscribe.php

Website

On their website, among the MCADCafe Blogs, you'll find from June 15th, 2010 by Natarajan Ramamoorthy, Managing Director EGS Computers India Private Limited: Will Sustainable Designs lead to profitability?

Excerpt: "…Of late CAD software developers have started looking at providing tools and technologies to assist designers in developing sustainable designs. This is definitely a positive development as a Corporate Social Responsibility initiative that could have far reaching consequences for the evolving globally connected societies. If the issues relating to waste generation, energy conservation and efficient resource utilization are addressed at the design stage, downstream issues involving environmental, social and economic considerations are more effectively manageable. But will this lead to profitability?..."

Among their many website features:

- Corporate Newsletters
  - Issues of FEA Information Inc.
- Events
- Conferences
- Jobs
- 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

DYNAFAB™
Nilakantan Composites

DYNAFAB™ is an automated preprocessor with a user friendly GUI used to create finite element models of 2D and 3D textile composites such as plain-weave fabrics and unidirectional composites. The input to DYNAFAB™ comprises of the geometrical dimensions describing the tow cross sectional shapes and centerline undulations, and the mesh densities along the tow width, thickness, and length directions. The output of DYNAFAB™ is a formatted LS-DYNA® keyword inputfile, ready to use in a simulation. With DYNAFAB™, all it takes is a few minutes to set up a high quality finite element mesh of a textile fabric, instead of taking hours or days when creating the same model manually using expensive third party software. DYNAFAB™ directly outputs the FE mesh, bypassing the need to create intermediate CAD models. The user can choose from thirteen different tow cross sectional shapes, use customized tow centerline trajectories, choose from two mesh schemes with the option of having coincident nodes at tow cross-overs, create multiple layers of woven fabrics, with many more exciting features. DYNAFAB™ allows realistic meshes to be set up that depict the actual fabric architecture obtained from micrograph images. DYNAFAB™ creates fabrics with

a homogenized yarn-level architecture, which implies every individual yarn is explicitly modeled, using only hexahedral (solid) elements. Each individual yarn can also be assigned to a different part identification number. DYNAFAB™ is currently built to run only on 32-bit and 64-bit Windows XP based computers.

DYNAFAB™ has now been commercially launched worldwide.

Please visit our website at *http://www.nicomposites.com* to find out more about our software. Both academic and commercial versions are available.

All users will first have to register to obtain the free demo version of the software before they can purchase the full version. We are very excited to be one of the first commercial software in the market to automatically generate high quality FE meshes of complicated fabric architectures. You will find lots of information on our website, such as basic information about DYNAFAB™, frequently asked questions, as well as a comprehensive downloadable user manual to walk you through all the steps from installation to usage to tutorials. We are always looking for feedback to

add new exciting features to our software. Please also visit our website's Image Gallery to view many more sample FE models created with DYNAFAB™.

The direct link is: http://www.nicomposites.com/index_files/gallery.htm.

Come try us out, we look forward to helping you create high quality fabric FE meshes faster than ever before. We are currently offering a special introductory six month license period offer for you to try out all of DYNAFAB™'s powerful features.
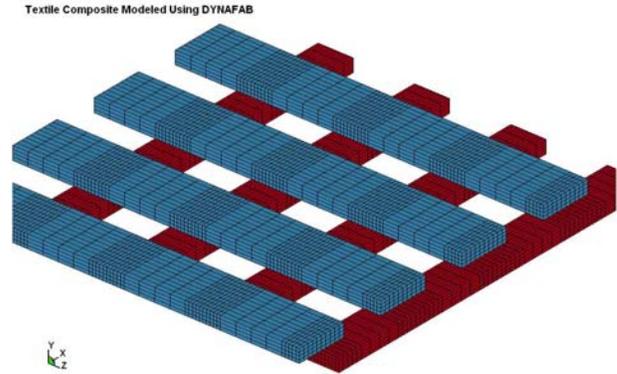

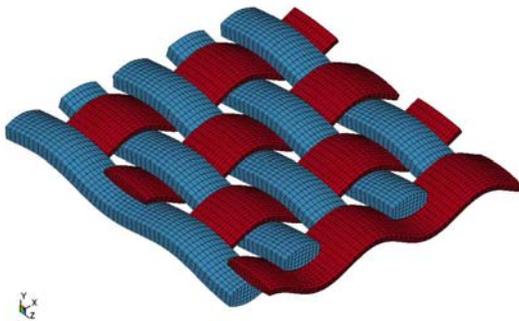Fig. 1. Sample FE model of a plain weave fabric

Gaurav Nilakantan
Founder, Nilakantan Composites
    E-mail: dynafab@nicomposites.com

Fig. 2. Sample FE model of a unidirectional composite with straight rectangular tows and coincident nodes at cross-overs

Fig. 3. Sample screenshot of DYNAFAB™ (DYNAFAB is not affiliated with LSTC. LS-DYNA® and LSPrePost® are registered trademarks of LSTC)

ETA INTRODUCES PRESYS ADVANCED FINITE ELEMENT MODELING ENVIRONMENT

By: Laura Abert, Marketing Manager, Engineering Technology Associates

First Tool in Inventium Suite — CAE Solution Enables "Concept to Product"

Engineering Technology Associates, Inc. (ETA) announces the introduction of its new enterprise product development software solution, the Inventium Suite. The first tool to be released in the Inventium Suite is PreSys, the advanced pre- and post- processor core finite element (FE) modeling toolset. Other Inventium tools will be released in the near future.

PreSys is the successor to ETA's VPG/PrePost and FEMB products and was released on June 7th, 2010. PreSys draws on the experience of these legacy products, and combines this knowledge with 150 new or improved features. This product is completely aligned with the user-friendly Inventium architecture, and promises to immediately place PreSys in a top position in the FE pre/post-processor market.
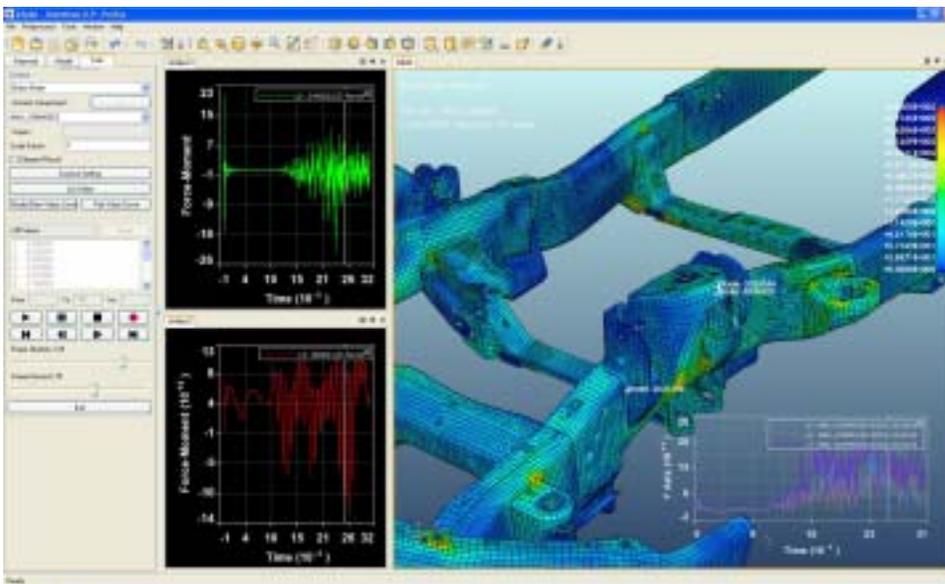
The PreSys toolset features an easy to use interface with drop-down menus and toolbars, increased graphics speed, and detailed graphics capabilities. Other notable features include the ability to open and operate on multiple models, and review simulation results along with model data and a scripting interface.

This allows the user to capture, replay and modify processes, and interact with third party applications.

These capabilities, combined with powerful, robust and accurate modelling functions, promise to change the way that engineers develop products and will unlock optimization software's potential for use in solving everyday problems.

The Inventium Suite includes some progressive new tools, while retaining ETA's legacy software products, VPG and DYNAFORM. Inventium's unified and streamlined product architecture will provide users access to all of the suite's software tools. Inventium products offer a high performance modeling and post-processing system, while providing a robust path for the integration of new tools and third party applications.

The Inventium architecture was developed with flexibility and configurability in mind. It allows the user to change the way their software appears and behaves. New menus or toolbars may be created to meet the user's specific needs, while pre-configured menus can be modified as desired. For example, users can simplify the interface by deactivating all user toolbars and menus for functions not in use. Similarly, the user can create a customized toolbar containing 'favorites,' or frequently accessed functions.

About Engineering Technology Associates, Inc. (ETA)

Engineering Technology Associates, Inc. (ETA) was established in 1983 by advanced product development engineers working as structural analysts for the world's largest automotive manufacturers. ETA's expertise in the areas of product design and development, vehicle durability, NVH, metal forming, crashworthiness and occupant safety have provided an intimate knowledge of the challenges and needs of the product development engineer. Proactive in the creation and implementation of new analysis methods and software, ETA is the developer of the Inventium Suite, DYNAFORM and VPG. ETA is a subsidiary of Cranes Software International Limited (CSIL).

For further information about ETA and its products, please visit to http://www.eta.com or call (248) 729-3010.

Attention publishers: Please send all sales leads to Laura Abert, Marketing Manager, Engineering Technology Associates, Inc. 1133 E. Maple Rd, Ste #200, Troy, MI 48083 Phone: (315) 299-4314 Email: laura@eta.com

EASi product Group, has organized 2010 open meeting in Bangalore, India on 1st July 2010. This is the first of two events that will take place in Bangalore and Pune respectively. The venue at Bangalore is The Zuri Whitefield, Bangalore & at Pune, it will be held at Le Meridian on July 06th 2010. The event aims to introduce the latest developments in ANSA and µETA Pre- and Post-Processing suite and to showcase its application in various CAE disciplines.

There is no participation fee for this event. However, as there are limited seats available, we would appreciate if you register by email to support@easi.com , before June 28th 2010.

The attire will be business casual. The language of the event will be English.

We look forward for an enthusiastic participation.

BANGALORE - Venue

- Hotel: Zuri, Whitefield, Bangalore
- Date: 01 July 2010
- Time: 08.30 AM To 17.00 Hrs IST
- Contact: Trivikram Nanjangud
- Tel: 91-80-30705412 /13 / 14,
- Mob: +91‐9845092852

PUNE - Venue

- Hotel: Le Meridien, Pune
- Date: 06 July 2010
- Time: 08.30 AM To 17.00 Hrs IST
- Contact: Trivikram Nanjangud
- Tel: 91-80-30705412 /13 / 14,
- Mob: +91‐9845092852

AGENDA

08:30-09:00	*Registration*
09:00-09:15	**Welcome Speech** *by Vasantha Sural, Vice President-Technologies, EASi*
09:15-09:30	**Company Profile & Products Roadmap** *by Dr. Sam. Saltiel, Chief Communications Officer, BETA CAE Systems SA*
09:30-10:00	**Key Note address *by Ravi Desai*,** *Director-Vehicle Integration, General Motors Technical Center India Pvt Ltd*
10:00-10:15	**Value additions in Customer Services** *by Ramesh Venkatesan, Groups Head-Products, EASi*
10:15-11:15	**ANSA v13.x Latest Software** *Features by Konstantinos Kiouptsidis, Manager, Customers Service BETA CAE Systems SA*
11:15-11:30	*Coffee break*
11:30-12:00	**Productivity benefits of ANSA in CFD analysis of an Electric Car** *by Mr.Subodh Singh, Project Leader- Semcon India Pvt. Ltd.*
12:00-13:00	**μETA v6.x Latest Software Features** *by Stefanos Chatziangelidis, Supervisor, Customers Service, BETA CAE Systems SA*
13:00-14:00	*Lunch*
14:00-14:30	**Model building for Crash and Safety applications using ANSA** *by Wajid Mohammed, Satyam Venture Engg. Services*
14:30-15:00	**Modeling Gearbox housing for FEM-analysis of Stress & Deflection characteristics** *-G. Camp, VOLKSWAGEN AG, N. Drivakos, BETA CAE Systems SA- presented by Konstantinos Kiouptsidis, Manager, Customers Service, BETA CAE Systems SA*
15:00-15:30	**Optimization using ANSA and LS-OPT** *by Kantharaju.S, Technical Manager-EASi Engineering Services*
15:30-15:45	*Coffee break*
15:45-16:15	**ANSA & μETA for Crash & Safety Simulation** *by Stefanos Chatziangelidis, Supervisor, Customers Service, BETA CAE Systems SA*
16:15-16:45	**Open Discussions - Questions & Answers Session**
16:45-17:00	**Vote of thanks** *by Vasantha Sural, Vice President-Technologies, EASi*
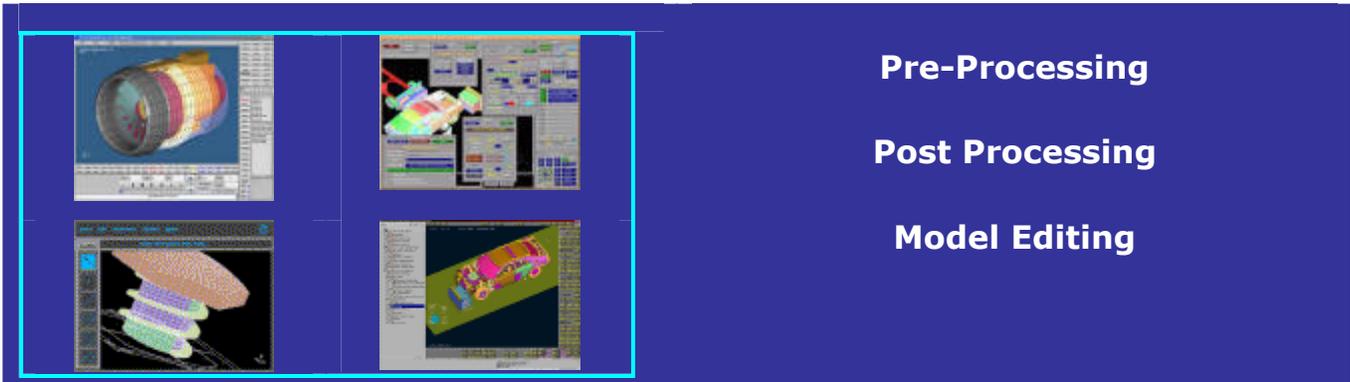
Pre-Processing

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.

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

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\

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

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

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.

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

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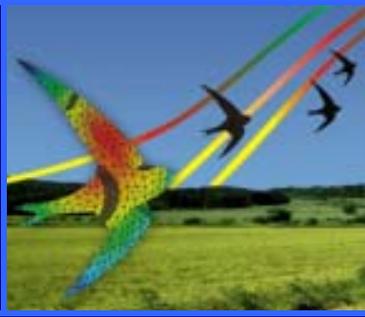
2010 EnginSoft International Conference
CAE Technologies for Industry
and
ANSYS Italian Conference

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

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

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

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
NEC SX6	Super-UX		
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
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]

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