

***Current Features and Developments of
LS-PREPOST***

***6th European LS-DYNA
User's Conference***

***Gothenburg, Sweden
May 29-30, 2007***



Outline of Presentation

LS-PREPOST

- Current Status of LS-Prepost
- New features in post-processing
- Features in geometry and meshing
- Pre-processing
- Scripto
- New features in version 2.2
- Conclusions




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LS-PREPOST

Current Status of LS-Prepost

- LS-Prepost 2.1 has been frozen and released
- LS-Prepost 2.1 is the standard pre- and post-processor packaged with LS-DYNA on PC/Windows
- LS-Prepost 2.1 can be freely download from ftp://ftp.lstc.com/outgoing2/lsprepost2_1
- LS-Prepost 2.2 is available and is in Beta test
- LS-Prepost 2.2 can be download from ftp://ftp.lstc.com/outgoing2/lsprepost2_2
- 64bit version is available for both Unix, Linux, and Win64


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Current Status of LS-Prepost

- Up-to-date online documentation is available at <http://www.lstc.com/lsp>
- There are 17 tutorials online that give step-by-step instructions on how to create model and data. More tutorials will be added over time
- Many mini tutorials demonstrate how to perform a specific task
- Frequently Asked Questions (FAQ) is also available online to help users
- LS-Prepost users group provides forum for support and discussions
- Linkage to other LS-DYNA support sites

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Post-Processing

Interactive saving of post.db file

- Post.db file is a subset of d3plot
- Whole model or only active parts/elements
- All states or selected states
- Select components to be save, displacement is default
- Post.db file can be read from Pull down menu:
 - ❖ File->Open->Database file
- Post.db file can be moved to different computer system with different endian
- 32bit post.db file can be read in 64bit lsprepost
- 64bit post.db file can also be read in 32bit machine as long as the file is less then 2GB

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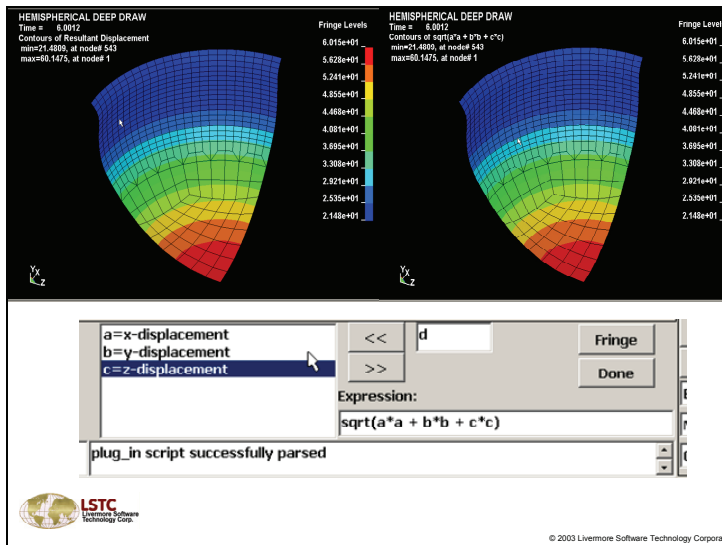
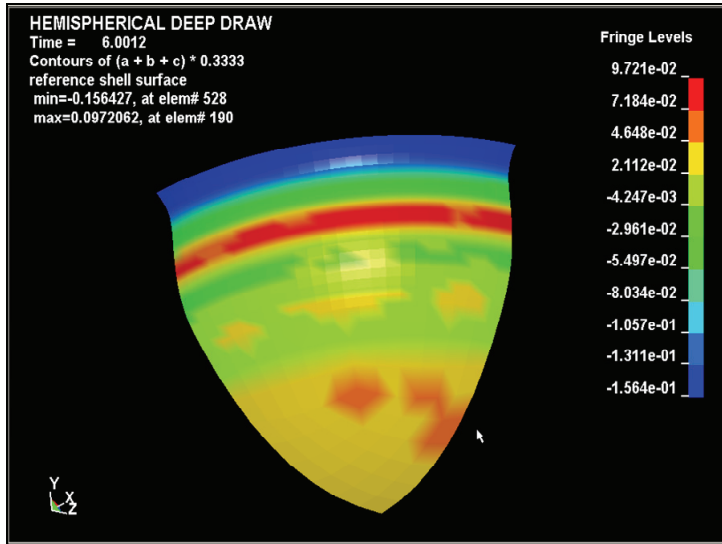
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Post-Processing

Fringe component by expression

- Assign regular fringe component to variables a, b,c,
- Define expression
- Click Fringe button to view result

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Post-Processing

Model Chaining – Page 7 ChainM –
To chain multiple models into one
single animation sequence

- Read in more than 1 post-processing (d3plot) models
- Use Apply button to move the selected model into the chain sequence
- Start and end states can be controlled, default to all states
- Once models are selected, press Chain to apply chaining

Chain Multi-Models


1-LS-DYNA user input
2-SPRINGBACK ANALYSIS

Apply Remove Rem All

Total Overall States:
0

Starting State:
Ending State:
Increment:

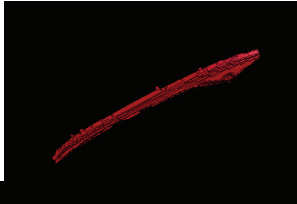
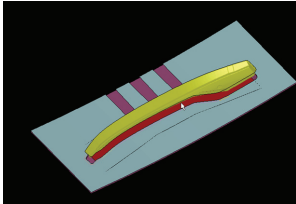
Chain Unchain

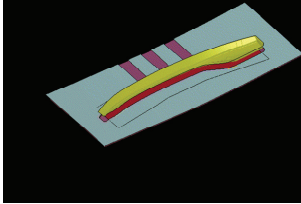



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Post-Processing








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Geometry and Meshing

- Curves/Lines interface
- Surface interface
- 2D-Meshing
- Simple Geometry Meshing
- Tetrahedron mesher and surface re-mesh
- Nlines meshing
- Surface meshing
- Block meshing



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Geometry – Curves/Lines

Page 2 or Page 7 Curves – To show/create/modify curves

- Curves can be created by inputing the xyz coordinate of a point.
- Or from picking positions on the existing mesh
- Or from picking an edge of an element
- Or imported from an Iges file, Vda, or piecewise data points format
- Arcs or circle can easily be created
- The total length of a curve can be computed
- Curves can be exported in Iges/Vda/xyz format

— Curves Interface —

Blank Create
 Modify Delete
 Rd./Wt Length

Type: Piecewise curve

ID: 1


Name: Curve_1

Apply

Show Points

ID list Export to SB

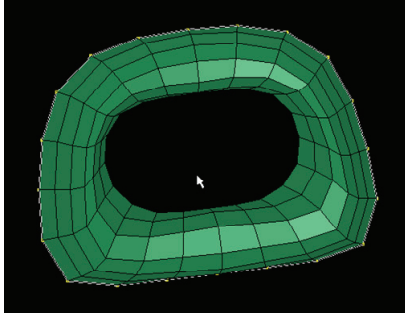
Done



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Geometry – Curves/Lines

Curve Creation by picking edge with propagation



LS-PREPOST

Curves Interface

Blank Create
 Modify Delete
 Rd./Wt Length

Type: Piecewise curve

ID: 1


Name: Curve_1

Apply

Show Points

ID list Export to SB

Done



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Geometry – Curves/Lines

Curve Modification operation

- ❖ Break Curve
- ❖ Join Curve
- ❖ Rename Curve
- ❖ Delete Points
- ❖ Insert Points
- ❖ Translate Curve
- ❖ Rotate Curve
- ❖ Smooth Curve
- ❖ Re-space Curve

LS-PREPOST

Curves Interface

Blank Create
 Modify Delete
 Rd./Wt Length

Operation:

Smooth Curve

Tear-off

Break Curve

Join Curve

Rename Curve

Delete Points

Insert Points


Translate Curve

Rotate Curve

Smooth Curve

Respace Curve

Accept Reject



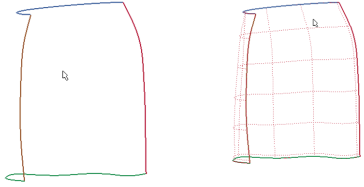
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Geometry – Surface Interface

Page 7 Surface – To show/create/modify/delete and export surfaces

- Surfaces can be imported via Iges or Vda files
- Surfaces can be created by 2/3/4line that form the boundary



Surface Interface

Blank Create

Modify Delete

Rd./Wt BD. line

Type: 2/3/4l. surface

ID: 1

PID: 1

Blank FE. Mesh

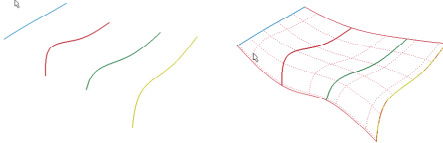
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LS-PREPOST

Geometry – Surface Interface

Page 7 Surface – To show/create/modify/delete and export surfaces

- Surfaces can be created by lines that define the skin of the surface
- Surfaces data can be exported in Iges/Vda format



Surface Interface

Blank Create

Modify Delete

Rd./Wt BD. line

Type: skin surface

ID: 1

PID: 1

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Meshing – 2D Meshing

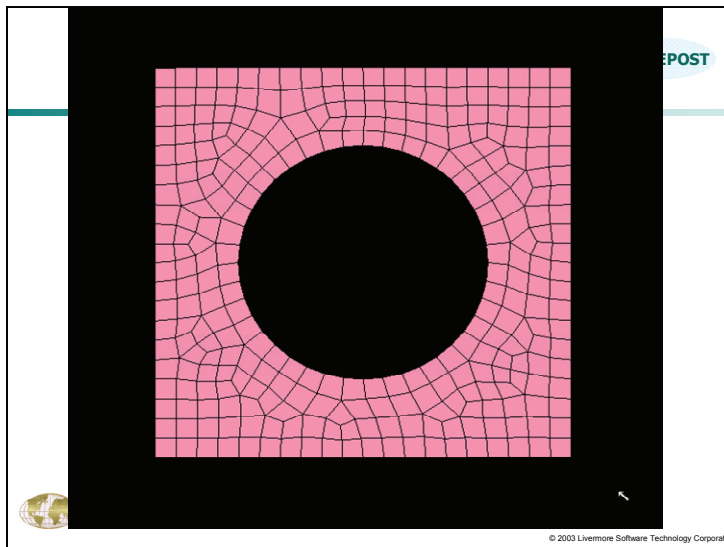
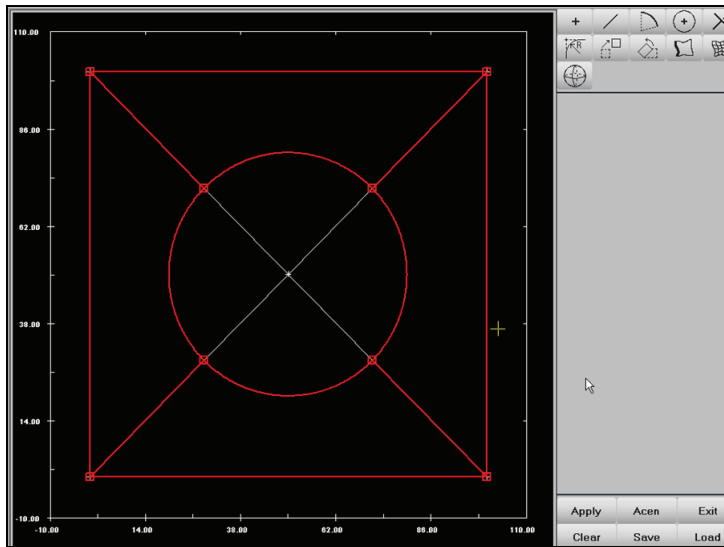
- ❑ Interface in 2D Sketch board has been revised and is more robust
- ❑ 2D sketch can be used to create closed boundary
 - ❖ Points, lines, arcs, circles will make up the boundary
 - ❖ Lines and arcs can be trimmed and/or extended to other lines and arcs
 - ❖ A fillet with a specified **Radius** can be created between lines and/or arcs
- ❑ Lines/Curves can also be imported from Curves interface
- ❑ Points/Lines can be translated and rotated with or without copies
- ❑ A sketch board edge is created from one or several curves




Meshing – 2D Meshing

- ❑ Number of elements and bias are defined on edges
- ❑ Meshing can be done with 4 different techniques
 - ❖ Topologic 4-Edge fill with quadrilateral elements
 - ❖ Topologic 3-Edge fill with quadrilateral elements
 - ❖ Topologic 3-Edge where the structured mesh degenerates in one corner
 - ❖ An arbitrary shaped area with optional holes in it will be filled with a non-structured mesh with only quadrilateral









Meshing – Simple Geometry

- Page 7 – Mesh button
- To generate simple shape geometries
- Box (Cube) – define min and max points
- Flat Shell – define 4 points
 - Cylinder – define radius, and vector along the cylinder
 - ❖ Solid or Shell – can be capped or hollow
- Sphere – define radius, and density which is the no. of elements in a 90 degree segment
 - ❖ Solid or Shell
- Accept and Reject buttons

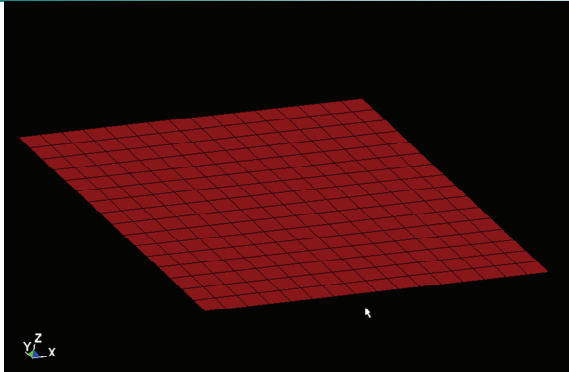


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Simple Geometry Meshing

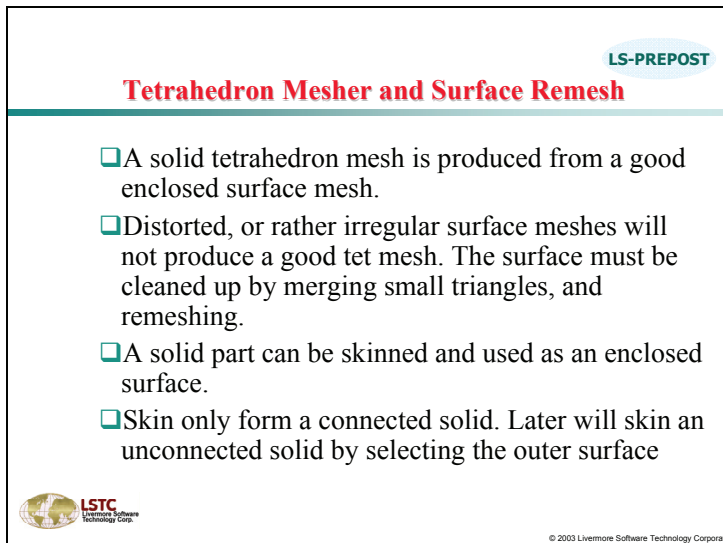
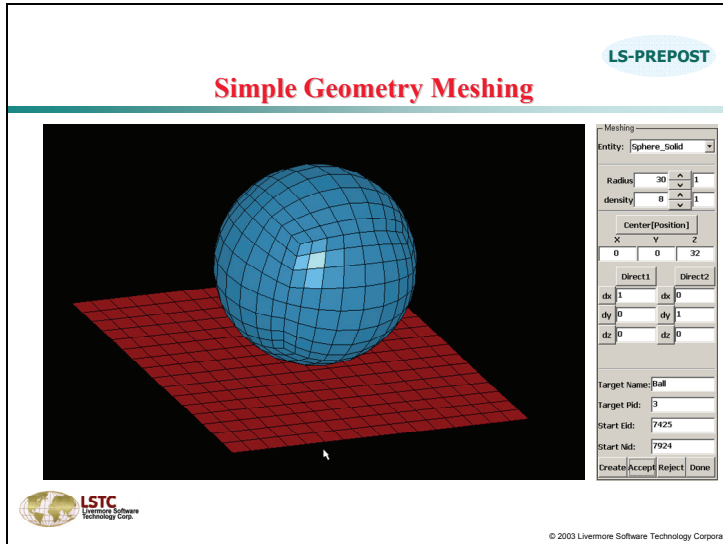


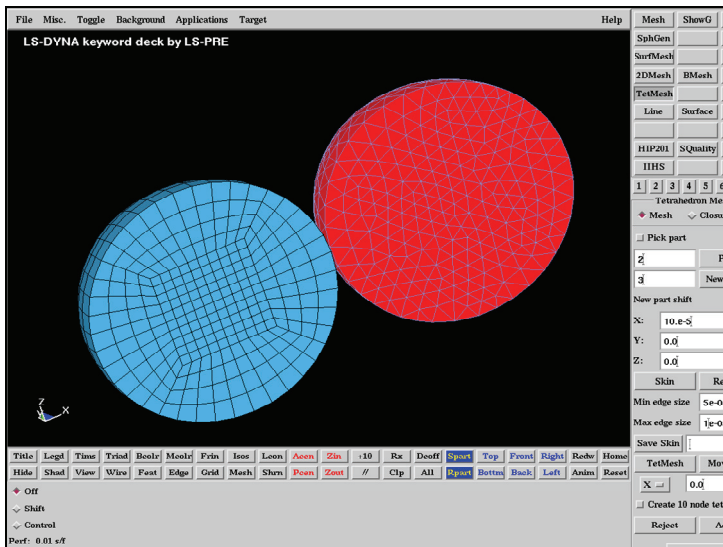
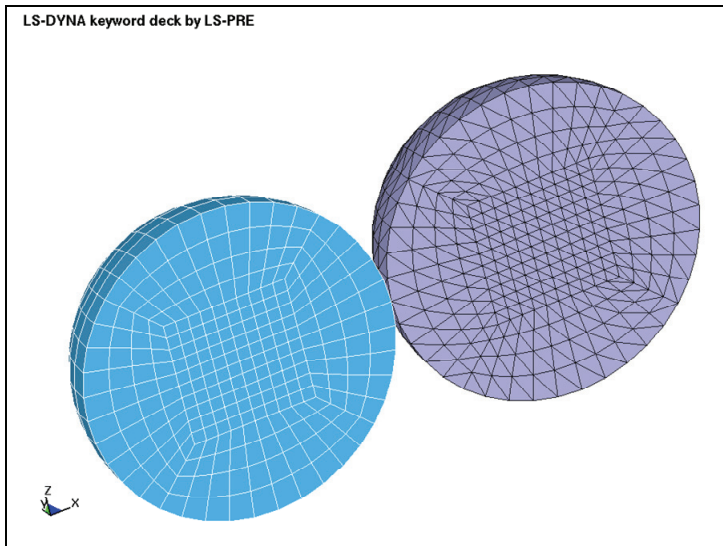
Meshing	
Entity:	xy-Shell
P1	-50 -50
P2	50 -50
P3	50 50
P4	-50 50
Nodus	16
Nylns	16
Target Name:	Ball
Target PId:	1
Start EId:	1
Start NId:	1
[Create] [Accept] [Reject] [Done]	

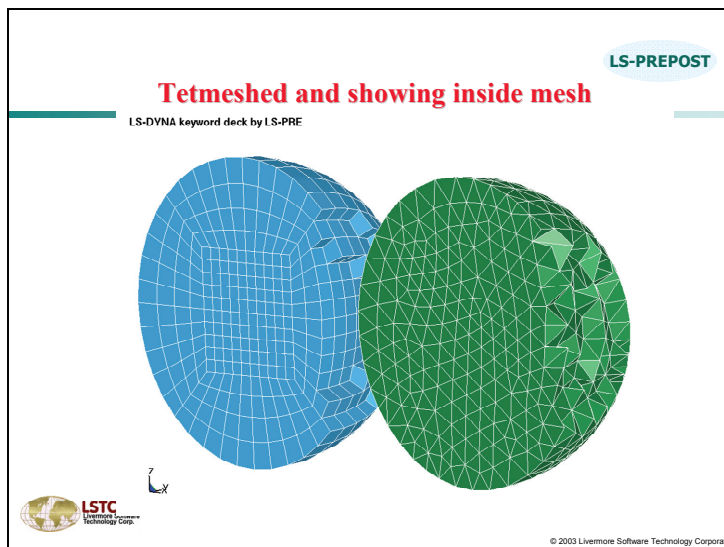


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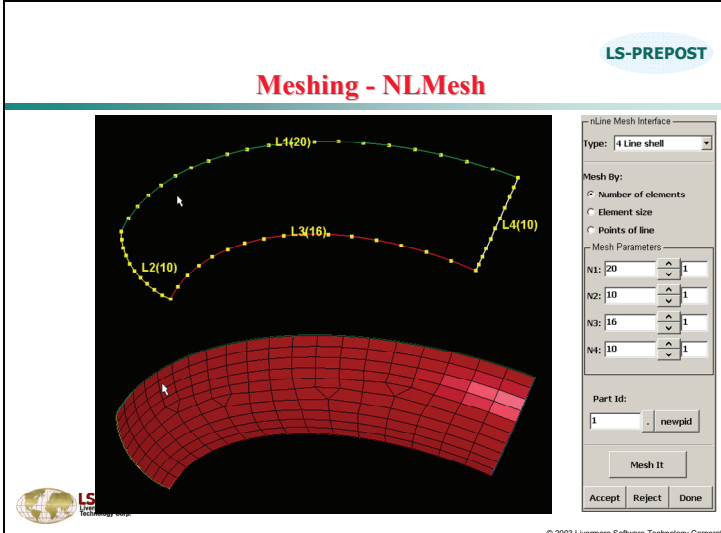
Meshing - nLMesh

Page 7 - nLMesh

- 2 Line shell – Create shell mesh between 2 curves
- 3 Line shell – Create shell mesh bounded by 3 curves
- 4 Line shell – Create shell mesh bounded by 4 curves
- Line Sweep - Create a mesh by sweeping one line along another line
- Meshing density can be selected from
 - ❖ No. of elements on line
 - ❖ Element size
 - ❖ Point of line

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Meshing - NLMesh



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—nLine Mesh Interface—

Type: 4 Line shell

Mesh By:

Number of elements

Element size

Points of line

—Mesh Parameters—

N1: 20 ▲ ▼ 1

N2: 10 ▲ ▼ 1

N3: 16 ▲ ▼ 1

N4: 10 ▲ ▼ 1

Part Id:

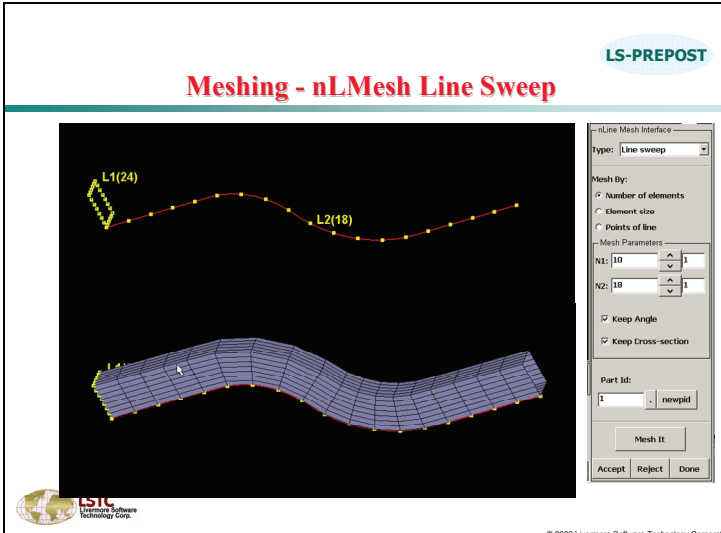
1 . newpid

Mesh It

Accept Reject Done

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Meshing - nLMesh Line Sweep



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—nLine Mesh Interface—

Type: Line sweep

Mesh By:

Number of elements

Element size

Points of line

—Mesh Parameters—

N1: 10 ▲ ▼ 1

N2: 18 ▲ ▼ 1

Keep Angle

Keep Cross-section

Part Id:

1 . newpid

Mesh It

Accept Reject Done

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Sweep 2D Cross-section into Solid

Page 2 – ElGen->Solid->Solidby Shell Sweep

- Select cross-section shell elements
- Select curves
- Assign number of elements along the curves
- Turn on “Keep Angle”
- Turn on “Keep Cross-section”

Element Gen. Interface

Beam Shell Solid

Element Id:

Part Id: pick pid

2

Solid By:

Cross-section(Shells)

Sweep Path(Line)

Seq:

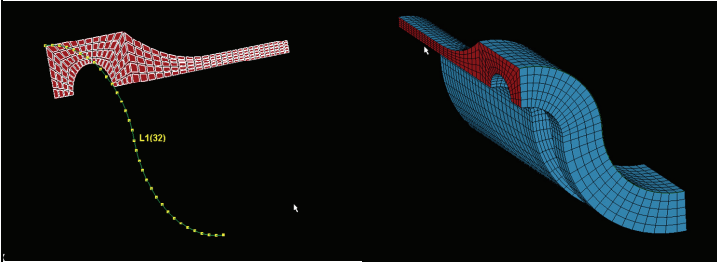
Keep Angle

Keep Cross-section


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Sweep 2D Cross-section into Solid



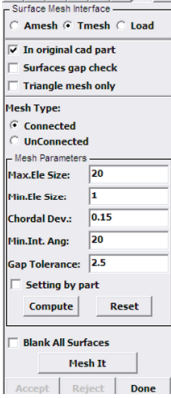
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Meshing – TMesh and AMesh

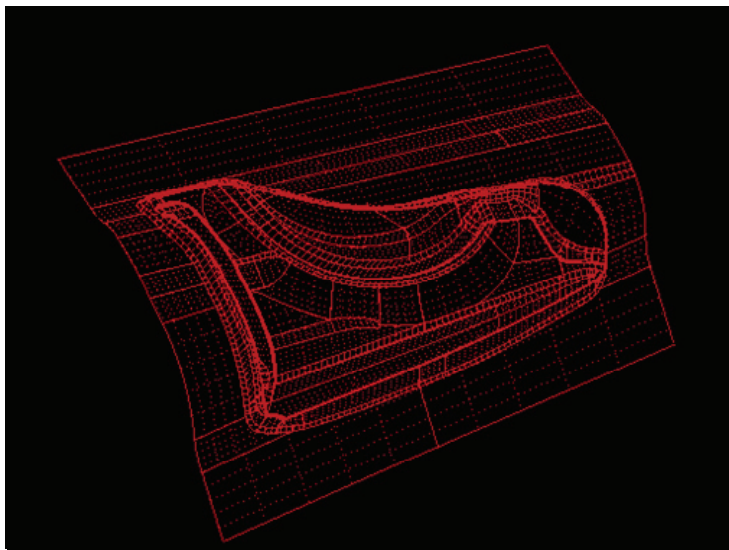
Automatic surface meshers

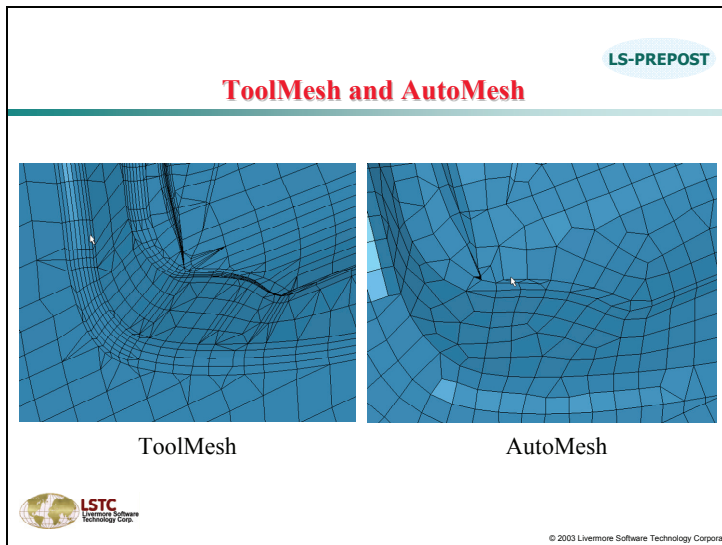
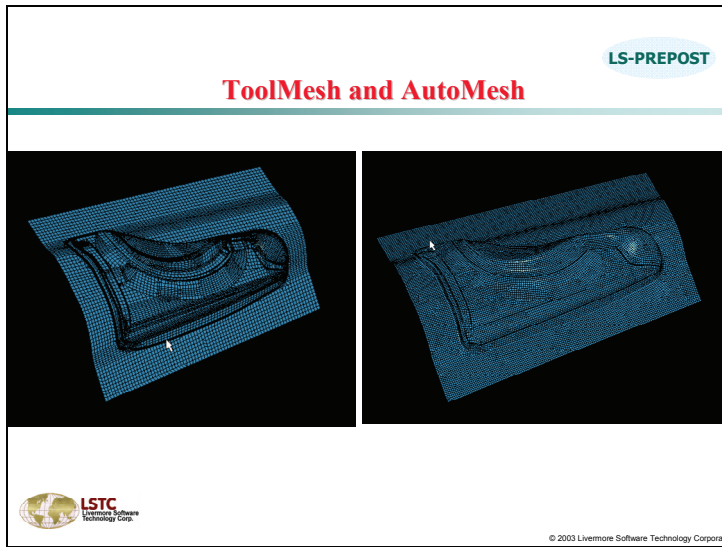
- Tmesh – tool meshing for metal stamping
- AMesh – topology meshing for regular model
- Read Iges or Vda geometry file
- Select surfaces to be meshed
- Meshing parameters can be computed
- Can accept or reject mesh






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3D Block Meshing

Page 7 BlockM


- 3D block mesher uses LS-Ingrid index space mapping method
- Both Shell and Solid can be created
- Single block, Multiple blocks and Butterfly block are the block types
- I,J,K index lists define spacing for the blocks
- X,Y,Z position lists define the actual position of the blocks



The screenshot shows the 'BlockM Interface' dialog box. It has radio buttons for 'Parameter', 'Equations', 'Create', 'Rotate Pts.', 'Blank/Del', 'Distribute', 'Move Pts.', and 'Project'. The 'Type' dropdown is set to 'Multiple Blocks'. There are input fields for 'I Index List', 'J Index List', 'K Index List', 'X Position List', 'Y Position List', and 'Z Position List'. At the bottom, there are buttons for 'Create', 'Part ID: 1', 'PList', 'Reject', 'Accept', and 'Done'.




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3D Block Meshing

Page 7 BlockM

- Computation window provides the block topology in graphical form
- Computation window also provide manipulation on the mapping projection
- When physical model rotated graphically, the computation blocks also rotated accordingly. The viewing of the physical model and the computation blocks are in sync.



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3D Block Meshing

SphGen	SWGen	BlockM
SurrMesh	nlrMesh	Smooth
2Dmesh	BMesh	
TetMesh		
Curves	Surface	ChainM
YTHesh		DriLine
HPP2D1	SQual	PeneCK
DIMS		

BlockM Computation Window

View: Misc

I Index List:
I, 10, 19

J Index List:
J, 24, 40

K Index List:
K, 10, 19

X Position List:
0 3.175, 3.175

Y Position List:
0 7.25, 14.5

Z Position List:
-3.175, -3.175, 0

Part ID: 1 Flnt

Subject Accept Done

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3D Block Meshing

3(31) 2(26) 4(67) 5(65) 12(97)

10(34) 11(67) 8(151) 2(97) 1(25) 6(56)

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3D Block Meshing

- Using negative numbers in the index list to indicate it is shell mesh instead of solid mesh
- When there is negative number in the index list, it represents shell model, positive numbers just give space index, will not generate shell
- Solid mesh and shell mesh do not mixed

Blockm Interface

Parameter Equations
 Create Rotate Pts.
 Blank/Del Distribute
 Move Pts. Project

Type: | Multiple Blocks |

I Index List:
-1 -4 -8 -11

J Index List:
1 -7 -11 17

K Index List:
-1 -5


X Position List:
0 1 2 3


Y Position List:
0 2 3 5

Z Position List:
0 1

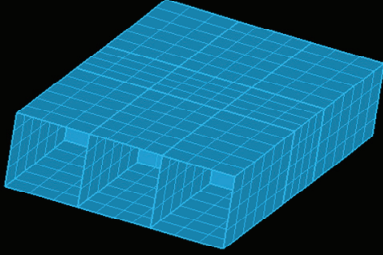
Part ID: 1

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3D Block Meshing



Surfmes nlf
2Dmesh BM
TetMesh
Curves Sur
TTMesh SC

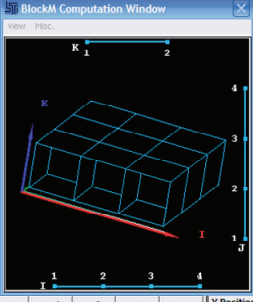
3 4
urface-
eter
Del
Pts.
Multiple
st:
11
st:
17
st:
List:

3 4
urface-
eter
Del
Pts.
Multiple
st:
11
st:
17
st:
List:

Y Position List:
0 2 3 5
Z Position List:

BlockM Computation Window

VIEW: PISC.



1 2 3 4
I J K

1 2 3 4
I J K

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3D Block Meshing

- Parameters and expression can be used
- Equations also can be used
- Parameters and expressions are case sensitive
- Coordinates can be evaluated by equations

Block Interface

Parameter Equations
 Create Rotate Pts.
 Blank/Del Distribute
 Move Pts. Project


D=1.0
Len=1.0
Hcl=24
Ang=18.0
Den=4

Delete

Parameter or Expression:
e.g. A=150 or R=T1*sin(T2)

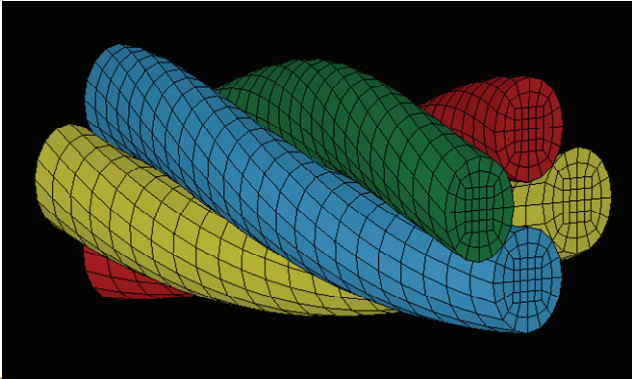
Create

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3D Block Meshing




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Pre-processing

- LS971 keyword support
- Mesh smoothing
- Spotweld generation
- Sph particle generation (new interface and capability)

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LS971 Keyword support

More LS970/LS971 keyword data are supported (some examples)

- *Keyword_ID
- *Ale_Tank_Test
- *Ale_Fsi_Switch_MMG
- *Control_Forming_Template, Travel, Position
- *Control_Adaptive_Curve
- *Control_EM
- *Control_Shell (new data cards)
- *Constrained_Interpolation_local
- *Define_friction
- *Element_Solid_Tet4ToTet10
- *Initial_Stress_Solid (new data cards)
- *Node_Scalar_Value

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Mesh Smoothing

Page 7 Smooth

- Shell and solid elements can be smoothed with simple average and projected back on the original element position
- Nodes on the boundary can be optionally be locked
- Boundary nodes for shell are the ones belonging to free edges
- Boundary nodes for solid element are the ones belonging to outer faces of the selected solid elements

Smoothing

- Select Elements
- Lock Nodes
- Feature angle
- 30.
- Lock Boundary
- 3 Iterations

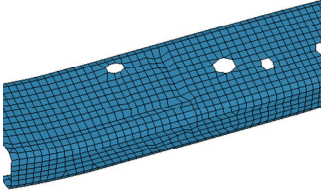


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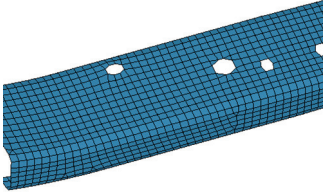
LS-PREPOST

Mesh Smoothing


Page 7 Smooth



Before smooth



After smooth with locked boundary



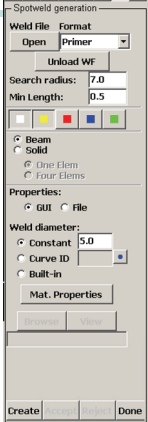
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Spotweld Generation

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Page 7 SWGen - to generate spotweld elements from a spotweld file

- Spotweld information from file
 - ❖ Primer format
 - ❖ MWF (Master Weld File) format
 - ❖ XML format
 - ❖ Custom (User defined) format
- It can generate both **solid** and **beam** type 9 spotweld elements
- Following keywords will be generated
 - ❖ *Part, *Section, *Set_Node, *Set_Part
 - ❖ *Mat_Spotweld, *Hourglass,
 - ❖ *Contact_Spotweld




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Spotweld Generation

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- Spotweld can be created with defined search radius and minimum length
- Color coded buttons to display weld information
- Constant diameter or defined by Curve can be used
- Solid element can has 1 or 4 elements
- Material properties can be defined in the Material form



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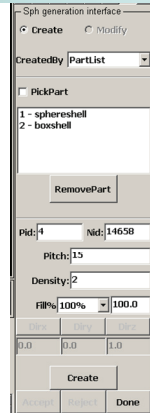
SPH Generation

Page 7 Sphgen – To create SPH particles with different fill level

- Create SPH by the following methods
 - ❖ Box – define min/max points
 - ❖ Sphere – define position and radius
 - ❖ Cylinder – define position, radius and length along with the direction of the cylinder
 - ❖ FromHex – Hex parts, use existing nodes
 - ❖ Partlist – Enclosure by shell parts
- Pitch – distance between particles
- Density is used to compute particle mass
- Fill level can be less than 100%
- Give direction of gravitation force



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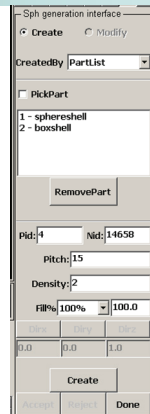
SPH Generation

Created By Partlist

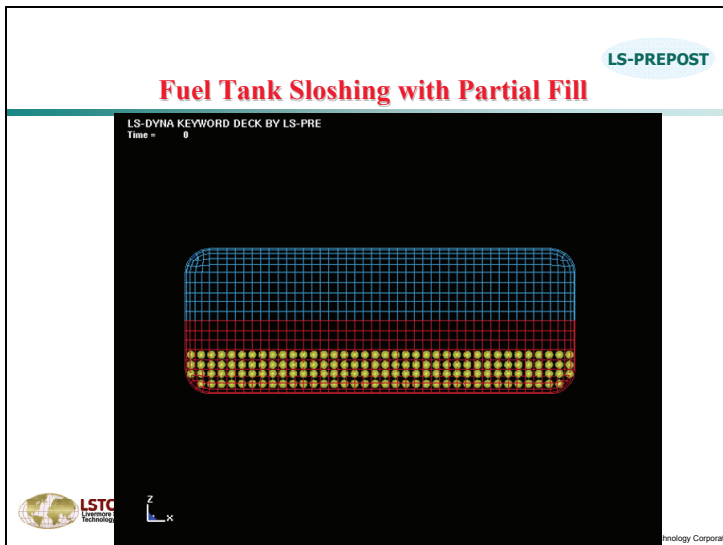
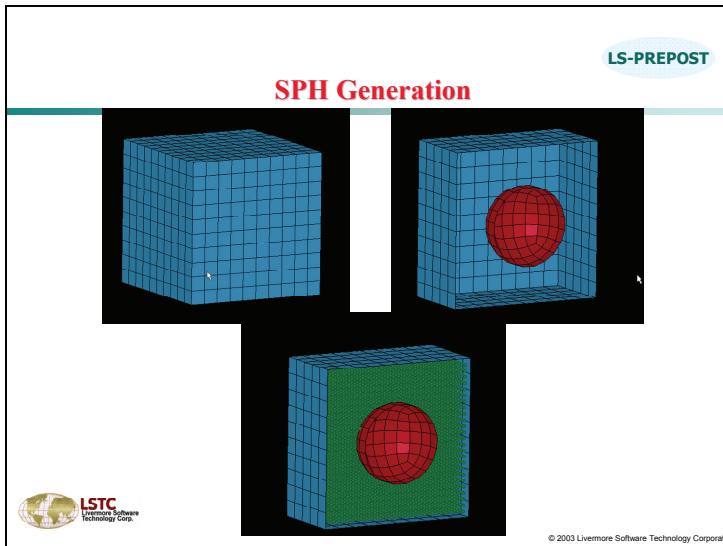
- Only Shell part can be used
- Can use multiple parts
- Shell parts should form an water tight enclosed volume
- Normals of shell should be consistent and pointing outward
- Shell thickness will be taken into account for particles close to the boundary



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Scripto

- SCRIPTO – stands for the scripting objects. It is a new tool that allows user to interface directly with LS-PREPOST through scripts
 - ❑ Re-design or Simplify the user interfaces
 - ❑ Re-group or re-organize the functions available in the LS-PREPOST
 - ❑ Integrate with other application to introduce new capabilities in LS-PREPOST



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SCRIPTO

- SCRIPTO – is a set of application programming interface (API) functions, that allows user to
 - ❑ Create new users interfaces
 - ❑ Interact with loaded models
 - ❑ Utilize mechanisms developed in the LS-PREPOST
- Scripts are developed in a C-like language and thus benefit those users that has C-language experience.
- Parsed scripts become part of the new running instance of LS-PREPOST.



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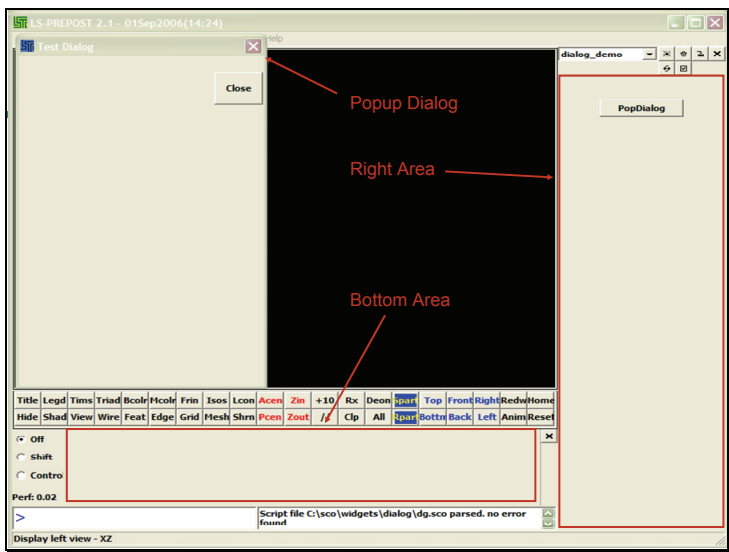
SCRIPTO

Customizable areas

- ❑ LS-PREPOST allows users to customize in 3 different areas
- ❑ FromRight, FromBottom, and FromDialog are 3 different globally defined root widgets that users intend to customize LS-PREPOST should originate their widgets from.
 - ❖ FromRight: a Form, fraction = 100
 - ❖ FromBottom: a Form, fraction = 100
 - ❖ FromDialog: a place holder for creating a dialog



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LS-PREPOST

SCRIPTO

The script control panel

Load a new script

Destroy current script

Include a script

SCRIPT_NAME

Script list, can be dropped down to switch between scripts

Reload a script

Preference settings

Return to normal menu

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LS-PREPOST

SCRIPTO

Here is an example of showing how a script can redesign the user interface of LS-PREPOST to give a model overview in a tree widget.

5 other script modules are included in this main script.

Users may load the script through

- Command line
Lsprepost2_1_main.sco
- User interface
[Applications] > [Customize]

```

LS-SCRIPT:data_demo/
/**
 * Purpose: to create a simple deck from the re-designed ui of ls-prepost
 *
 */
/**
 * prototypes
 */
void CreateBasicTabpage(void);
void Co_Manage_Setpage(DataField, CallStruct *);
/**
 * Includes
 */
#include("globals.sco");
#include("bitmaps.sco");
#include("linkdata.sco");
#include("enttabs.sco");
#include("basictabs.sco");

define:
void main(winid) {
  LoadSharedBitmaps();
  InitDialogs();
  CreateRightTabForm();
}

main();
=
=
=
    
```

Open Script

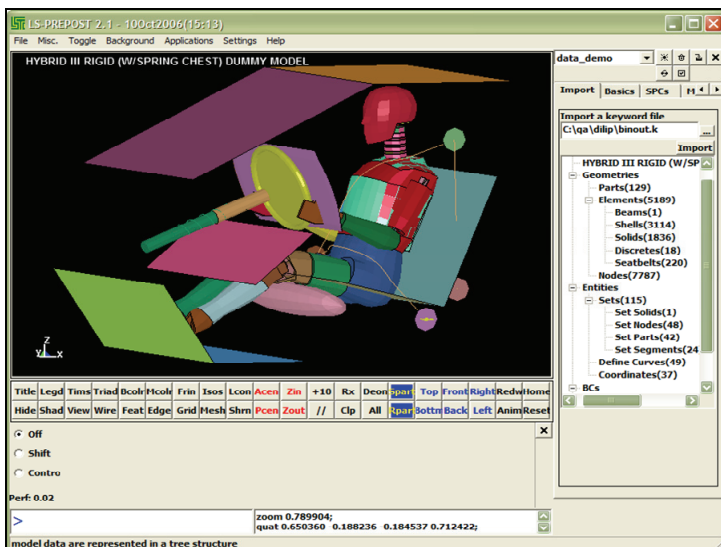
Script File: C:\game\simple\main.sco

Ok Cancel

Never mind

1,1 All

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LS-PREPOST

SCRIPTO

The document and drills - SCRIPTO.pdf


- Contains every API for SCRIPTO provided by LS-PREPOST
- Contains a syntax reference to C-Parser
- May be downloaded from LSTC's FTP site
- Drills are also provided in .sco files that accompanied with the documentation on the ftp site.

A users' group

<http://groups.google.com/group/scripto>

Provides a place for ...

- Q & A
- Bug reports
- Suggestions
- Update Announcements
- Script sharing

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LS-PREPOST

New Features in Version 2.2

- ❑ New Dummy positioning features
- ❑ Comprehensive model check
 - ❖ Extensive LS-DYNA keyword check with auto fix
 - ❖ Contact interface check (penetration check)
 - ❖ Extensive element mesh quality check
 - ❖ Part information summary
- ❑ Better element mesh editing and repair



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LS-PREPOST

Dummy Positioning

- Dummy Database
- Multiple Dummies
- Handle a dummy with its Model
- Local Coordinate Systems for Occupants
- Primer Tree Reader and more(LS-PREPOST 2.2)




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Dummy Database

- For the sharing and management purposes to the occupant models
- A dummy database contains
 - Occupant name
 - Tree/Keyword file directory
 - Tree and Keyword file names
- LS-PREPOST read the database from .LSPOSTRC file
 [occupant_list = ...]



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Dummy Database

```

LSPOST configuration
max_physical_memory
texture - off
occupant_list = 7
leg, c:\bugs\dlip\lstc_dummies\leg, leg.tree, leg.inf, \
lstc_dh3_5, c:\bugs\dlip\lstc_dummies\lstc_dh3_5, lstc_dh3_5.tree, lstc_dh3_5.inf, \
<lstc_dh3_50, c:\bugs\dlip\lstc_dummies\lstc_dh3_50, lstc_dh3_50.tree, lstc_dh3_50.inf, \
lstc_dh3_95, c:\bugs\dlip\lstc_dummies\lstc_dh3_95, lstc_dh3_95.tree, lstc_dh3_95.inf, \
lstc_rh3_5, c:\bugs\dlip\lstc_dummies\lstc_rh3_5, lstc_rh3_5.tree, lstc_rh3_5.inf, \
lstc_rh3_50, c:\bugs\dlip\lstc_dummies\lstc_rh3_50, lstc_rh3_50.tree, lstc_rh3_50.inf, \
lstc_rh3_95, c:\bugs\dlip\lstc_dummies\lstc_rh3_95, lstc_rh3_95.tree, lstc_rh3_95.inf, \
    
```

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Position Import

Write Read Load Done

Occ. N/A

Dummy Database

```

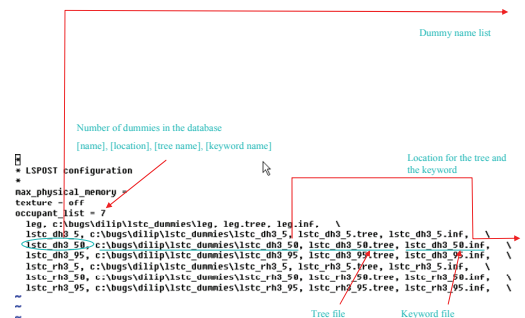
leg
lstc_dh3_5
lstc_dh3_50
lstc_dh3_95
lstc_rh3_5
lstc_rh3_50
lstc_rh3_95
    
```


==Selected Dummy info==

```


lstc_dh3_50
c:\bugs\dlip\lstc_dummi...
lstc_dh3_50.tree
lstc_dh3_50.inf
    
```

Cancel






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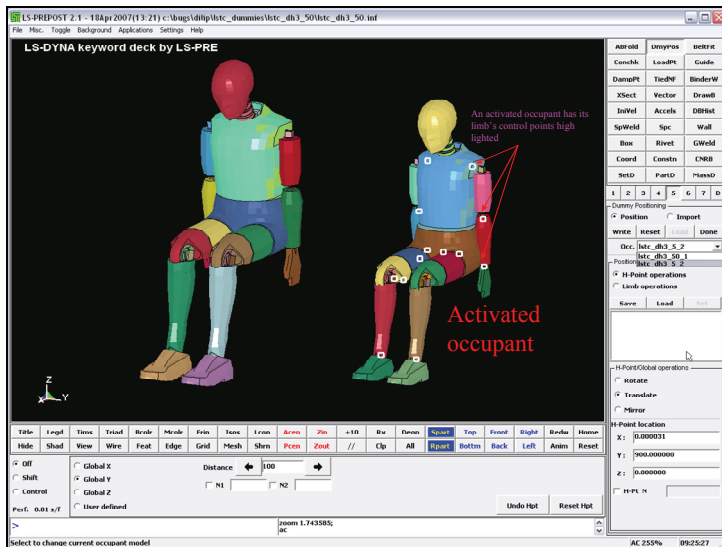


Multiple Dummies

Through [Import] interface, LS-PREPOST now can handle more than one dummies in positioning process

- Dummy Switching
 - With right-mouse click
 - With Pull-down menu
- Each dummy is operated the same way as one single dummy imported.
- All dummies can be exported into a same keyword file


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Handle dummies with its Model

- The latest release of LS-PREPOST will detect and process occupant information if one is presented in the keyword model
- The %occinfo and %endoccinfo blocks will be inserted into a keyword file after *END to carry extra occupant information with the keyword model
- Keyword files with dummies included can be later on used as a stand-alone dummy.



OCCINFO

- OCCINFO
 - Supports multiple dummies

Each OCCINFO block may contain information about different dummies that are in the model
 - Can be separated in different include files

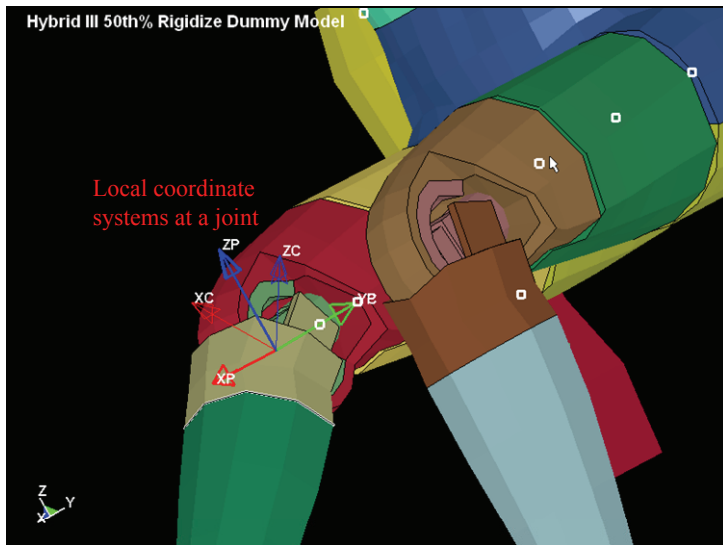
Each OCCINFO can also be separated into different keywords and through *INCLUDE card, users can import them into same model
 - Can be used as a tree file


If separated with the original keyword model with the dummy, it can be a tree file to be added into the dummy database



Local Coordinate Systems


- Inside an OCCINFO block, users may assign limbs with different rotation axes:
 - Global Coordinate System
 - Assign a specific axis by two nodes
 - Local coordinate systems assigned in *CONSTRAINED_JOINT_STIFFNESS_GENERALIZED cards.
- When Local coordinate system is turned on for the limb, LS-PREPOST will show the two coordinate systems when rotating about the limb.






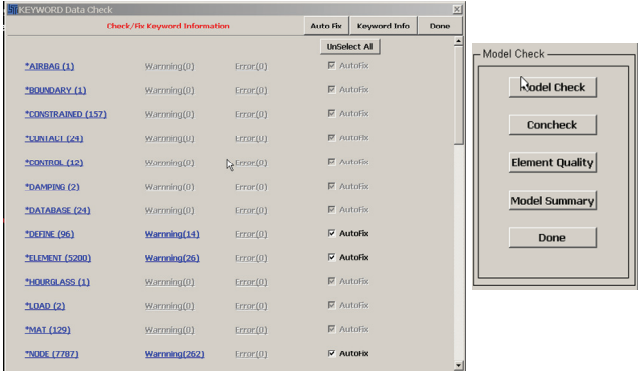
Primer Tree Reader and More...

- LS-PREPOST 2.2 will have the following new developments on Occupant Positioning System
 - A Primer Tree Reader to import a Primer's dummy seamlessly.
 - Report Rotation Angles for an occupant
 - Rotate an Occupant about global and local coordinate systems.
 - Rotation axes change through User Interfaces.



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Extensive Model Check

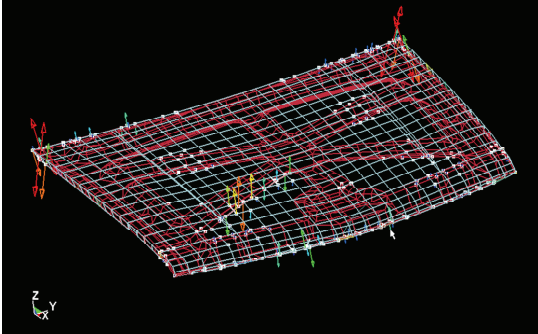


Keyword	Warning	Error	AutoFix
*AIRBAG (1)	Warning(0)	Error(0)	<input type="checkbox"/>
*BOUNDARY (1)	Warning(0)	Error(0)	<input type="checkbox"/>
*CONSTRAINED (157)	Warning(0)	Error(0)	<input type="checkbox"/>
*UNILACI (24)	Warning(0)	Error(0)	<input type="checkbox"/>
*CONTROL (12)	Warning(0)	Error(0)	<input type="checkbox"/>
*DAMPING (2)	Warning(0)	Error(0)	<input type="checkbox"/>
*DATABASE (24)	Warning(0)	Error(0)	<input type="checkbox"/>
*DEFINE (96)	Warning(14)	Error(0)	<input type="checkbox"/>
*ELEMENT (5200)	Warning(26)	Error(0)	<input type="checkbox"/>
*HOURGLASS (1)	Warning(0)	Error(0)	<input type="checkbox"/>
*LOAD (2)	Warning(0)	Error(0)	<input type="checkbox"/>
*MAT (129)	Warning(0)	Error(0)	<input type="checkbox"/>
*MODE (7787)	Warning(262)	Error(0)	<input type="checkbox"/>


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Contact Interface Check

LS-DYNA keyword deck by LS-PRE



LS-PREPOST

Contact check

Penet. Tied

By parts Contact

1 SSET 3 ALL 0 (sub 2
 2 NSET 4 SSET 5 (sub
 3 NSET 6 SSET 7 (sub
 4 NSET 8 SSET 9 (sub
 5 PSET 10 PSET 11 (s
 6 PSET 12 PSET 13 (s
 7 PSET 14 PSET 15 (s
 8 PSET 16 PSET 17 (s

Show: CE Pen.

St LO 1.0

Ignore < 1.0

Automatic Fixing

Lock Nodes

Move 100 % of penet.

Run 1 Iterations

Manual Fixing

Flip Nodes

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Model Part Info Summary

Part Sort

Sort Part											Setting Column:	
Type	PartId	PartName	SectionId	MatId	EosId	Hrglass	Eform	Thickness	Mass	NumElem		
1	Solid	1 PSOLID	: 1	1	1	0	0	2	0	0.392552	192	<input checked="" type="checkbox"/> Type
2	Solid	2 PSOLID	: 1	2	2	0	0	0	0.09790057	16	<input checked="" type="checkbox"/> PartId	
3	Solid	3 PSOLID	: 1	3	3	0	0	0	0.247188	16	<input checked="" type="checkbox"/> PartName	
4	Solid	4 PSOLID	: 1	4	4	0	0	0	0.07875	16	<input checked="" type="checkbox"/> SectionId	
5	Solid	5 PSOLID	: 1	5	5	0	0	0	0.0787493	16	<input type="checkbox"/> SectionName	
6	Solid	6 PSOLID	: 1	6	6	0	0	0	0.0787466	16	<input type="checkbox"/> MatId	
7	Solid	7 PSOLID	: 1	7	7	0	0	0	7.99379e-06	1	<input type="checkbox"/> MatName	
8	Solid	8 PSOLID	: 1	8	8	0	0	0	0.107898	1	<input type="checkbox"/> Eform	
9	Solid	9 PSOLID	: 1	9	9	0	0	0	0.10794	1	<input type="checkbox"/> Thickness	
10	Solid	10 PSOLID	: 1	10	10	0	0	0	4.261	8	<input type="checkbox"/> Mass	
11	Solid	11 PSOLID	: 1	11	11	0	0	0	1.26076	120	<input type="checkbox"/> Cent_XYZ	
12	Solid	12 PSOLID	: 1	12	12	0	0	0	2.33035	175	<input type="checkbox"/> NumElem	
13	Shell	13 PSHELL	: 1	13	13	0	0	0.4259	15.74	17	<input type="checkbox"/> Area	
14	Solid	17 PSOLID	: 1	17	17	0	0	0	0.569594	1	<input type="checkbox"/> Volume	
15	Shell	18 PSHELL	: 1	18	18	0	0	0.5	3.19971	99		
16	Shell	19 PSHELL	: 1	19	19	0	0	0.5	2.67631	67		
17	Solid	20 PSOLID	: 1	20	20	0	0	0	0.0248878	1		
18	Shell	21 PSHELL	: 1	21	21	0	0	0.5	0.320095	99		
19	Shell	22 PSHELL	: 1	22	22	0	0	0.5	0.267632	67		
20	Solid	23 PSOLID	: 1	23	23	0	0	0	0.0248879	1		
21	Shell	24 PSHELL	: 1	24	24	0	0	0.2	2.086	32		
22	Solid	25 PSOLID	: 1	25	25	0	0	0	0.0104329	2		
23	Shell	26 PSHELL	: 1	26	26	0	0	0.2	2.086	32		
24	Solid	27 PSOLID	: 1	27	27	0	0	0	0.0194338	2		
25	Shell	28 PSHELL	: 1	28	28	0	0	0.2	1.723	22		
26	Shell	30 PSHELL	: 1	30	30	0	0	0.2	1.723	22		
27	Shell	32 PSHELL	: 1	32	32	0	0	0.2	0.584999	10		
28	Shell	34 PSHELL	: 1	34	34	0	0	0.2	0.584999	10		
29	Solid	36 PSOLID	: 1	36	36	0	0	2	1.05803	24		
30	Solid	37 PSOLID	: 1	37	37	0	0	0	0.145323	12		

LS-PREPOST

Setting Column:

Type

PartId

PartName

SectionId

SectionName

MatId

MatName

Eform

Hrglass

Thickness

Mass

Cent_XYZ

NumElem

Area

Volume

LS-PREPOST

Mesh Quality Check Interface - Eledit

HYBRID III RIGID (W/SPRING CHEST) DUMMY MODEL
Contours of
min=0, at elem# 295
max=81.3416, at elem# 6304

Fringe Levels
1.000e+00
5.000e-01
0.000e+00

Shell Quality Check	Allowable	Min. val	Max. val	#Violated(%)	
<input checked="" type="checkbox"/> Min side length	3	0.990012	212.501	52(1.62%)	Clear All
<input checked="" type="checkbox"/> Max side length	30	0.990012	212.501	2030(65.19%)	Save Failed
<input checked="" type="checkbox"/> Aspect Ratio	10	1.00001	11.2038	12(0.3854%)	Write Report
<input checked="" type="checkbox"/> Warpage	10	0	61.3416	118(3.789%)	

Element Edit Interface —
Node Element
 Ident Check
 Create Create
 Delete Delete
 Replace Split/Merge
 Align Modify
 Modify Direction

Show Free Edges

Beam Solid
 Shell TShell

Checking method
Quality Check
Duplicate
Normal
Free - Unattached
UnderCut
Curvature

Criterion:

No Report

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LS-PREPOST

Conclusions

- Make LS-Prepost more stable and more robust is always our number one priority
- Support LS-DYNA's pre- and post-processing needs is our major goal and objective
- Fulfill user's demands whenever it is possible
- Willing to listen to users suggestions and adapting new ideas

No Report

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