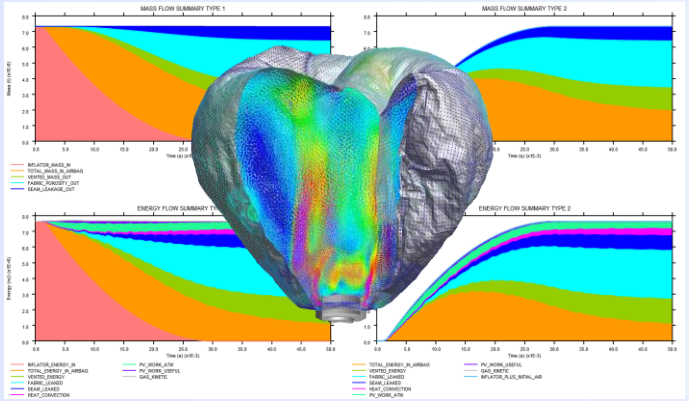
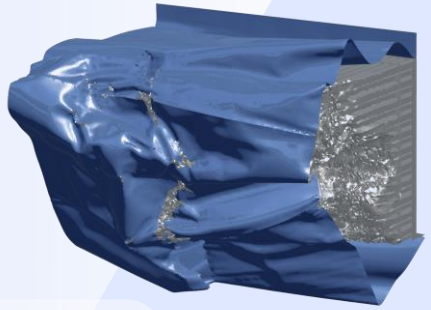
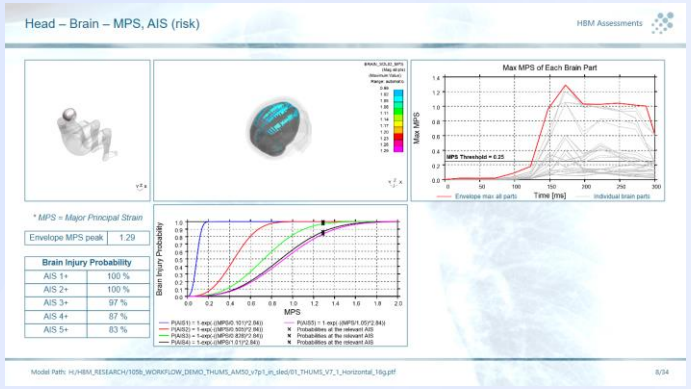
T/HIS 23.0

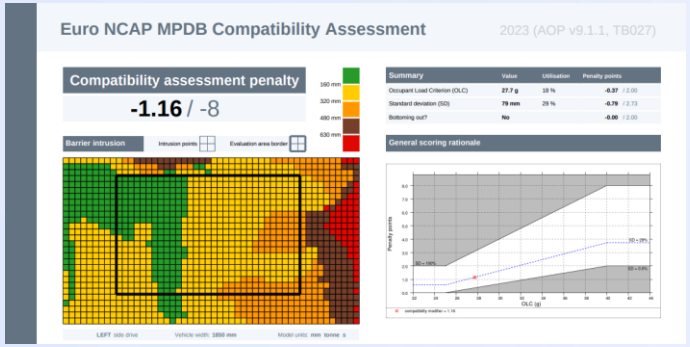
Oasys
LS-DYNA Environment

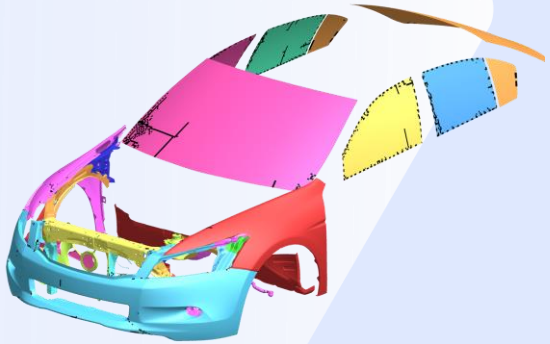
T/HIS 23.0 – Contents





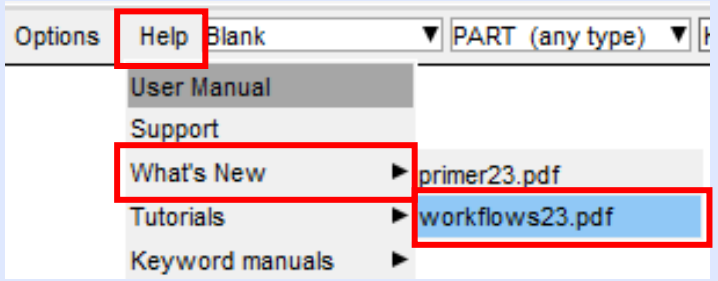






Workflows

- Workflows now has its own dedicated New Features document, which you can find in the Help menu of each program and on the Download pages of our website.
- Workflows 23 includes:
  - New Airbag Toolbox
  - New HBM Assessments
  - New Utilisation Workflows
  - Upgraded MPDB Compatibility Assessment
  - Expanded automotive protocol support
  - The latest Virtual Testing solutions

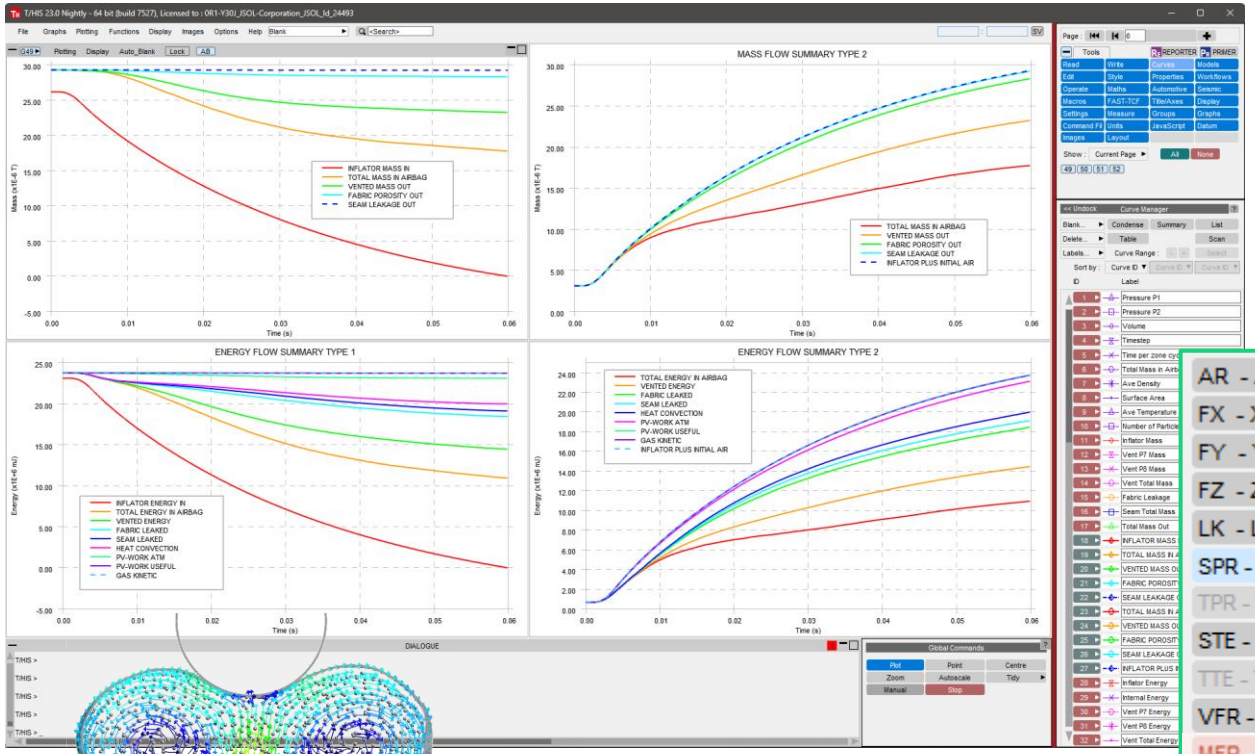


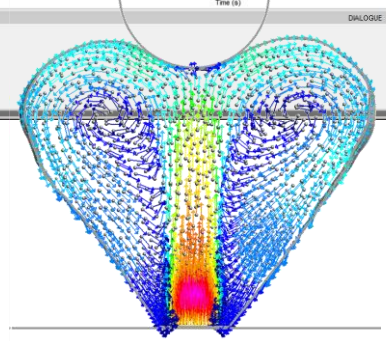

Complete Ansys LS-DYNA Support

Support for *AIRBAG_CPG

Support for *AIRBAG_CPG

- Full support continues for the new CFD solver, Continuum Particle Gas (CPG), specialised for airbag gas dynamics. Since 22.0, support has been added for data channels output by R16.2 and R17dev:





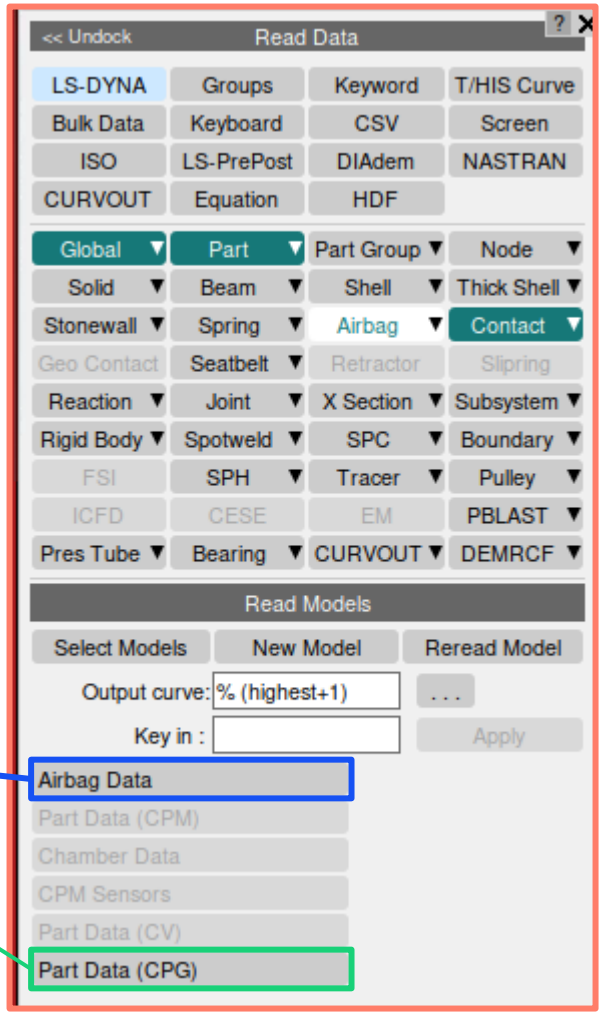
Per part

AR - Area
FX - X Force
FY - Y Force
FZ - Z Force
LK - Leakage
SPR - Static Pressure
TPR - Total Pressure
STE - Static Temperature
TTE - Total Temperature
VFR - Volume Flow Rate
MFR - Mass Flow Rate
HT - Heat Transfer
HTR - Heat Transfer Rate
HC - Heat Convection Energy
HCR - Heat Convection Rate
LE - Leakage Energy
LER - Leakage Energy Rate
UN - Unblocked Area

From R17 leaked energy "HT" is separated into enthalpy "LE" and heat convection losses "HC"

Per airbag

PR - Pressure
EPR - Exact Pressure
VO - Volume
IE - Internal energy
EIE - Exact Internal energy
IN - Mass flow rate in
OU - Mass flow rate out
MIN - Mass in
MOU - Mass out
TM - Total mass
DE - Density
DE - Exact Density
SA - Surface area
TE - Gas temperature
RF - Reaction force
TK - Translational KE
IF - Inflator Energy
DMP - Damping Energy
PP - Ave Particle Pressure
MAF - Mass flow rate via fabri
MAV - Mass flow rate via vent
MOF - Mass out via fabric
MOV - Mass out via vent
WKA - Work Atmospheric
WKU - Work Useful
NP - Num Particles



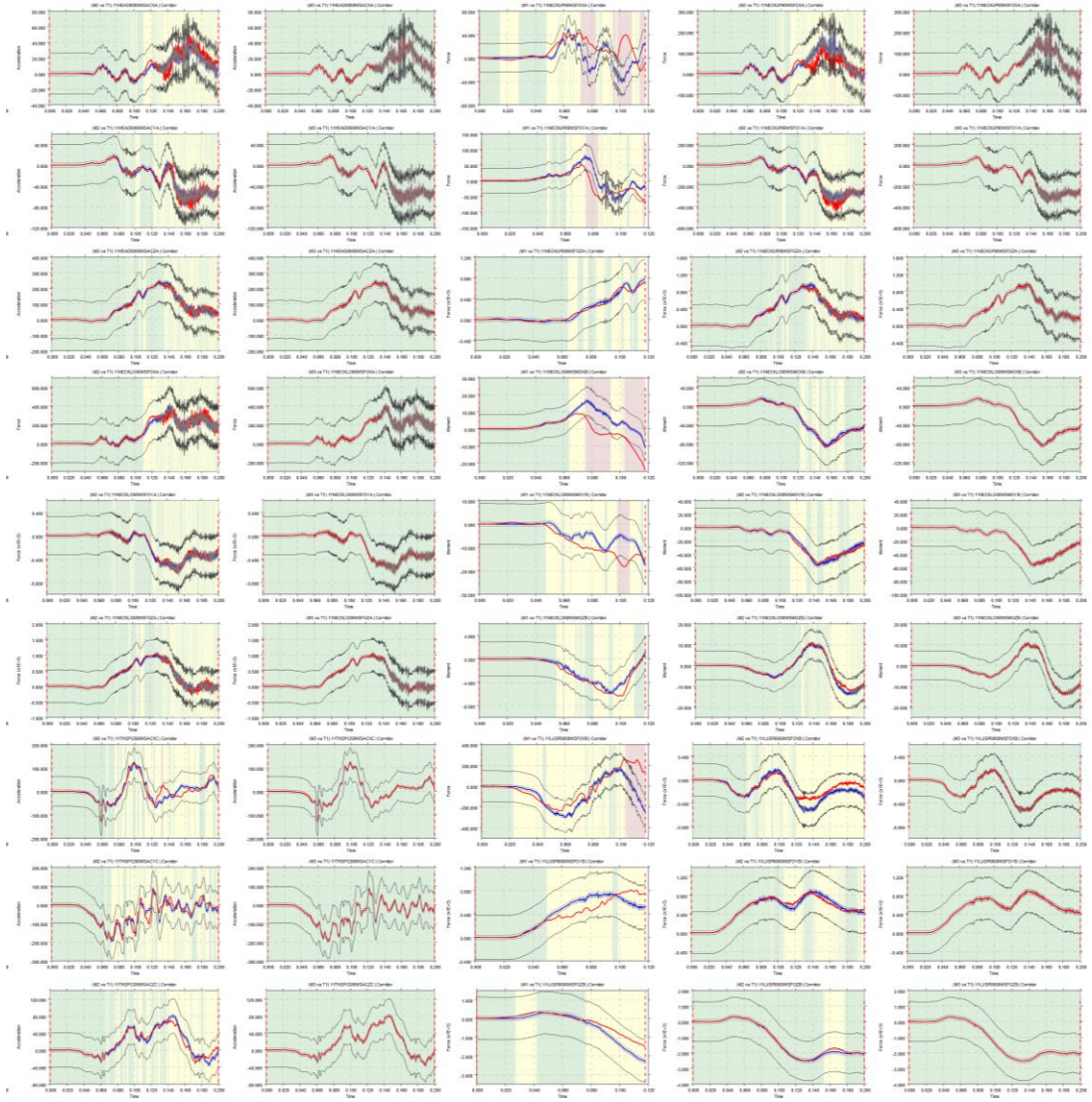
Oasys LS-DYNA Environment


Speed and Performance

Pages and Graphs

Pages and Graphs

- An increased limit of 1024 T/HIS graphs per session enables you to display and analyse larger sets of results, supporting more detailed interrogation and reporting of simulation data.
- This new capability supports users processing ATDs and other simulations containing large numbers of sensors, as well as virtual testing workflows where correlation of hundreds of channels is quicker and more convenient to operate and review in a single T/HIS session.

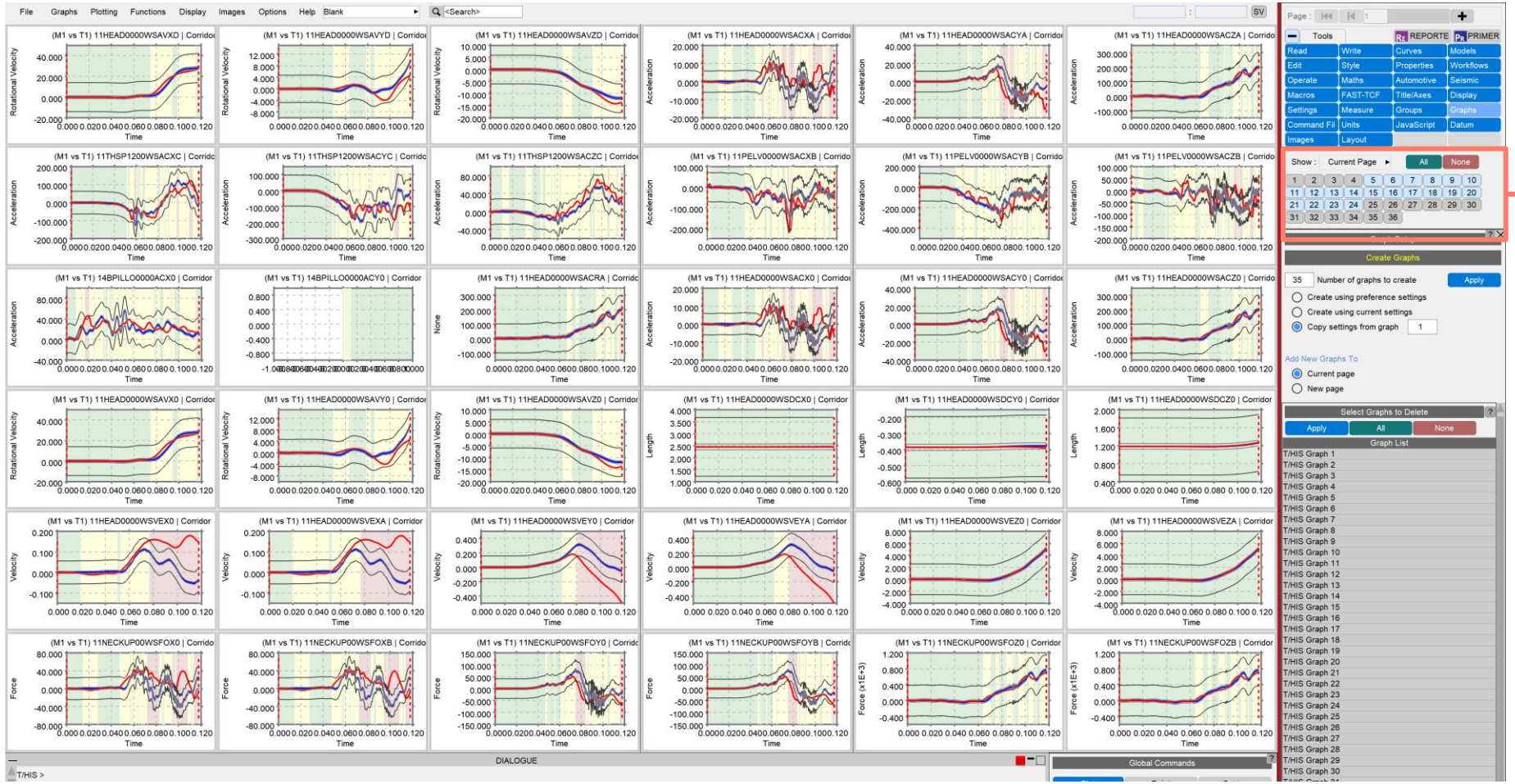


Pages and Graphs

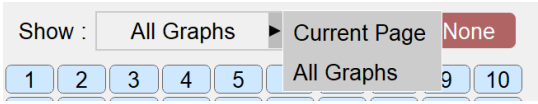
- T/HIS can now support up to 1024 pages and graphs in a single session. Previously, the limit was 32.
- Additionally, the maximum number of graphs on a single page is now capped at 64, though 32 remains the default out-of-the-box.
  - This setting can be controlled interactively on the Page Layout panel or set by the preference "**`max_graphs_per_page`**".
- A page's existence is no longer predicated on it containing a graph, meaning that pages can be created and deleted as needed.
- Pages can now be assigned a user-defined name, making them easier to keep track of, and these names can be referenced in automated processes including via the JavaScript API.
- As of version 23.0, additional pages and graphs and page naming functionality are not currently supported in the D3PLOT-T/HIS link. Open a standalone T/HIS session to benefit from the new capability.

Graphs Tool

- A T/HIS session with more than 32 graphs on a page:

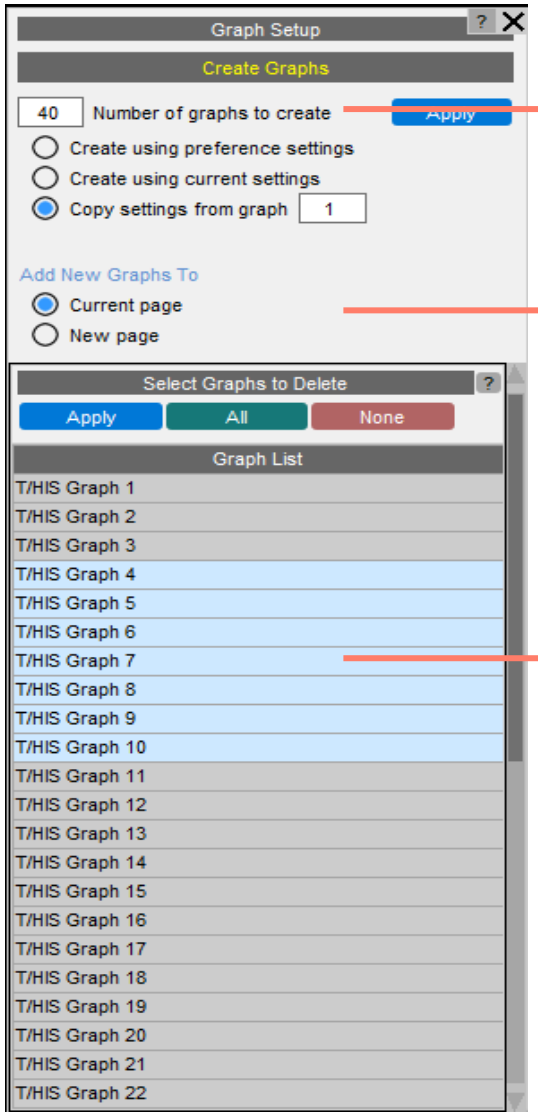


The active status of a graph can be changed by clicking its graph number toggle button. All graphs can be activated simultaneously using the **“All”** button and deactivated using the **“None”** button



The toggle buttons are displayed either for **“All Graphs”** or only for graphs on the **“Current Page”**, based on the selection made from the available dropdown.

Creating and Deleting graphs



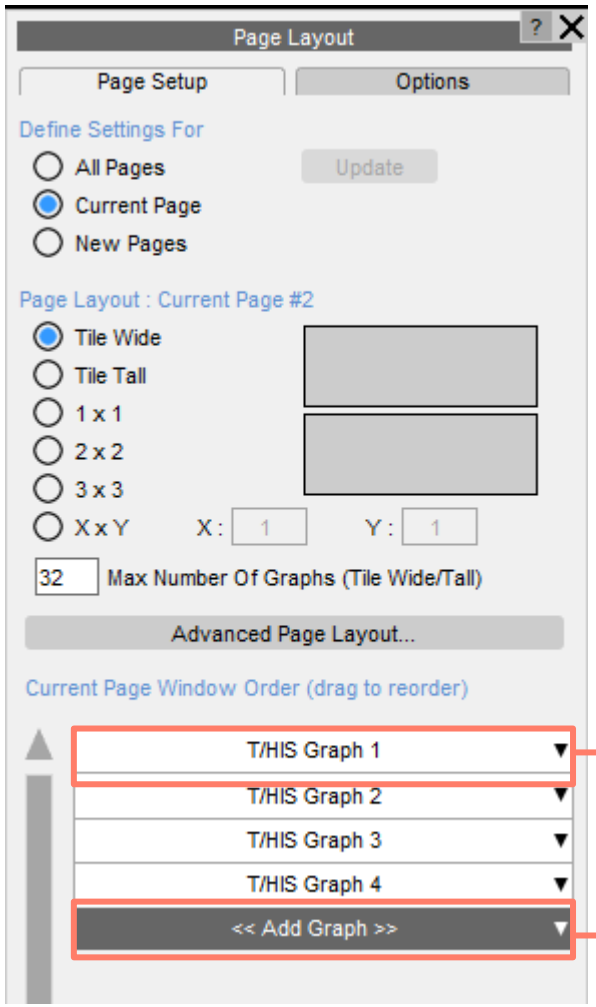
More than 32 graphs can be created at once

Newly created graphs can be added to the Current page or New page. If New page is chosen, T/HIS creates a new page and adds graphs to that

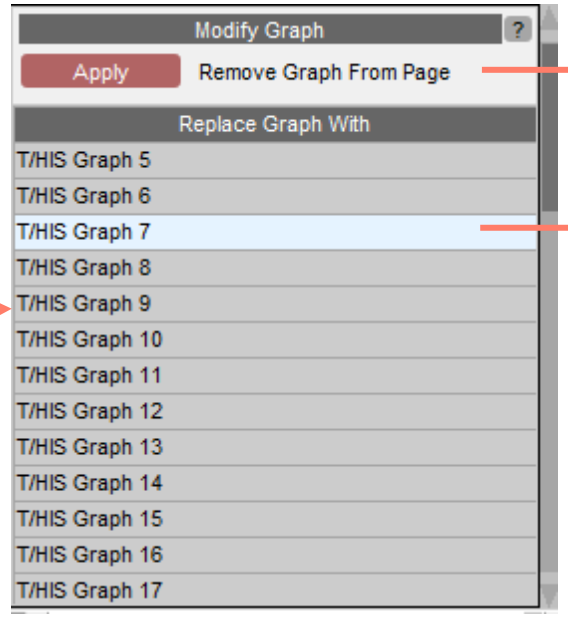
Deleting multiple graphs is now made easy by providing a Graph list. Selecting graphs from the list and clicking on “Apply” deletes the selected graphs

Adding graphs to a page

- Adding/Removing/Replacing graphs on a page can be done from Page Layout tool.



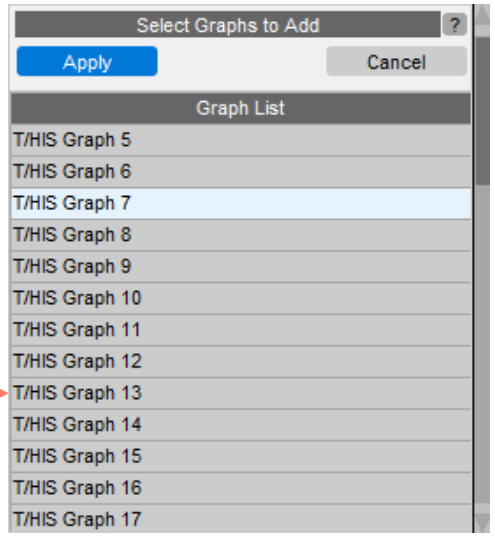
T/HIS Graph dropdown provides a window to remove or replace the particular graph



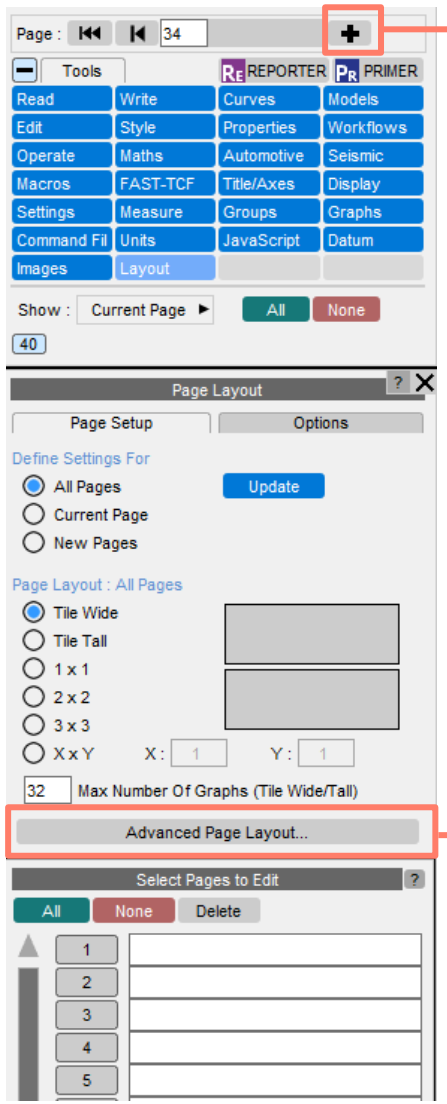
Clicking on Apply removes the graph from the page

Select a graph from the list to replace a particular graph on the page with the selected graph

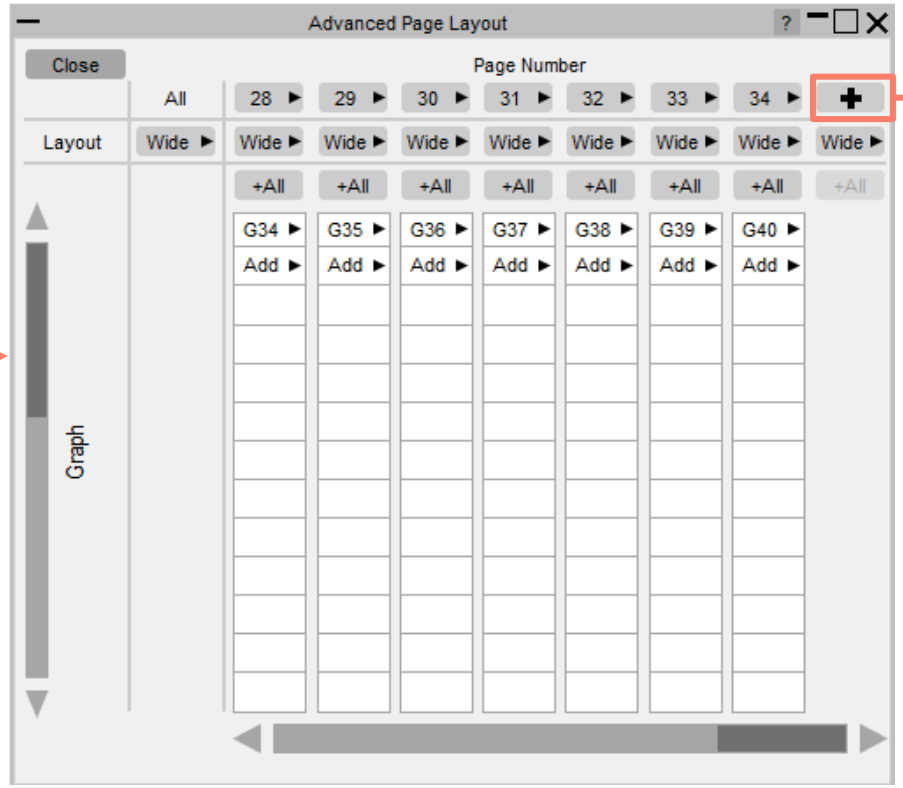
<<Add Graph>> drop down provides a list of graphs available in the session. Selecting a graph from the list and clicking “Apply” adds the selected graph to the page



Creating New Pages

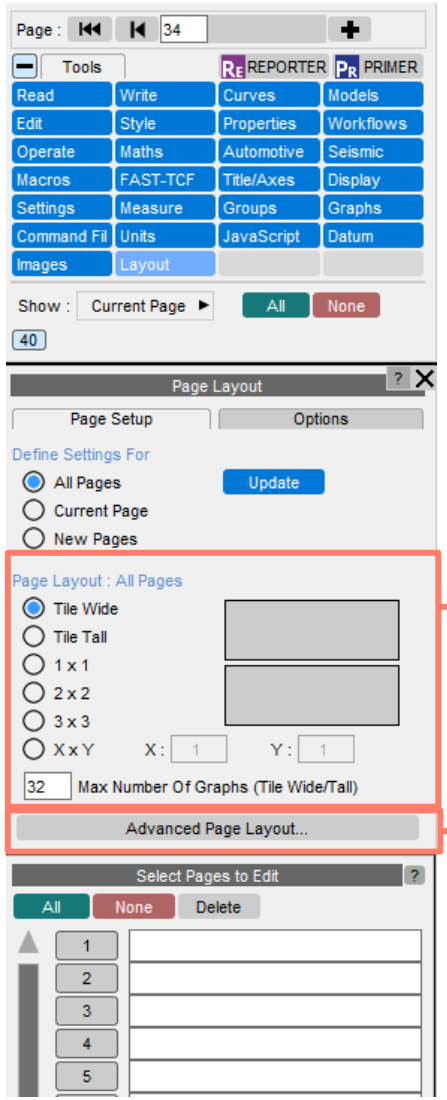


New Pages can be added by clicking on '+' button in the top bar. T/HIS can now have more than 32 Pages.



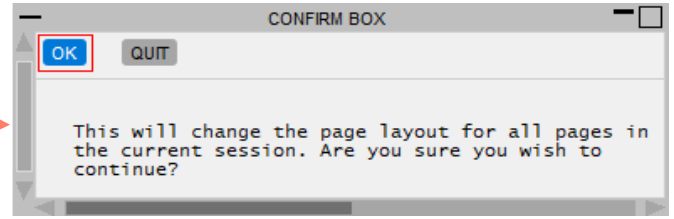
When in Advanced Page Layout panel, New pages can be added by clicking on '+' button in the top right corner.

All Pages Layout

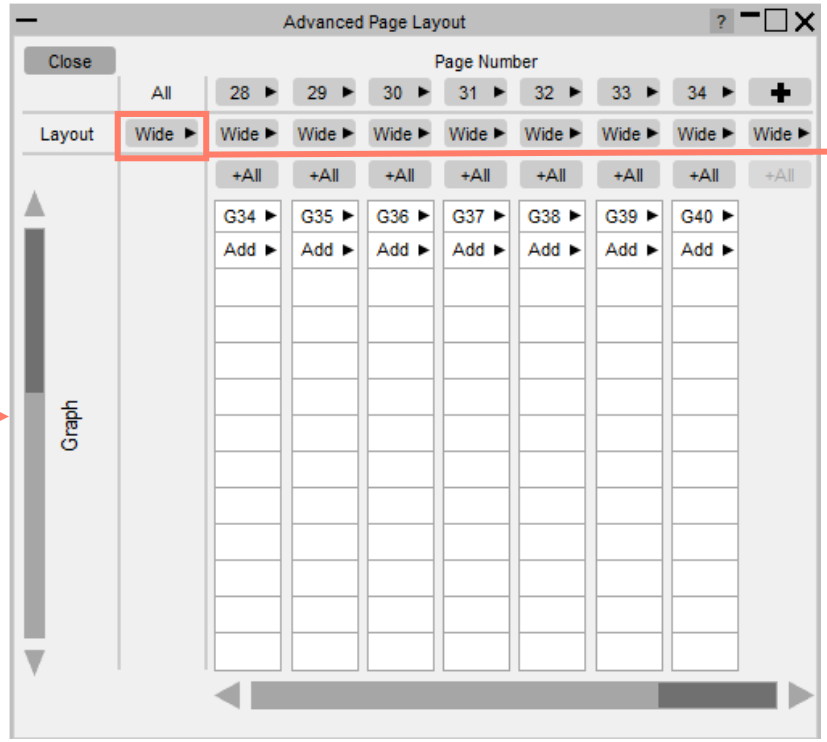


Clicking **All Pages** radio button opens the Layout panel for all pages.
Selecting a different layout and clicking **Update** applies the selected layout to all pages.

This action opens a confirmation dialog requesting confirmation to update the page layout for all pages in the current session.

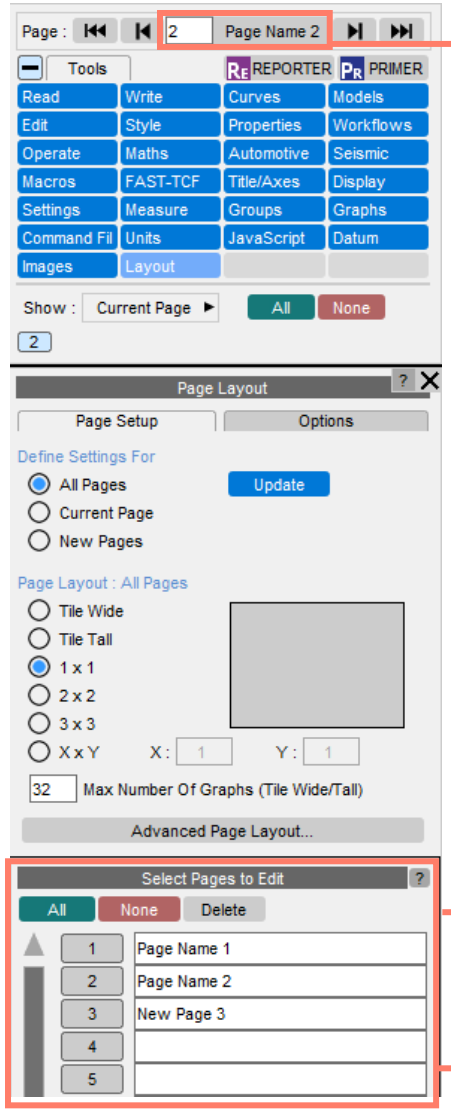


This confirmation is required because graphs may be hidden if the number of allowable graphs in the selected layout is less than that in the current layout. Hidden graphs can be restored by adding them using Current Page Window Order Panel



When in Advanced Page Layout, the layout button under **All** can be selected to update the layout for all the pages.

Page Naming and Deleting Pages



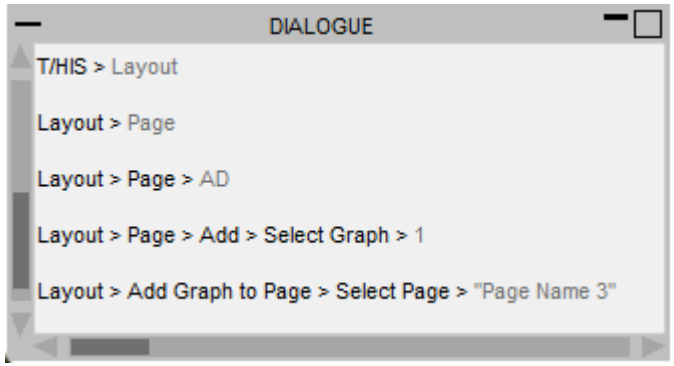
The page name for the current page is displayed in the top bar.

Selecting the **All Pages** radio button opens the Page Edit panel, where page names can be modified.

Reserved names such as **"All"** or **"all"** are not permitted, as they interfere with dialog commands.

Each page name must be unique.

The page name can also be viewed in the **Advanced Page Layout** panel by hovering over the page number button.

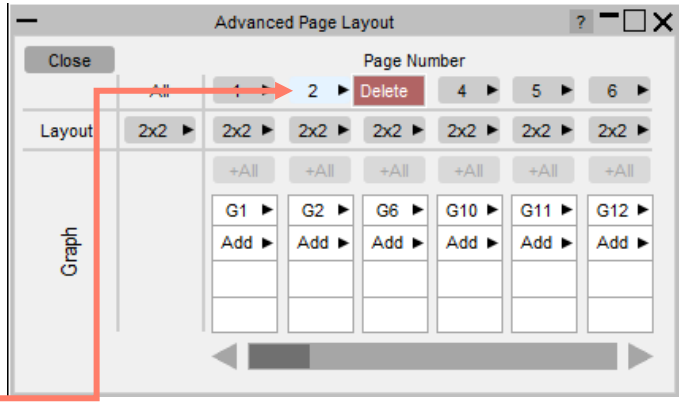


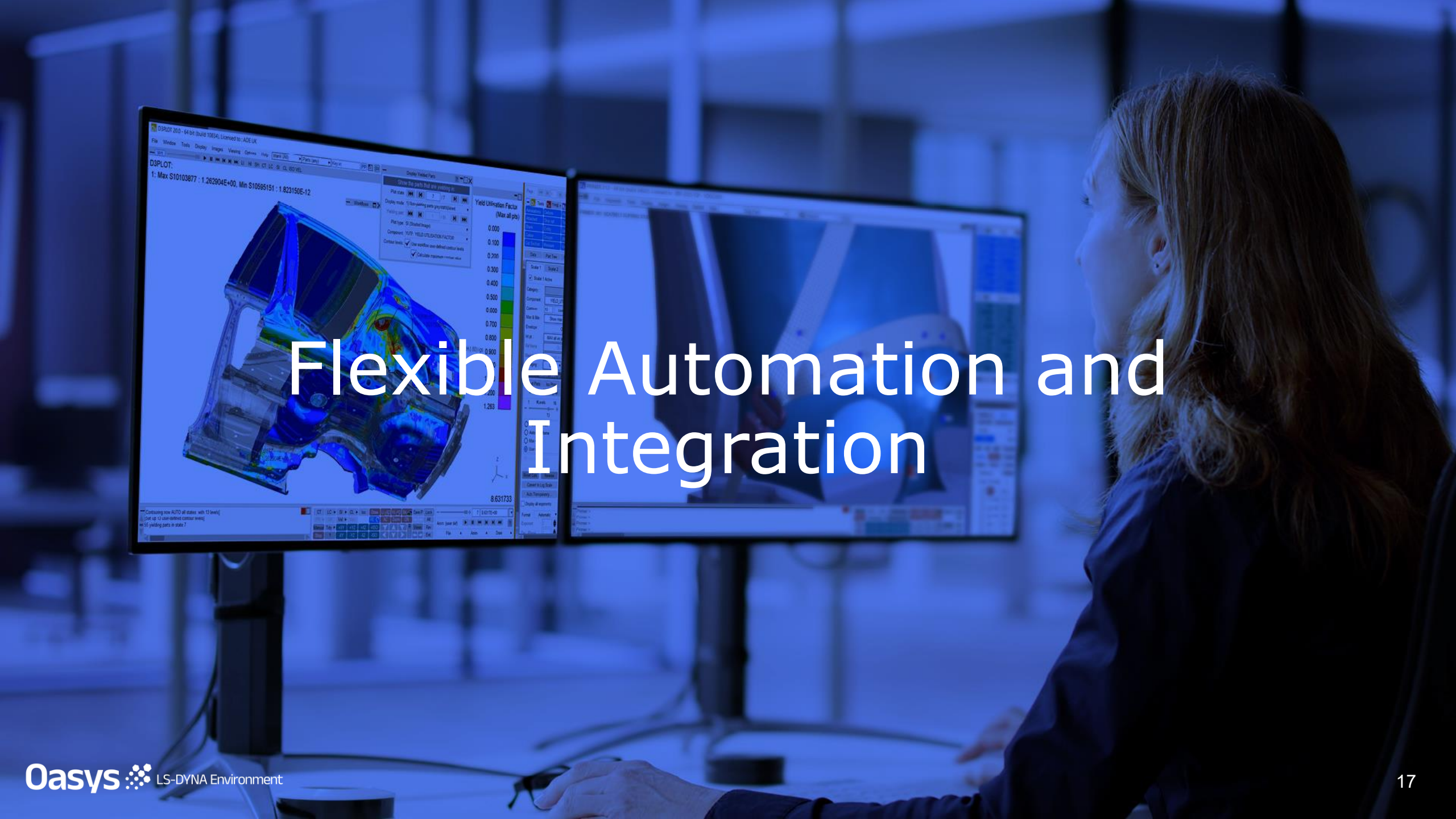
Pages can now be selected using the page name when adding graphs through **Dialogue Commands**.

Page Edit panel is also used for deleting pages.
Page number buttons can be toggled to select or deselect pages.
Clicking **Delete** deletes the selected pages.

Selecting **All** marks all the pages for deletion.
Selecting **None** clears all the page selections.

Pages can also be deleted in the Advanced Page Layout panel.
Right-clicking a page button opens a dropdown menu with the option to D**elete** the selected page.




Flexible Automation and Integration

JavaScript API

JavaScript API

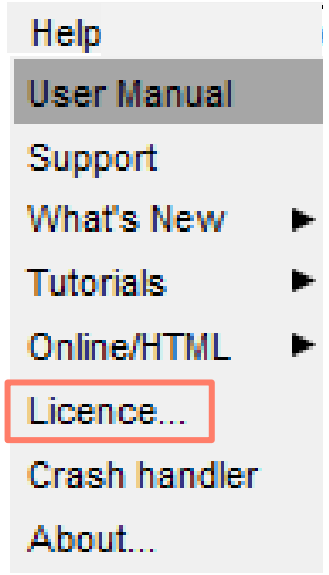
- There is a new Link class in the JavaScript API to enable the programs in the Oasys Suite to start and pass information to/from the other programs. It is the JavaScript equivalent of the user interactively pressing 'PRIMER' from T/HIS and then passing data between the programs.
  See the Link class in the JavaScript API documentation for more details.
- Global function THISLinkStatus() returns the status of T/HIS as either standalone or one of the three statuses when linked with D3PLOT - Constant.STANDALONE, Constant.DOCKED, Constant.MENUS_UNDOCKED, Constant.ALL_UNDOCKED.
- Page.MaxAllowable() returns the maximum allowable number of pages (this can differ between standalone T/HIS and T/HIS when it is open in the link).
- Graph.MaxAllowable() returns the maximum allowable number of graphs (this can differ between standalone T/HIS and T/HIS when it is open in the link).
- There are new functions Page.SetPageName(), Page.GetPageName(), Page.GetPageFromName(), Page.DeletePage() and Page.CreatePage().

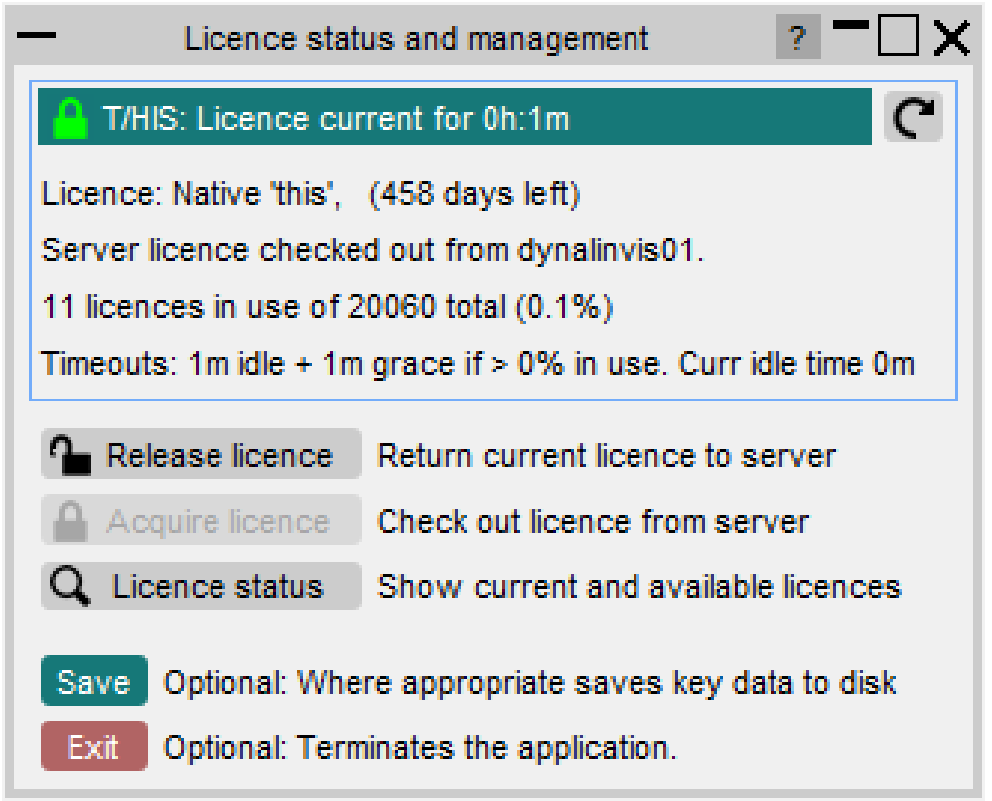
Other Developments and Preferences

Licence Manager

Licence Manager menu

- Oasys Suite 23.0 introduces a new Licence Manager window to display and control licensing.
  - Invoked from **[Help] Licence**
  - Displays current licence status
  - Interrogates the licence server to obtain overall licence usage data
  - Allows the user to release a licence temporarily
  - Manages the licence situation following “timeout”
  - Manages the licence situation after loss of connection with the licence server.



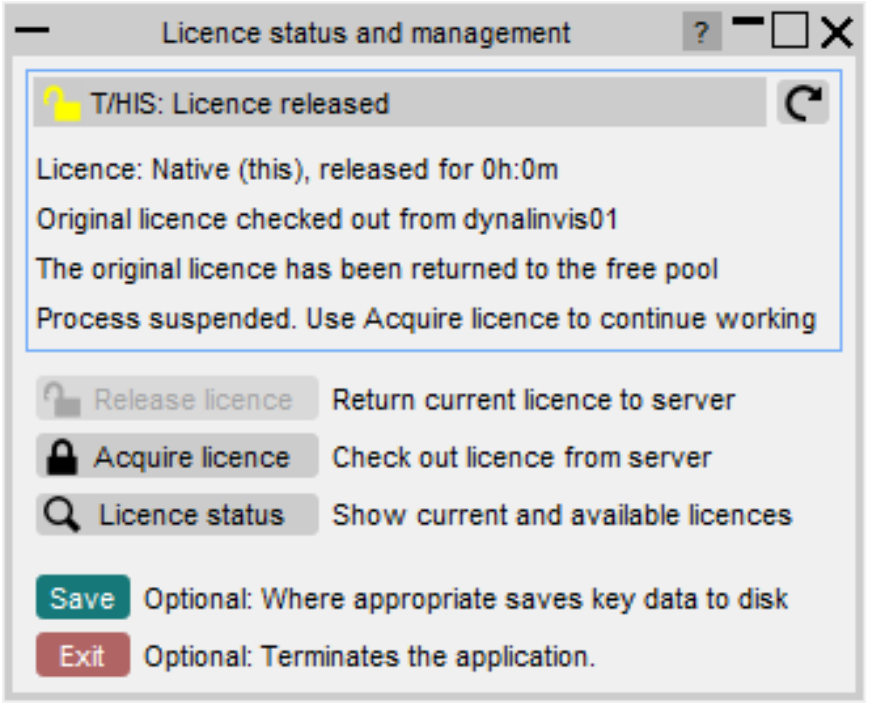


This shows the normal active licence status

Licence Manager menu

- Releasing a licence
  - **Release Licence** returns the current licence to the server's free pool.
  - The process is suspended, no data or work are lost.
  - The Licence Manager panel remains mapped in this state allowing to licence to be re-acquired at any time.

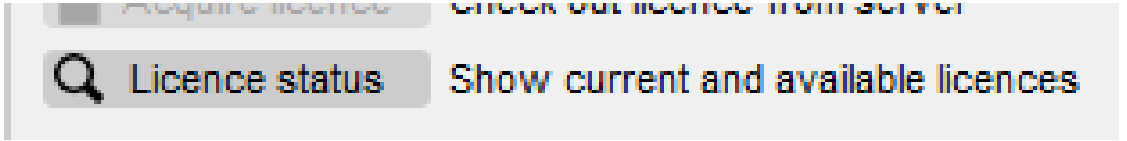
- Re-acquiring a licence
  - **Acquire licence** requests a new licence from the server. If successful, the process resumes.
  - If no licences are available the Licence manager retries at 30 second intervals until one becomes free, whereupon the process resumes. It remains suspended until this occurs.

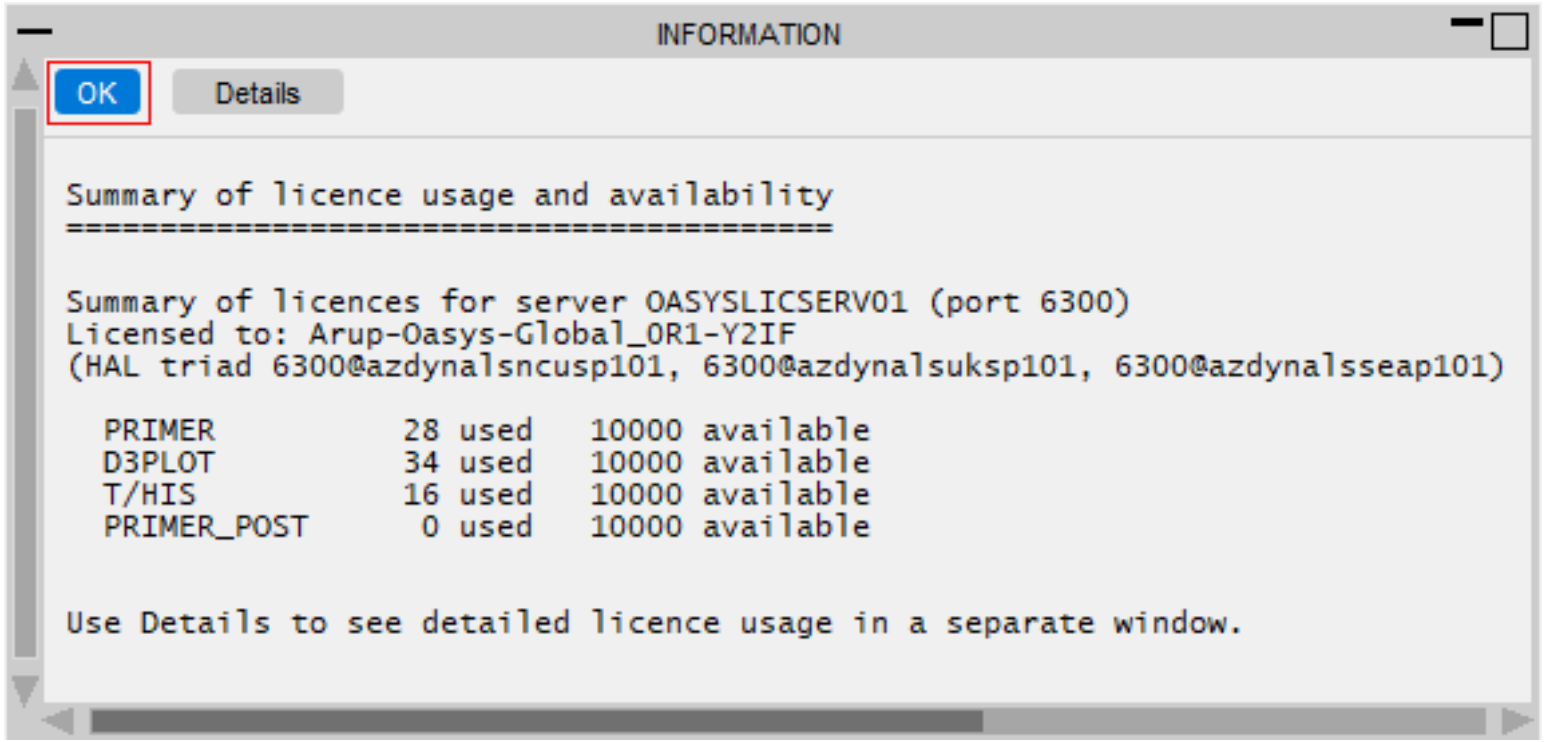


This shows the "licence released" state

Licence Manager menu

- Licence status
  - Obtains information about overall licence use.

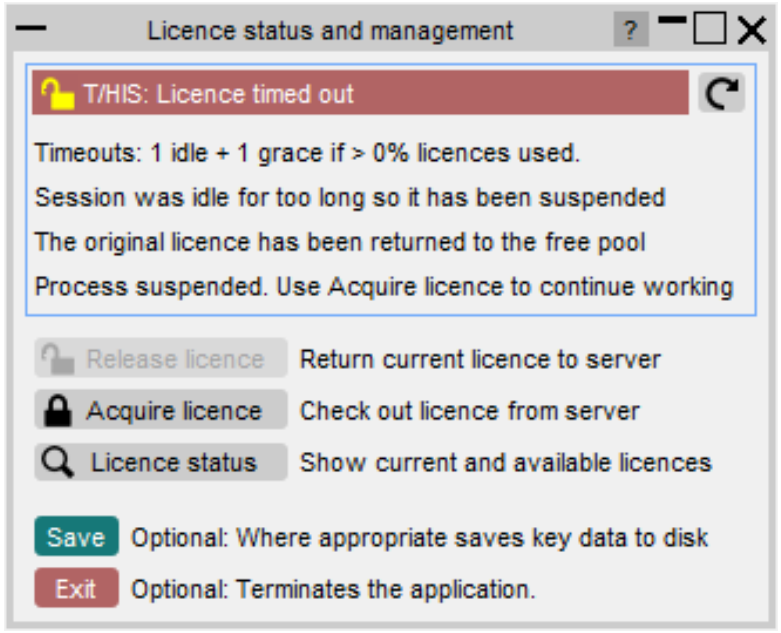




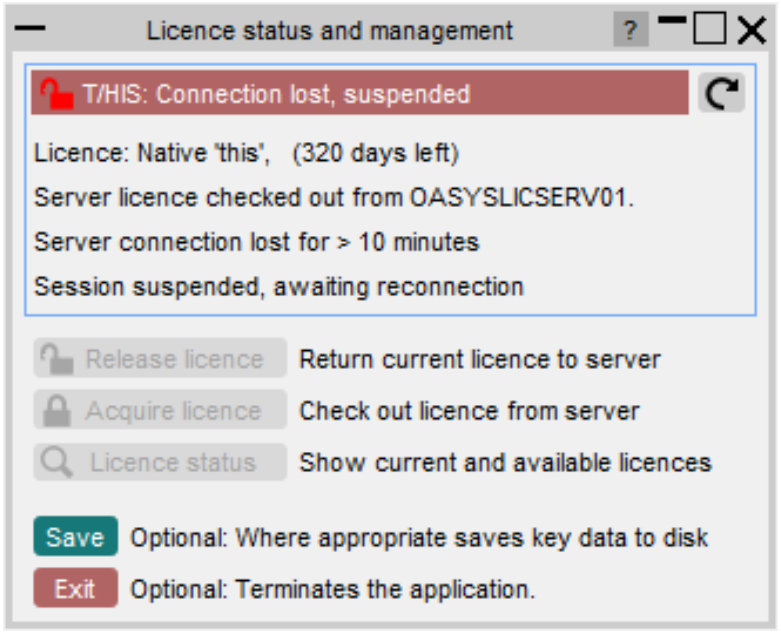
- **Details** interrogates the licence server using the lmxendutil utility to obtain detailed listings of all individual licence use.
- This information is written to a separate terminal window as it can be quite lengthy.

Licence Manager menu

- Managing the licence after “timeout” or loss of connection with the licence server.



Process suspended by “timeout” following a sustained idle period.



Process suspended after >10 mins loss of server connection.

- In both these situations the Licence Manager displays the current status. On the left **Acquire Licence** will resume the session, on the right it will resume automatically once connection with the licence server has been restored.

Timeout Control

Timeout Control

- A configurable time limit determines when PRIMER, D3PLOT, T/HIS and REPORTER shut down automatically.
- The duration is controlled through the OASYS_TIMEOUT environment variable.
- Once this threshold is reached, the program exits in a safe manner.

New Preferences

New Preferences

Preference	Description
`this*max_graphs_per_page`	Maximum number of graphs permitted on a page

Contact us

Oasys
LS-DYNA Environment

Global / UK
T: +44 121 213 3399
E: dyna.support@arup.com

India
T: +91 40 69019723 / 98
E: india.support@arup.com

China
T: +86 21 3118 8875
E: china.support@arup.com

USA
T: +1 415 940 0959
E: us.support@arup.com

Subscribe to
our newsletter:

Follow us on:

@Oasys LS-DYNA Environment

@Oasys LS-DYNA Environment

@奥艾司

@Oasys 奥艾司

www.oasys-software.com/dyna/