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FEA Information Engineering Solutions

Volume 3, Issue 01, January 2014

Mercedes-Benz W 201 Model series, crash test

Ford Fusion Hybrid automated research vehicle

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

FEA Information Inc. Publishes:

FEA Information Engineering Solutions

FEA Information Engineering Journal

FEA Information China Engineering Solutions

FEA Information Engineering Solutions:

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

FEA Information China Engineering Solutions

The first edition was published February 2012. It is published in Simplified and Traditional Chinese in pdf format. Published : February, April, June, August, October, December. The China Solutions is archived on the website FEA Publications. www.feapublications.com
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We start 2014 by welcoming a new participant:

www.lsdyna-online.com

Online training, or at the customer site, by Professor Al Tabiei.

Opportunities:

Glasnevin Publishing

Seeking authors of Finite Element Books

Wake Forest Job Posting

Research Engineer, Full Tim

LSTC is gearing up for their 13th US & International Conference with 140+presentations. Registration will be open February 01, 2014 www.ls-dynaconferences.com

Sincerely, Marsha Victory, Trent Eggleston - FEA Information Inc. USA edition

Our Night Ferals all came to eat and it seemed they all looked at me with the same expression:

"Please take that camera away from her!"

We are missing Mr. Skunk – hopefully he will come this month to eat

FEA Information Engineering Journal

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www.LSDYNA-ONLINE.com using GO TO MEETING.

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Courses can be presented at the customer location. We offer several preset courses similar to the ones on line and/or we can custom design courses for your engineering needs.

For courses at your location preset, or special customization contact:
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Course Titles

- Material Models in LS-DYNA (new course)
- Intro LS-DYNALS-DYNA
- ImplicitFluid Structure Interaction in LS-DYNA
- Advance Fluid Structure Interaction in LS-DYNA
- Blast using LS-DYNA
- Penetration using LS-DYNA
- Composite Materials in LS-DYNA
- Contact in LS-DYNALS-DYNA
- DummiesAdvance Impact Simulations Using LS-DYNA
- Material Modeling Using User Defined Material
- Intro LS-PREPOST
- Advance LS-PREPOST
- Multi-Physics LS-DYNA

Getting Started with LS-DYNA

This course will allow first time LS-DYNA users to get started with minimal effort. The most important elements to start using LS-DYNA successfully will be presented in the 8 hours. There is an optional one day (8 hours) of workshop at an additional cost. The workshop online course is not necessary to get started with LS-DYNA. However, it is recommended for users.

Getting Started with LS-DYNA Implicit

This course will allow LS-DYNA users to get started with the IMPLICIT solver with minimal effort. The most important elements to start using LS-DYNA Implicit successfully will be presented in the 8 hours. There is an optional one day (8 hours) of workshop at an additional cost. The workshop online course is not necessary to get started with LS-DYNA Implicit. However, it is recommended for users

Getting Started with LS-DYNA FSI

This course will allow LS-DYNA users to get started on using LSDYNA for Fluid Structure Interaction (FSI) problems. The most important elements to start using LS-DYNA for such problems will be presented in the 8 hours. There is an optional one day (8 hours) of workshop at an additional cost. The workshop online course is not necessary to get started with FSI LS-DYNA. However, it is recommended for users.

Getting Started with LS-DYNA Blast and Penetration

This course will allow LS-DYNA users to get started on blast and penetration problems. The most important elements to start using LS-DYNA for such problems will be presented in the 8 hours. There is an optional one day (8 hours) of workshop at an additional cost. The workshop online course is not necessary to get started with LS-DYNA blast and penetration. However, it is recommended for users.

NEW COURSE

Material Models in LS-DYNA

- Chapter-0 Outline
- Chapter-1 Introduction Continuum Mechanics
- Chapter-2 Material Constitutive Equations
- Chapter-3 Introduction to Plasticity
- Chapter-4 LS-DYNA Material Library
- Chapter-5 Visco-Elasticity
    - Selected viscos models
    - parameter identification
    - Creep and relaxation models

- Chapter-6 Plasticity, Polymers, and Visco-Plasticity
  - Selected plasticity models using some yield criterion
  - Anisotropic plasticity models
  - Modeling plastics
- Chapter-7 Foams and Honeycomb
  - Classification of foams
  - Selected foam models
  - Similarities and differences of the models
  - Parameter identification
- Chapter-8 Rubber
  - Classification of rubber
  - Selected rubber models
  - Similarities and differences of the models
- Chapter-9 Fiber Reinforced Composites
  - Classification of composites
  - Selected composite models
  - Similarities and differences of the models
  - Parameter identification
- Chapter-10 Geotech Materials
  - Discussion of the most popular materials for soil
  - Discussion of the most popular materials for concrete
- Chapter-11 Material Failure
  - Failure criterion, mesh dependence, non-local formulations
  - Element failure and contact
- Chapter-12 Strain Rate Models & Effect
  - Strain rate models
  - Material characterization
  - Rate effect examples
- Chapter-13 References & Other Courses

Dr. Al Tabiei has been a consultant on the use of LS-DYNA for more than 20 years to more than 60 companies.

He has been teaching different courses on LS-DYNA for more than 18 years nationally and internationally.

His primary work focus is in the area of multi-physics simulations, crash simulation, impact simulation, and material model development for isotropic and composite materials..

He also does code development for LSTC and teaches courses at LSTC headquarters in CA and in the MI office as well as the LS-DYNA Conferences.

Automated Fusion Hybrid Research Vehicle

Taking the next step in its Blueprint for Mobility, Ford today – in conjunction with the University of Michigan and State Farm® – revealed a Ford Fusion Hybrid automated research vehicle that will be used to make progress on future automated driving and other advanced technologies.

Jan 22, 2014 | Washington, D.C.
Ford Teams Up with MIT and Stanford to Advance Automated Driving Research

Ford kicks off new automated driving research projects with Massachusetts Institute of Technology and Stanford University. The MIT research focuses on scenario planning to predict actions of other vehicles and pedestrians, while Stanford is exploring how a vehicle might maneuver to allow its sensors to peek around obstructions. Partnering with academic institutions helps advance Ford's Blueprint for Mobility, which envisions a future of autonomous functionality and advanced technologies after 2025

Building on the automated Ford Fusion Hybrid research vehicle unveiled last month, Ford is announcing new projects with Massachusetts Institute of Technology and Stanford University to research and develop solutions to some of the technical challenges surrounding automated driving.

Automated driving is a key component of Ford's Blueprint for Mobility, which outlines what transportation will look like in 2025 and beyond, along with the technologies, business models and partnerships needed to get there. With its automated Fusion Hybrid research vehicle, Ford is exploring potential solutions for the longer-term societal, legislative and technological issues posed by a future of fully automated driving.

"To deliver on our vision for the future of mobility, we need to work with many new partners across the public and private sectors, and we need to start today," said Paul Mascarenas, chief technical officer and Vice President, Ford research and innovation.

"Working with university partners like MIT and Stanford enables us to address some of the longer-term challenges surrounding automated driving while exploring more near-term solutions for delivering an even safer and more efficient driving experience."

Furthering automated driving research

Ford's automated Fusion Hybrid research vehicle is unique in that it first uses the same technology already in Ford vehicles in dealer showrooms, then adds four LiDAR sensors to generate a real-time 3D map of the vehicle's surrounding environment.

While the vehicle can sense objects around it using the LiDAR sensors, Ford's research with MIT uses advanced algorithms to help the vehicle learn to predict where moving vehicles and pedestrians could be in the future. This scenario planning provides the vehicle with a better sense of the surrounding risks, enabling it to plan a path that will safely avoid pedestrians, vehicles and other moving objects.

Working with Stanford, Ford is exploring how the sensors could see around obstacles. Typically, when a driver's view is blocked by an obstacle like a big truck, the driver will maneuver within the lane to take a peek around it and see what is ahead. Similarly, this research would enable the sensors to "take a peek ahead" and make evasive maneuvers if needed. For example, if the truck ahead slammed on its brakes, the vehicle would know if the area around it is clear to safely change lanes.

"Our goal is to provide the vehicle with common sense," said Greg Stevens, global manager for driver assistance and active safety, Ford research and innovation. "Drivers are good at using the cues around them to predict what will happen next, and they know that what you can't see is often as important as what you can see. Our goal in working with MIT and Stanford is to bring a similar type of intuition to the vehicle."

About Ford Motor Company: Ford Motor Company, a global automotive industry leader based in Dearborn, Mich., manufactures or distributes automobiles across six continents. With about 180,000 employees and 65 plants worldwide, the company's automotive brands include Ford and Lincoln. The company provides financial services through Ford Motor Credit Company. For more information regarding Ford and its products worldwide, please visit corporate.ford.com

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Len Schwer

http://www.duboisschwertraining.com/future

Paul Du Bois and I are pleased to announce or 2014 schedule of classes to be presented in Troy Michigan and hosted by our ETA partners (www.eta.com)

A registration form with the class price list is available on our web page.
http://www.duboisschwertraining.com/classes/Registration%20Details%20Troy%20MI

Completed registration forms are required prior to 13 May 2014 to establish class size. Class size minimum is four attendees. Once a class is confirmed, an invoice with payment instructions will be emailed.

2014 Schedule of Classes

ETA, Troy, Michigan

Hosted by our ETA Partners www.eta.com

27-28 May 2014 - Concrete and Geomaterial Modeling with LS-DYNA
29-30 May 2014 - Methods and Modeling Techniques: Prerequsite for Blast and Penetration
2-3 June 2014 - Penetration Modeling with LS-DYNA
4-5 June 2014 - Blast Modeling with LS-DYNA
6 June 2014 - Explosives Modeling for Engineers

DYNAmore, Stuttgart, Germany

9-10 October 2014 - Concrete and Geomaterial Modeling (Len)
13-14 October 2014 - Blast Modeling with LS-DYNA
15-16 October 2014 - Penetration Modeling with LS-DYNA

ARUP, Solihull, United Kingdom

20-21 October 2014 - Concrete and Geomaterial Modeling (Len)
20-21 October 2014 - Polymer Modeling (Paul)
22 October 2014 - Explosives Modeling for Engineers

JOB POSTING

Biomedical Engineering & Computational Modeling

Center for Injury Biomechanics at Wake Forest University

Research Engineer, Full-time

This position is focused on computational modeling and is currently available in the Center for Injury Biomechanics, in the Department of Biomedical Engineering at Wake Forest University School of Medicine. We are searching for an outstanding individual to join our research and development group focused on Finite Element Modeling, Computer Aided Design, and other initiatives related to injury prediction and prevention.

In the course of performing the duties of this position we anticipate that the individual will:
1) apply knowledge of state-of-the-art dynamic finite element modeling techniques, including but not limited to: Parametric mesh development, optimization and improvement of existing finite element meshes, material model optimization, contact algorithm selection, and geometry development to support the core mission of the center's research projects.
2) Have the opportunity to participate in a number of ongoing interdisciplinary research projects related to injury biomechanics underway in our center,
3) develop excellent written and oral presentation skills,
4) develop a valuable peer network through collaboration with industry and university partners and
5) encourage the individual's own professional growth through attending pertinent training courses as necessary.

The injury biomechanics group at Wake Forest University is closely partnered with Virginia Tech's Center for Injury Biomechanics. This joint center is a leading research institution in the field, offering state-of-the-art facilities for conducting all aspects of injury biomechanics research.

A unique attribute of our center at Wake Forest is that we are under the auspices of the Wake Forest University School of Medicine, facilitating collaboration with clinical faculty.

The ideal candidate should have the following attributes.

Required:

~ BS in Engineering, MS will be considered. A degree in a closely related field with appropriate computational modeling experience will also be considered.

~ 3+ years of experience (preferred) in computational methods and simulation, including structural finite element analysis (dynamic, non-linear are pluses)

~ Experience with commercial volume meshing software (Hypermesh, Truegrid, IA-FEMesh, etc.)

~Strong engineering fundamentals

~Works well within a team setting, excellent verbal and technical writing skills

How To Apply

1. **Go to** http://www.wakehealth.edu/Job-Openings/
2. **Enter the job code 5348** in the "search by keywords" box
3. Click on the post that says

"Research Engineer | Biomedical Engineering"

4. This will show the full job description and have a button that says "Apply Now"
5. You will need to register on the site before submitting your application if this is the first time you have applied to a job with Wake Forest Baptist Health.

Click the link that says "Click here to register".

Equal Employment Opportunity

Contact:

Scott Gayzik, Assistant Professor
Biomedical Engineering,
Wake Forest University School of Medicine,
sayzik@wakehealth.edu

Mercedes-Benz W 201
Model series, crash test

The significance of the W 201: The compact vehicle successfully opened up a new market segment for Mercedes-Benz

The decision makers at Daimler-Benz AG thought long and hard about introducing a compact model series below the executive segment in the 1920s and 1930s and then from the early 1950s onwards. Several projects were conceived, some of them very advanced, but for one reason or another they never came to fruition.

In the early 1970s, the idea of a compact Mercedes-Benz then got an unexpected boost: the Clean Air Act introduced under US President Jimmy Carter specified the fleet fuel consumption for the vehicles of all manufacturers on sale in the USA. This was know as the "Corporate Average Fuel Economy" (CAFE). For the year 1985, it was 27.5 miles per gallon (8.3 litres per 100 kilometres). This was a challenge for many car brands, including Mercedes-Benz, since the model range available in the USA, long one of the Stuttgart brand's key export markets, was in the luxury market segment and at the high end of the power spectrum, with a resulting fleet fuel consumption above the specified limit. So the impetus to develop a new, more compact and therefore more fuel efficient model series to reduce fuel consumption came from an export market.

In January 1974 Head of Development Prof. Hans Scherenberg defined the key requirements for such a Mercedes-Benz. This is how he phrased it: "It's clear that this must be a typical Mercedes-Benz. So we are not able to make too many compromises in terms of refinement, safety and the associated Mercedes-Benz characteristics."

The first specifications book he signed for model series 201 specified the following as early as 4 February 1974: “The aim with this product is not to penetrate the medium-size-category markets, which have been occupied by brands such as Opel and Ford for many years. Moreover, the 201 model is to be deliberately distinct from these due to the trademark characteristics customers expect in terms of quality, safety and refinement.” Prof. Werner Breitschwerdt, who succeeded Scherenberg as Development Chief in 1977, didn’t feel the need to change any of this.

This meant that the brief was almost akin to squaring the circle: traditional Mercedes-Benz brand values such as comfort, safety, longevity and reliability, which had previously been implemented to perfection in larger vehicles across all generations, now had to be transferred to a compact vehicle without exception. This major engineering feat was a massive challenge. So no wonder the expectation among journalists was huge when the new compact vehicles in model series 201 were unveiled to the world’s press in Seville, Spain in November 1982. And they were not disappointed.

The first surprise was the design. A vehicle that was unique yet unmistakably a Mercedes-Benz was produced under the guidance of Bruno Sacco. Furthermore, the compact Mercedes-Benz had a low drag coefficient (Cd value) of 0.33 and a sophisticated, uncomplicated design with an undeniably youthful and dynamic elegance.

Active and passive safety have been key quality aspects at Mercedes-Benz for generations. And model series 201 set the standards in this respect, too, when compared with both Mercedes-Benz models and competitor models. The active safety system, in which a key role was played by the multi-link independent rear suspension with five links arranged at various levels, was remarked upon in issue 1/1983 of German car magazine “auto motor und sport” with reference to the 190 E model: “When configuring the suspension, the Daimler-Benz engineers focussed on conveying the highest possible degree of driving safety without losing any of the pleasure associated with the car’s dynamic aspects. The 190 E thus had the best cornering ability of any Mercedes-Benz, with largely neutral understeer/oversteer characteristics, very high possible, almost fully absent load changes – and it offered immense driving pleasure. [...] The effortlessness with which the 190 E takes bends is nothing short of astonishing. For the normal 190 E driver, the reserves offered by the suspension can have a calming effect.”

One of the major factors behind this was the multi-link independent rear suspension conceived by Dr Kurt Enke and, following his early death, designed by Manfred von der Ohe. It became the standard for all subsequent rear axles designed by Mercedes-Benz. But outside of the company, too, it became the blueprint for many other rear axle designs over the years. Model series 201, a relatively small Mercedes-Benz vehicle, therefore continued the tradition of being a trendsetter for innovative design ideas.

Model series 201 was just as uncompromising when it came to passive safety. This made it the safest vehicle in its class and put it on a par with the S-Class of the time, model series 126. Even in 1991, a model series 201 vehicle displayed exemplary passive safety when compared to far newer competitors in an offset crash test.

Making model series 201 a typical Mercedes-Benz in all respects without compromising on the key brand values - an objective that had initially seemed like a utopian dream - therefore became a reality. This not only paved the way to success for all the “190” model variants, it also successfully opened up the smaller vehicle segment for Mercedes-Benz. From May 1993 onwards, the brand continued the world-wide success story with model series 202, the first to bear the C-Class name. Having started out as the “Baby-Benz”, the Mercedes-Benz C-Class is today one of the most popular vehicles in the premium segment.

Dr. Helen McGrath

Seeking Authors of Finite Element Books

A publishing house based in Dublin, Ireland.

Publisher of
"Practical Stress Analysis with Finite Elements"
by Dr. B. Mac Donald from Dublin City University

The company was established in 2007 with the aim of producing high quality and innovative books for the academic and technical markets. Our first book was "Practical Stress Analysis with Finite Elements" by Dr. B. Mac Donald from Dublin City University. This book was aimed at newcomers to finite element analysis and focused on addressing the concerns and queries of analyst attempting their first FEA. The philosophy of this book was to take the learner gently through their first few FE analyses with confidence and to gently instil the under lying mathematical theory of FEA in as practical a from as possible. This book has proved to be very successful and continues to sell strongly every month. Due to great demand, a second edition of the book was produced in 2011.

Technical Engineering Focus:

Based on our experience with this book we have recently focused our efforts more on the technical/engineering side of our business (as opposed to the general academic). We currently have a number of technical books in pre-publishing production which we expect to release later this year.

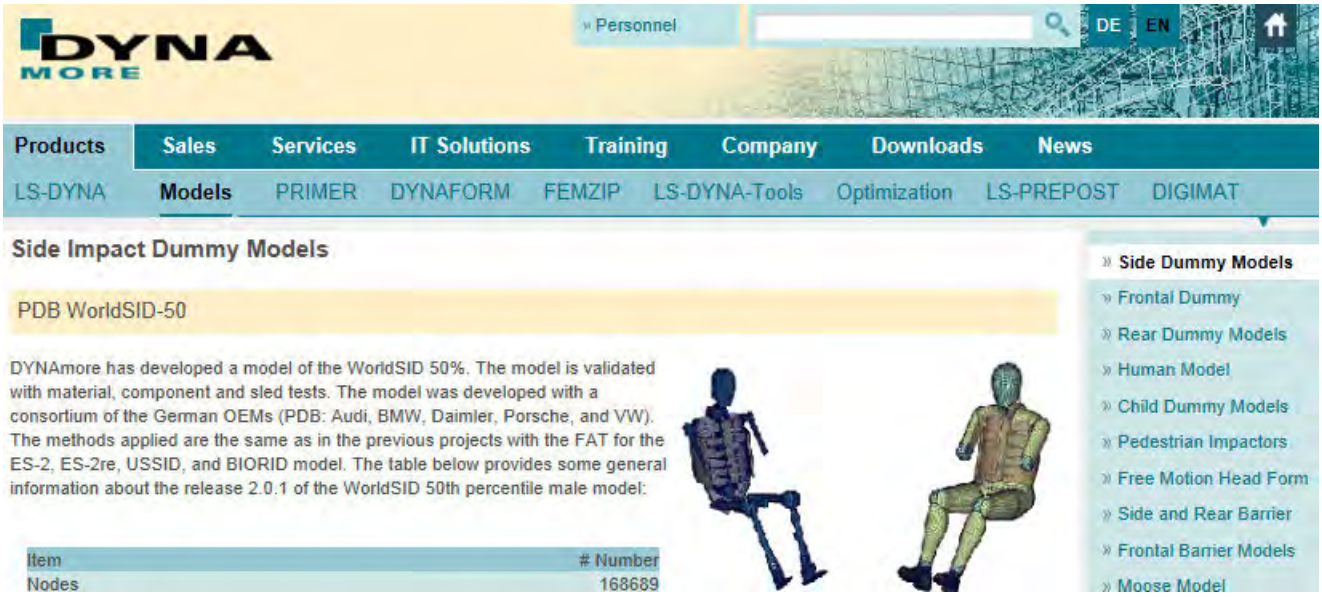
Seeking Authors:

We are now actively searching for authors who may have written, or intend to write, books in the field of Finite Element Analysis. Our experience of publishing books in this area has shown that there is great demand in this area, particularly for advanced topics. Our business model allows us to publish books that may have a limited or specialized field so we are open to all proposals.

If you would like to discuss working with us on publishing your book on FEA, or a related area, then please contact us using the details below.

Contact: Dr. Helen McGrath
Director, Glasnevin Publishing
Email: info@glasnevinpublishing.com

http://www.dynamore.de/en/products/models/side



PDB WorldSID-50

DYNAmore has developed a model of the WorldSID 50%. The model is validated with material, component and sled tests. The model was developed with a consortium of the German OEMs (PDB: Audi, BMW, Daimler, Porsche, and VW). The methods applied are the same as in the previous projects with the FAT for the ES-2, ES-2re, USSID, and BIORID model. The table below provides some general information about the release 2.0.1 of the WorldSID 50th percentile male model:

FAT ES-2 and ES-2re Dummy Model

The dummy is used in US-NCAP- and Euro-NCAP side impact assessment, the ES-2re will be used in the new FMVSS214. The dummy is also used for the legal authorization in Europe, Japan and the United States. The table below provides some general information about the release v5.01 of FAT ES-2 model. The version v5.01 of the ES-2re, a variation of the ES-2 for the authorization and the evaluation in the United States, is also available with a comparable number of entities.

FTSS SID-IIs Model

The dummy represents a small female body and is used in an IIHS side impact load case, in the FMVSS214 and the US-NCAP load cases. The table below provides some general information about the release 3.1a of the SID-IIs model. A version for Build Level C (BLC) and Level D (BLD) is available.

FAT EuroSID Model

The dummy is used in the legal authorization in South Korea, Australia, China and India. The table below provides some general information about the actual release 3.6 of the model.

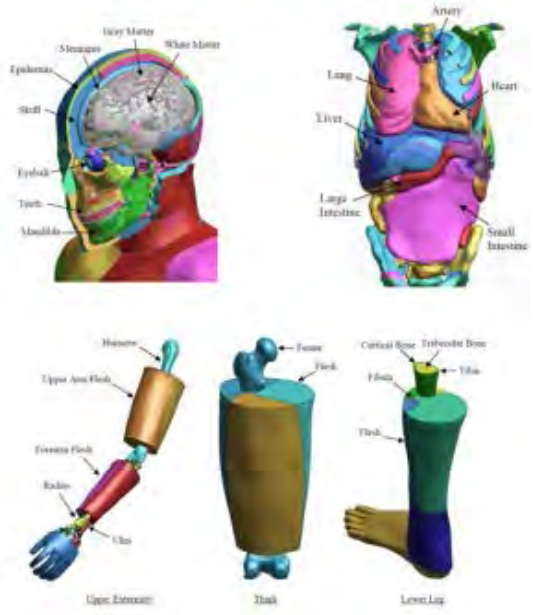
FAT US-SID and SIDHIII Model

The latest model of the FAT US-SID is version v5.0. The dummy is used in the subsiding FMVSS214 regulation and in the SINCAP load case. The modified version, the SIDHIII v5.1 is used in lateral impact to a pole. For both dummies a detailed model is available. The table below provides some general information about the actual multiple validated model of the US-SID.

Total Human Model for Safety - THUMS
LSTC is the US distributor for THUMS

About

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

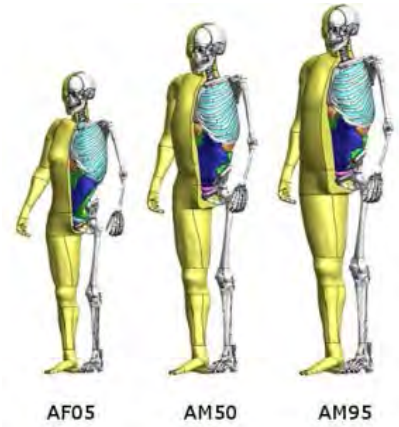


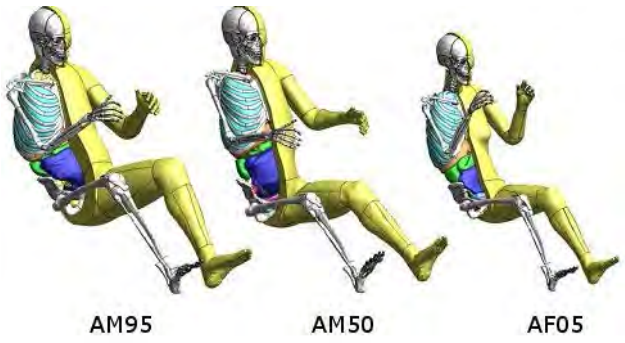
THUMS is limited to civilian use and may under no circumstances be used in military applications.

Model Details: Each of the different sized models is available as sitting model to represent vehicle occupants and as standing model to represent pedestrians.

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

LSTC is the US distributor for THUMS. Commercial and academic licenses are available.
For more information please contact us at THUMS@lstc.com .





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32nd CADFEM USERS' MEETING 2014 - June 4 – 6, 2014; NCC Ost, Nuremberg, Germany
For Full Information please visit the website - www.usersmeeting.com

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Language: Lectures can be held in English or German.
Documents for presentation should be – if at all possible – in English.
Please submit the title of your lecture in the language in which you will hold it.

Lecture submission and deadlines: Duration of lecture should be 25 minutes.
Please submit by January 31st, 2014:

- Title of lecture
- Short summary stating subject and contents and the software used (at least 2000 signs)
- technical information
- The field/industry you are working in
- By February 14th, 2014: you will receive information about acceptance.
- by March 14th, 2014: you will receive information about session/time of your lecture.
- by May 16st, 2014: please provide us with your lecture and a short CV.

For templates and further information on lecture submission please refer to: ACUM2014-Presenters [1.5 MB].
Submissions can be sent in:

- using the fax form: Registration - online at: Registration - email to: acum2014@cadfem.de

.

Remuneration: Please visit the website for information.

Publication: By submitting your lecture you agree toyour presentation being published in the conference media and used by CADFEM and ANSYS for marketing purposes after the conference.
If you do not agree to this, please let us know.

Registration for lecturers: You must register for the conference even if you are a lecturer.
If you have chosen a free day of participation as remuneration for your user report, the respective day (presumably Thursday, June 5th, 2014) will not be charged.

ACUM Best Paper Award: A committee is going to award in each discipline (Structural Mechanics, Fluid Dynamics, Electronic-Mechanics and Systems & Multi-physics) the best presentation. Only papers submitted on time can be considered. Winners will receive a terrific surprise.

The main language is German. However, lectures in English are welcome! If you plan to attend, please note that selected sessions and workshops will be held entirely in English and the slides in all sessions will mostly be in English

http://awg.lstc.com
The LS-DYNA® Aerospace Working Group (AWG)

The LS-DYNA® Aerospace Working Group (AWG) is a partnership of federal agencies, corporations, and universities working together to develop and publish aerospace test cases and modeling guidelines for finite element analyses with LS-DYNA®.

First F-22 Sortie for "Mr. Bones"

(Source: US Air Force; issued Jan 24, 2014)
TYNDALL AIR FORCE BASE, Fla. ---- The 95th Fighter Squadron took flight for the first time Jan. 21, since its reactivation here in October 2013.

With the first group of F-22 Raptors delivered Jan. 6 from Holloman Air Force Base, N.M., Tyndall is becoming the world's largest F-22 contingent and preparing the "Boneheads" for the new combat mission.

"I felt extremely proud to be part of the first flight," said Capt. David Ruiz, 95th FS fighter pilot. "There have been a lot of people working together to achieve this milestone and resurrect 'Mr. Bones'."

The 95th FS and "Mr. Bones," the squadron's mascot, called Tyndall home for more than three decades before being deactivated in 2010.

"As 'Mr. Bones' would say: 'It's about time'," said Maj. Ryan Graf, 95th FS assistant director of operations. "'Mr. Bones' is now back on flying status." Graf piloted one of the two Raptors which flew on Tuesday marking the 95th FS's first F-22 sortie.

"It was great to finally execute a plan that had been the culmination of hard work amongst several individuals and units," Graf said. "This was a once in a lifetime opportunity."

Ruiz was the other to take flight. "I thought about all of the hard work that had been done by all the units here to make it possible to begin flying F-22s in the 95th FS," Ruiz said. "I feel honored to be part of this historic reactivation."

Now with the first sortie under the 95th FS's wing, the squadron can further the combat mission.

"Setting a goal of flying two aircraft, achieving that goal and getting outstanding training while airborne, tell me that this was a huge success," Ruiz said. "I expect outstanding work from an elite group of men and women to accomplish the missions, which we're tasked in the future."

By April, the last of 24 Raptors will arrive.
"Every segment of the sortie went as planned," Graf said. "Continuing the standard of meeting requirements, goals and expectations without fail will be expected."

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23 smart electric drive arrives on the streets of China
25 CADFEM GmbH USERS' MEETING
26 Kaizenat 2014 Training Calendar
27 LS-DYNA Aerospace Working Group

November FEA Information Engineering Solutions

06 FEAIEJ China Conference Edition
07 Oasys- 11th Annual UK Oasys LS-DYNA Users' Meeting
08 BETA CAE ANSA & µETA pre- & post-processing suite
12 CADFEM GmbH USERS' MEETING
13 Mercedes-Benz to return to China in 2014 DTM season
15 CRAY - University of Tsukuba - Cray® CS300™ cluster supercomputer
17 FORD Buffalo, New York, Stamping Plant
19 BSE-in-NX Version 2

October 2013 FEA Information Engineering Solutions

07 Comet Solutions Space-Borne EO Sensors
12 1st China LS-DYNA Users' Conference Review
14 LSTC AE-MDB Model
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16 2014 Toyota Prius Hybrid Category
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24 ESI Group Acquisition of CyDesign Labs. Inc.
28 Ford Focus Extends Streak - Best-Selling Vehicle Nameplate Worldwide
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35 TopCrunch.org Cray Inc.

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

BETA CAE Systems S.A.– ANSA

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

BETA CAE Systems S.A.– μETA

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

CRAY www.cray.com

Cray CS300-AC Cluster Supercomputer

§ The Cray CS300-AC cluster supercomputer features an air-cooled architecture based on blade server or rackmount server building block platforms. The system is built for capacity and data-intensive workloads. It delivers turnkey high performance computing with a broad range of flexible system configuration options.

§ The CS300-AC system features two new preconfigured ready-to-go solutions, the CS300 shared memory parallel and the CS300 large memory systems.

Cray CS300-LC Cluster Supercomputer

§ The Cray CS300-LC cluster solution features a direct liquid-cooled architecture using warm water heat exchangers instead of chillers. It delivers a turnkey, energy-efficient solution that reduces datacenter power and cooling operation costs for faster ROI while addressing capacity and data-intensive workloads.

Cray XC30 Supercomputer Series

§ The Cray XC30 family delivers on Cray's commitment to an adaptive supercomputing architecture that provides both extreme scalability and sustained performance. The flexibility of the Cray XC30 platform ensures that users can configure the exact machine to meet their specific requirements today, and also remain confident they can upgrade and enhance their system to address the demands of the future.

Cray Sonexion Scale-out Lustre Storage System

§ Brought to you by Cray, the world's leading experts in parallel storage solutions for HPC and the technical enterprise, the Cray Sonexion is a fully integrated, modular and compact scale-out storage system for Lustre.

DatapointLabs **www.datapointlabs.com**

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

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

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

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

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

ETA – Engineering Technology Associates www.eta.com

etainfo@eta.com

Inventium Suite™

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

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

PreSys

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

VPG

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

DYNAFORM

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

ESI Group www.esi-group.com

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

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

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

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

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

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

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

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

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

GNS - Gesellschaft für Numerische Simulation mbH

www.gns-mbh.com

Animator4

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

Generator2.

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

Indeed

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

OpenForm

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

Gompute on demand®/ Gridcore AB Sweden
www.gompute.com www.gridcore.se

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

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

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

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

HYCRASH

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

JSTAMP/NV

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

JMAG

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

Livermore Software Technology Corp.

www.lstc.com

LS-DYNA

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

LS-PrePost

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

LS-OPT

LS-OPT is a standalone Design Optimization and Probabilistic Analysis package with an interface to LS-DYNA.

The graphical preprocessor LS-OPTui facilitates definition of the design input and the creation of a command file while the postprocessor provides output such as approximation accuracy, optimization convergence, tradeoff curves, anthill plots and the relative importance of design variables.

LS-TaSC

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

LSTC Dummy Models

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

LSTC Barrier Models

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

Oasys, Ltd **www.oasys-software.com/dyna**

Oasys LS-DYNA® Environment

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

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

Key benefits:

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

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

Key benefits:

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

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

Key benefits:

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

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

Shanghai Hengstar www.hengstar.com

Center of Excellence

Hengstar Technology is the first LS-DYNA training center of excellence in China. As part of its expanding commitment to helping CAE Engineers, Hengstar Technology will continue to organize high level training courses and seminars in 2012.

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

On Site Training

Hengstar also provides customer customized training programs on-site at the company facility.

Training is tailored for company needs using LS-DYNA or the additional software products by LSTC.

Distribution & Support

Hengstar Distributes and supports LS-DYNA, LS-OPT, LS-PrePost, LS-TaSC. Hongsheng Lu, previously was directly employed by LSTC before opening his distributorship in China for LSTC software.

Hongsheng travels to LSTC often to keep current on the latest software features and support to continue to grow Hengstar as a CAE consulting group.

Comet Solutions www.cometsolutions.com

Comet enables rapid and robust design space exploration from concept discovery and selection through concept validation using a model-based engineering approach. We empower our customers to discover an array of possible design concepts, evaluate which ones are feasible, then select the best.

Comet software is a tool-open, extensible, vendor-neutral performance engineering workspace that lets engineers and engineering project teams readily carry out multi-fidelity, multi-physics modeling and simulation.

In the Comet workspace, companies can better leverage all of their simulation assets – "best practices" expertise, COTS as well as in-house engineering tools, and product performance data.

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

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

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

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

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

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

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

Germany	**GNS**		mbox@gns-mbh.com	
	www.gns-mbh.com			
	Animator	Generator	Indeed	OpenForm

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

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

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

Australia	**LEAP**			
	www.leapaust.com.au			
	ANSYS Mechanical	ANSYS CFD	ANSYS EKM	Recurdyn
	ANSYS DesignXplorer	ANSYS HPC	FlowMaster	Ensigh
	LS DYNA	DYNAform	Moldex 3D	FE-Safe
China	**ETA – China**		lma@eta.com.cn	
	www.eta.com/cn			
	Inventium	VPG	DYNAFORM	NISA
	LS-DYNA	LS-OPT	LSTC Dummy Models	LS-PrePost
			LSTC Barrier Models	LS-TaSC
China	**Oasys Ltd. China**		Stephen.zhao@arup.com	
	www.oasys-software.com/dyna			
	PRIMER D3PLOT	HYCRASH	T/HIS REPORTER	SHELL
	LS-DYNA	LS-OPT	LSTC Dummy Models	LS-PrePost
	DIGIMAT	FEMZIP	LSTC Barrier Models	LS-TaSC
China	**Shanghai Hengstar Technology**		info@hengstar.com	
	www.hengstar.com			
	LS-DYNA	LS-TaSC	LSTC Barrier Models	
	LS-DYNA Courses	LS-OPT	LSTC Dummy Models	LS-PrePost

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

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

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

Japan	**CTC**	LS-dyna@ctc-g.co.jp		
	www.engineering-eye.com			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	CmWAVE	

Japan	**JSOL**			
	www.jsol.co.jp/english/cae			
	JSTAMP	HYCRASH	JMAG	
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	TOYOTA THUMS	

Japan	**FUJITSU**			
	http://jp.fujitsu.com/solutions/hpc/app/lsdyna			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	CLOUD Services	

Japan	**LANCEMORE**	info@lancemore.jp		
	www.lancemore.jp/index_en.html			
	Consulting LS-DYNA			

Japan	**Terrabyte Co.**			
	www.terrabyte.co.jp	**English:** www.terrabyte.co.jp/english/index.htm		
	Consulting LS-DYNA			

Korea	**THEME**	wschung@kornet.com		
	www.lsdyna.co.kr			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	eta/VPG	Planets
	eta/DYNAFORM	FormingSuite	Simblow	TrueGRID
	JSTAMP/NV	Scan IP	Scan FE	Scan CAD
	FEMZIP			

Korea	**KOSTECH**	young@kostech.co.kr		
	www.kostech.co.kr			
	LS-DYNA	LS-OPT	LS-PrePost	LS-TaSC
	LSTC Dummy Models	LSTC Barrier Models	eta/VPG	FCM
	eta/DYNAFORM	DIGIMAT	Simuform	Simpack
	AxStream	TrueGrid	FEMZIP	

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

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

Germany	Gompute www.gompute.com	
Sweden	Gompute www.gompute.com	
United States	Gompute www.gompute.com	

Training Classes Germany CADFEM GmbH Training Classes

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

Training Classes Germany DYNAmore Training Classes

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

Training Classes United States LSTC Training Classes

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

Training Classes Sweden DYNAmore Nordic Training Classes

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

Training Classes France DynAS+ Training Classes

The complete Training Courses offered can be found at www.dynasplus.com

Training Classes	Thailand	Training Classes

Complete Courses offered can be found at: **http://www.dfe-tech.com/training.html**

Training Classes	United States ETA	Training Classes

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

Training Classes	United States CAE Associates	Training Classes

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

Training Classes	France Alyotech Technologies	Training Classes

For course location visit www.alyotech.fr

Training Classes	UK ARUP	Training Classes

For course location visit www.oasys-software.com/dyna/en/training

The training classes are held at our Bangalore and Pune locations

Details about the trainings offered are given below

LS-DYNA Basic Training
Feb 12-14
Contact Modelling Advanced Training
Feb 20-21
LS- DYNA Basic Training
Feb 26-28
LS- DYNA Basic Training
Mar 12-14
Material Modelling Advanced Training
Mar 20-21
LS- DYNA Basic Training
Mar 26-28
LS- DYNA Basic Training
Apr 9-11

Advanced Crash Analysis
Apr 17-18
LS- DYNA Basic Training
Apr 23-25
LS- DYNA Basic Training
May 7-9
Airbag Deployment Application
May 15-16
LS- DYNA Basic Training
May 21-23
LS- DYNA Basic Training
Jun 11-13
Advanced Material Forming Analysis
Jun 19-20
LS- DYNA Basic Training
Jun 25-27

Information and Agenda

Classes generally start at 9:30 a.m. and end at 5:00 p.m. Access to computer for workshop exercises and lunch each day are included with the registration.For any queries/clarification please contact us @ support@kaizenat.com

 **FACEBOOK**

BETA CAE SYSTEMS SA
http://www.facebook.com/pages/BETA-CAE-Systems-SA/193472524006194

Cray Inc.
http://www.facebook.com/crayinc

ESI Group
http://www.esi-group.com/corporate/facebook/

 **TWITTER**

BETA CAE SYSTEMS SA
http://twitter.com/betacae

Cray Inc.
http://www.twitter.com/cray_inc

ESI Group
http://twitter.com/ESIgroup

ETA
http://twitter.com/ETA_Inc

GNS
https://twitter.com/gnsmbh

 **LINKEDIN**

BETA CAE SYSTEMS SA

http://www.linkedin.com/company/beta-cae-systems-s.a.?trk=fc_badg

Cray Inc.

http://www.linkedin.com/company/4936

DYNAmore Nordic

http://www.linkedin.com/company/dynamore-nordic-ab

ETA

http://www.linkedin.com/groupRegistration?gid=1960361

Oasys

http://www.linkedin.com/groups/Oasys-LSDYNA-Environment-Software-4429580?gid=4429580&trk=hb_side_g

 **YOUTUBE**

BETA CAE SYSTEMS SA

http://www.youtube.com/user/betacae

Cray Inc. http://www.youtube.com/user/crayvideo

ESI Group http://www.youtube.com/ESIgroup

ETA http://www.youtube.com/user/etainfo1

Lancemore http://www.youtube.com/user/LancemoreJP?feature=watch

 **NEWS FEEDS** ETA: http://eta.com/company/news-eta?format=feed&type=rss

HPC on-demand for academic users

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

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

For more information please visit: www.gompute.com

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

Finite Elements in Fracture Mechanics	Prof. Dr. Meinhard Kuna
Time-Domain Finite Element Methods for Maxwell's Equations in Metamaterials (Springer Series in Computational Mathematics	*Jichun Li*
Finite Element Analysis: A Primer (Engineering)	*Anand V. Kulkarni - V.K. Havanur*
Finite Element Methods for Engineers	Roger T. Fenner
July 2013 Finite Element Mesh Generation	*Daniel Lo*
January 2013 The Finite Element Method: Theory, Implementation, and Applications (Texts in Computational Science and Engineering)	*Mats G. Larson -, Fredrik Bengzon*
January 2013 Finite and Boundary Element Tearing and Interconnecting Solvers for Multiscale Problems (Lecture Notes in Computational Science and Engineering)	*Clemens Pechstein*
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