SALOME 6.5.0

Minor release announcement

May 2012

GENERAL INFORMATION

CEA/DEN, EDF R&D and OPEN CASCADE are pleased to announce SALOME version 6.5.0. It is a minor release that contains the results of planned major and minor improvements and bug fixes against SALOME version 6.4.0 released in December 2011.

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NEW FEATURES AND IMPROVEMENTS

PREREQUISITES CHANGES

Important: SALOME 6.5.0 is based on the patched version of Open CASCADE Technology 6.5.3.

The table below provides the full list of pre-requisite products used with SALOME 6.5.0. The table shows the differences of 3rd-party product versions used for SALOME 6.5.0 and 6.4.0; the changes are highlighted in bold.

Product	SALOME 6.4.0	SALOME 6.5.0
Boost	1.46.1	**1.49.0**
Cgns	3.1.3	**3.1.3-4**
CMake	2.8.4	**2.8.7**
Docutils	0.7.0	**0.8.1**
Doxygen	1.7.3	**1.8.0**[1]
Expat	2.0.1	2.0.1
Freeimage	3.14.1	3.14.1
freetype	2.3.7	2.3.7
Ftgl	2.1.2	2.1.2
gl2ps	1.3.5	1.3.5
Graphviz	2.26.3	**2.28.0**
HDF5	1.8.4	**1.8.8**
Homard	10.3	**10.4**
Intel® Threading Building Blocks	3.0	3.0
Jinja2	2.5.5	**2.6**
LAPACK	3.3.0	3.3.0
libBatch	1.4.0	**1.5.0**
Libxml2	2.7.8	2.7.8[2]
Med	3.0.4	**3.0.5**
METIS	4.0	4.0
NETGEN	4.9.13	4.9.13
NumPy	1.5.1	1.5.1
omniORB	4.1.5	**4.1.6**
omniORBpy	3.5	**3.6**
omniNotify	2.1	2.1
Open CASCADE Technology	6.5.2	**6.5.3**[3]

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[1] Patched for SALOME (bugs in doc tree javascript)

[2] Patched for SALOME (bug for 64bit platforms)

[3] Patched for SALOME

Product	SALOME 6.4.0	SALOME 6.5.0
ParaView	3.10.1	**3.14.0**[4]
Pygments	1.4	**1.5**
PyQt	4.7.3	**4.9.1**[5]
Python	2.6.6	2.6.6
QScintilla	2.4.3	**2.6.1**[6]
Qt	4.6.3	4.6.3
Qwt	5.2.1	5.2.1
Scotch	5.1.11	5.1.11
Setuptools	0.6c11	0.6c11
SIP	4.10.2	**4.13.2**
Sphinx	1.0.7	**1.1.3**
SWIG	1.3.40	1.3.40[7]
Tcl	8.5.8	8.5.8
Tk	8.5.8	8.5.8
TclX	8.4.0	8.4.0
VTK[8]	5.8.0	5.8.0
Xdata	0.9.2	**0.9.3**
Distene Blsurf[9]	3.1	3.1
Distene TetMesh-GHS3D[10]	4.2 + 4.1	4.2 + 4.1[11]
Distene Hexotic[12]	1.0	1.0

For additional information about pre-requisite products and SALOME modules dependencies refer to the paragraph "Supported Linux distributions and pre-requisites" below.

LICENSE RESTRICTIONS

▪ Hereby we explicitly declare that PyQt 4 toolkit (Riverbank Computing Ltd) is distributed under the terms of GPL license.

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[4] Patched (fix problems in build procedure with plug-ins and documentation)

[5] Patched (fix issues of incompatibility with Qt 4.6.3)

[6] Patched (fix issues of incompatibility with Qt 4.6.3)

[7] SWIG 1.3.40 does not compile at latest versions of gcc (4.6); instead version 2.0.4 can be used

[8] Included to the ParaView distribution

[9] Commercial product, requires license for using in runtime

[10] Commercial product, requires license for using in runtime

[11] Version 4.1 is required to prevent bug in ghs3d 4.2

[12] Commercial product, requires license for using in runtime

S A L O M E   P l a t f o r m

Bring to Front

Bring to Front context menu option allows to bring to the viewer foreground the selected geometrical object. Such objects are always drawn above all other objects, not depending on the current view point.

In the first picture the box has been visually superimposed over the cylinder using Bring to front option.
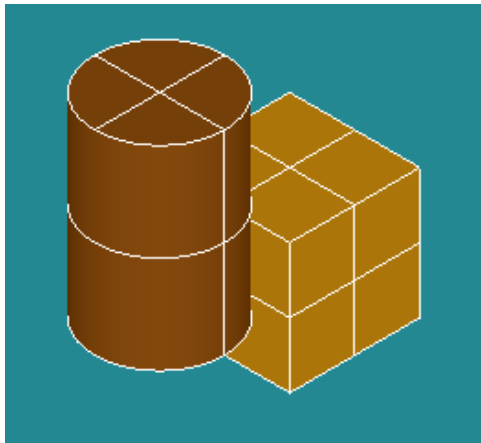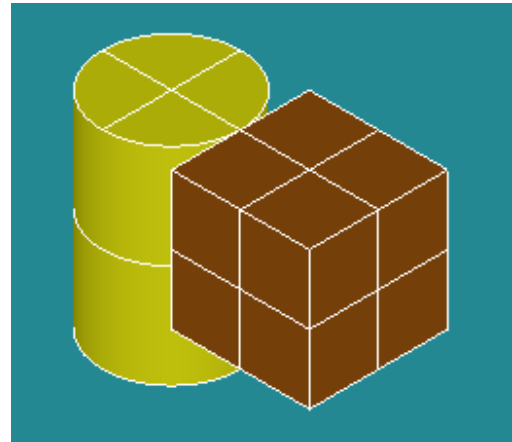
In the second picture the box has been returned to its normal state using **Clear Top Level State** context menu command, and the cylinder has been brought to front instead.

This operation is only supported for OCC 3D viewer.

New measurement: Detect Self-intersections

Detect Self-intersections operation of Geometry module checks the topology of the selected shape to detect self-intersections. The operation reports all pairs of intersecting sub-shapes, if there are any.

This operation is available in both GUI (menu *Operations → Detect Self-intersections*) and script modes. It is helpful, in particular, to detect cases when Partition operation cannot be applied (since it does not work well with self-intersected shapes).

S A L O M E   P l a t f o r m
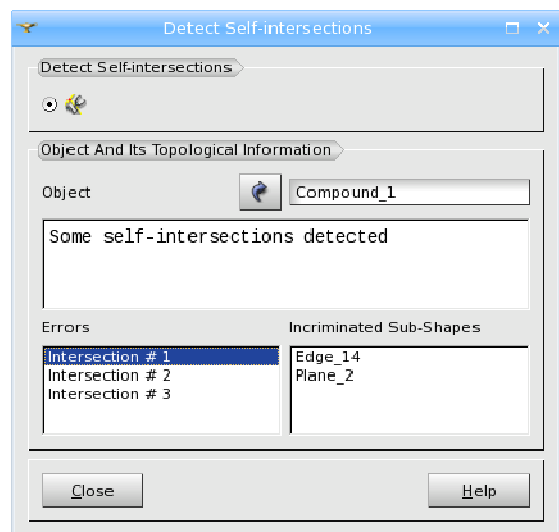
Extruded Boss

Extruded boss operation allows to easily adding material on a **solid** by extruding a profile along the normal to its plane.

This operation is available via the main menu *Operations → Extruded Boss*.

In the corresponding dialog window it is necessary to indicate the Initial shape, the profile of extrusion, which can be any closed edge or wire of the shape or a 2D closed sketch drawn on its planar face.

It is also possible to change the height, draft angle (in degrees) and direction of the extrusion.
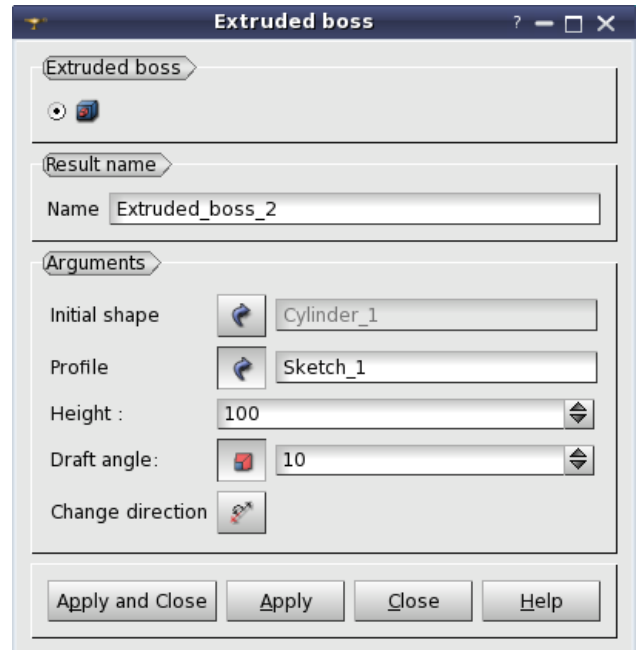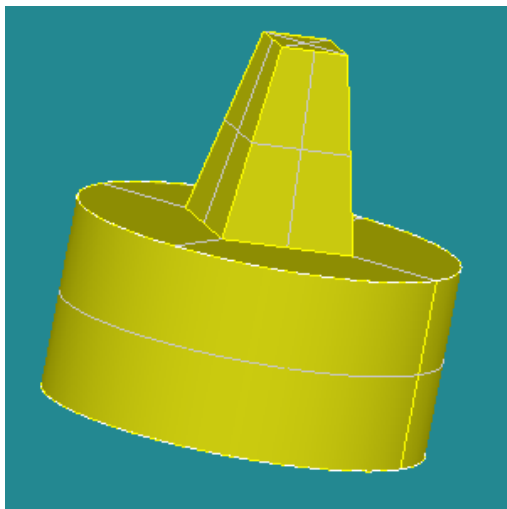
In the image: the pyramid has been created from a rectangle on the face of a cylinder.

TUI command for this operation:
```
geompy.MakeExtrudedBoss(InitShape, Profile, Height,[Angle])
```

Extruded Cut

Extruded Cut operation is a reverse of Extruded Boss – it removes material from a **solid** by extruding a profile along the normal to its plane. This operation is available via the main menu *Operations → Extruded Cut.*
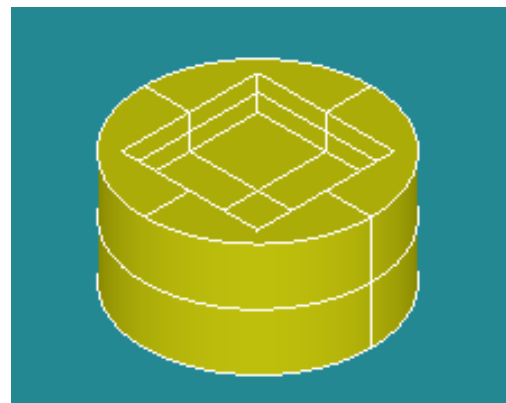
TUI command for this operation:
```
geompy.MakeExtrudedCut(InitShape, Profile, Height,[Angle])
```

Material properties
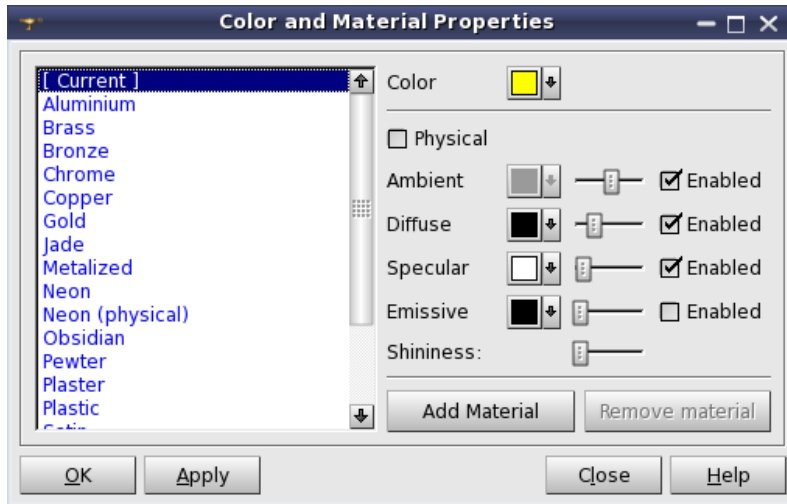
It is now possible to define material properties for a certain object.

Material properties item can be chosen from the context menu of the selected object

This dialog enables to change the following:

- **Ambient** color and coefficient;
- **Diffuse** color and coefficient;
- **Specular** color and coefficient;
- **Emissive** color and coefficient, simulating light originating from the object;
- **Shininess**.

A special checkbox allows defining a material as **Physical**. Physical materials (gold, aluminum, bronze, etc.) do not allow color attributes modification. Artificial materials (plastic, satin, metal, etc.) allow it.

Add Material button creates a new user material. It is also created at the attempt to edit a Global material.

Note: this functionality related to the material properties is experimental and might work not as expected.

Sketcher improvements

Sketch on a face

It is now possible to draw a sketch on a planar face by selecting directly this face in the view. The sketch will be drawn in the local coordinate system of this face.

Rectangles

It is now possible to draw a rectangle by two points via the sketcher. A rectangle constructor has been added besides the segment and arc constructors.

Drawing in the view

For the parts of a sketch which are drawn using a point as parameter the point can be picked up directly in the view. It is also possible to adjust the position by clicking and sliding the mouse in the view.

S A L O M E   P l a t f o r m
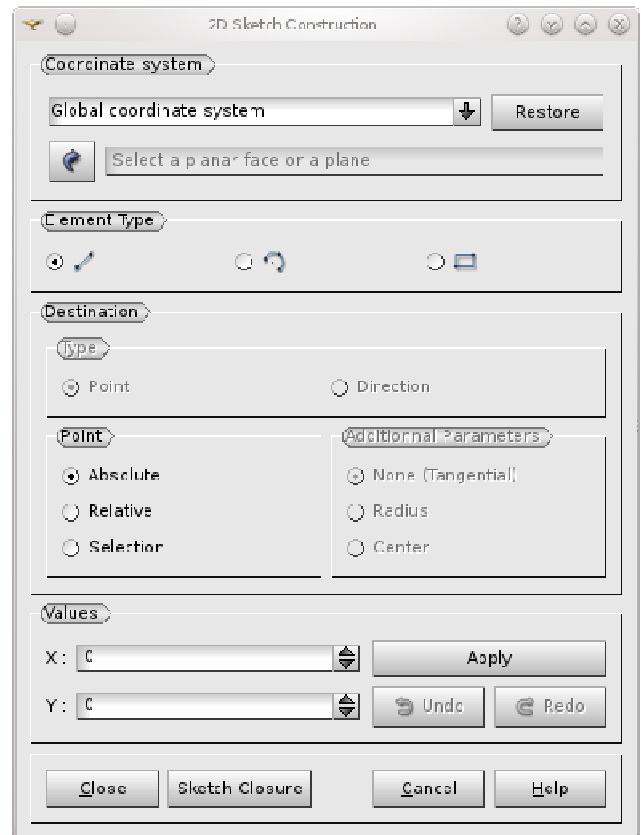
Gradient background

It has become possible to show the background colored according to two colors and the gradient type specified in the dialog box.

The following gradient types are available:

Single Color
Horizontal gradient
Vertical gradient
First diagonal gradient
Second diagonal gradient
First corner gradient
Second corner gradient
Third corner gradient
Fourth corner gradient

Vertical gradient background

Custom Background Image

It has become possible to insert an arbitrary image as viewer background.

BMP, GIF, PIX, XWD, RGB and RS image formats are supported.

It is also possible to choose from center, tile and stretch image location.

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Import a picture in the 3D view

In Geometry module, it is possible to display a picture in the 3D view (OCC viewer only). The classical pan, zoom operations are available on it. This feature can be useful to draw a sketch on top of a scanned engineering drawing.

Shape recognition (experimental)

The newly introduced contour and corner detection tools (using optional OpenCV library) can create edges and points from an imported picture. For example, it can be used to automatically draw the cost contours from a nautical chart.
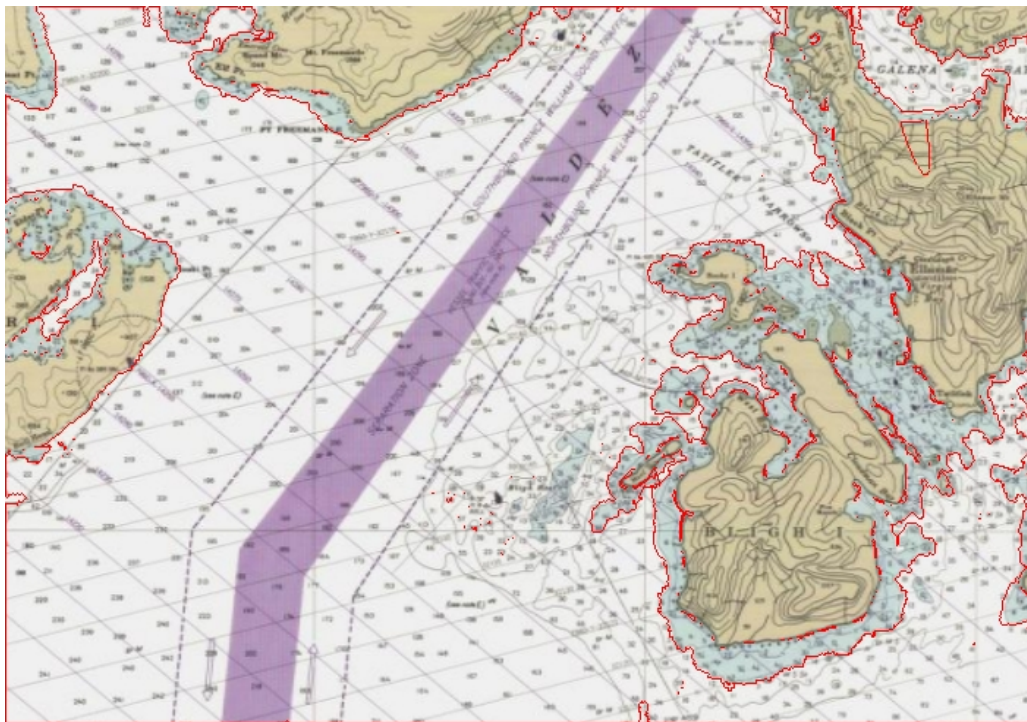
Example of automatic cost contour drawing

Note:

- By default SALOME Geometry module is not configured with OpenCV library. It is necessary to install OpenCV library, and then to reconfigure and rebuild Geometry module to switch this functionality on.

Custom Mesh Line Width
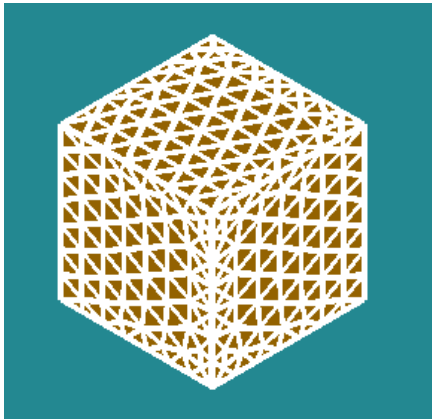
It has become possible to change the width of lines used for mesh presentation.

In the example the line width has been set to maximum = 5.

Detect Double Elements

Controls and filters for the detection of double nodes, edges, faces and volumes have been added.

In the image there is an example of a face with double cells.
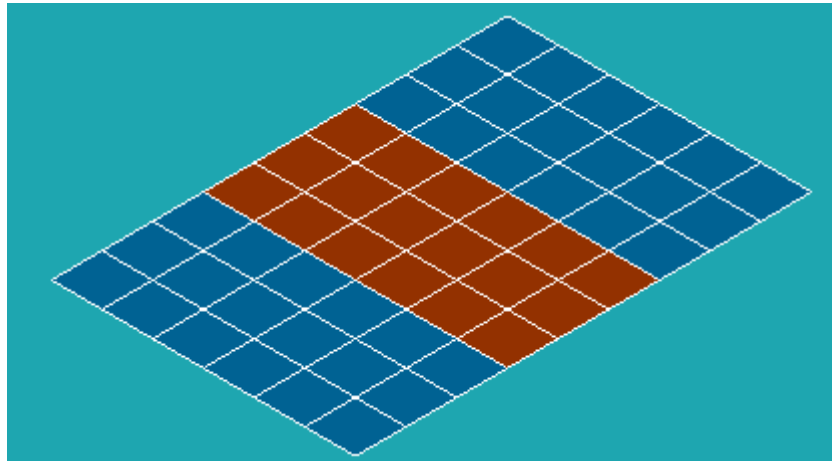
Hexagonal Prism

It has become possible to visualize hexagonal prism cells MED_OCTA12 imported from MED files in Mesh and Post-Pro modules
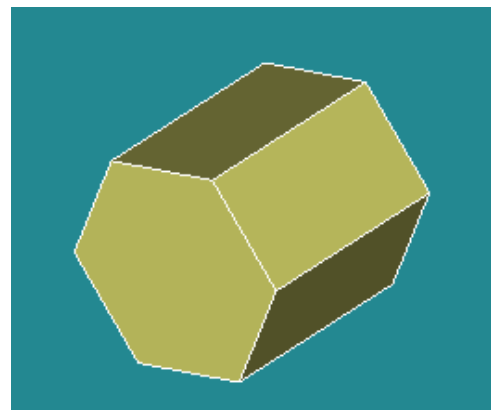
PARAVIS IMPROVEMENTS

General Information

SALOME version 6.5.0 is based on the version 3.14 of the ParaView software.

The improvements presented in this paragraph are developed by EDF and do not reflect the improvements done for the version 3.14 of ParaView.

All the bugs fixed and improvements made in ParaView can be consulted at the following address: http://paraview.org/Wiki/ParaView_Release_Notes#ParaView_3.14.1_.28April_2012.29.

Scatter Plot Matrix

The new Plot-Matrix-View (PMV) allows visualization of multiple dimensions of your data in one compact form. It also allows you to spot patterns in the small scatter plots, change focus to those plots of interest and perform basic selection. It is still at an early stage, but the basic features should already be useable, including iterative selection for all charts (add, remove and toggle selections with Ctrl or Shift modifiers on mouse actions too).
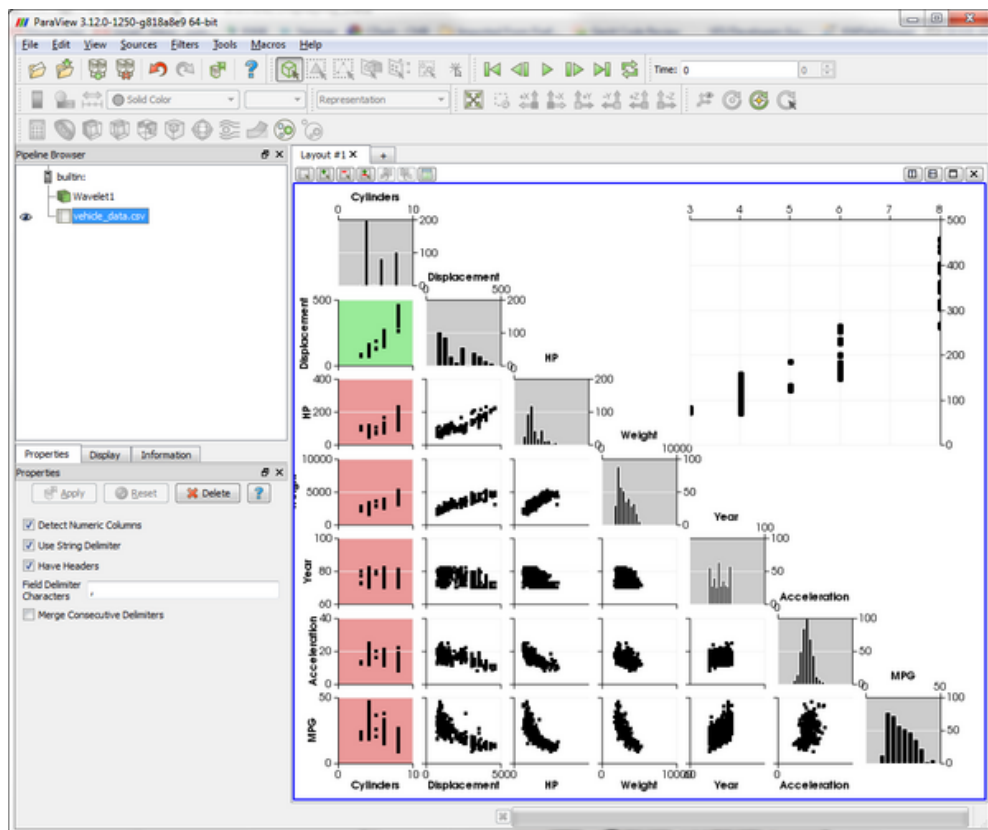
The PMV can be used to manage the array of plots and the vtkTable mapping of columns to input of the charts. Any filters or sources with an output of vtkTable type should be able to use the view type to display their output. The PMV includes a scatter plot, which consists of charts generated by plotting all vtkTable columns against each other, bar charts (histograms) of vtkTable columns, and an active plot which shows the active chart that is selected in the scatter plot. The view offers new selection interactions to the charts, which will be described below in details.

As with the other view types, what is displayed in the active PMV is displayed by and controllable with the eye icons in the Pipeline Browser panel. Like XY chart views, the PMVs are also client-side views i.e. they deliver the data to be plotted to the client.

Query Data

Selection is a mechanism in ParaViS for sub-setting and focusing on particular elements in the dataset. Different views provide different mechanisms for selecting elements, for example, you can select visible cells or points using the 3D View. Another mechanism for creating selections is by specifying a selection criterion. For example, suppose that you want to select all cells where the pressure is specified by certain threshold value. In such cases, you can use the Find Data dialog. The Find Data dialog performs a dual role: it does not only enable specifying the selection criteria but also shows the details on selected elements in a spread sheet. This makes it easier to inspect the selected elements.

To open the Find Data dialog, go to *Edit →Find Data* menu.
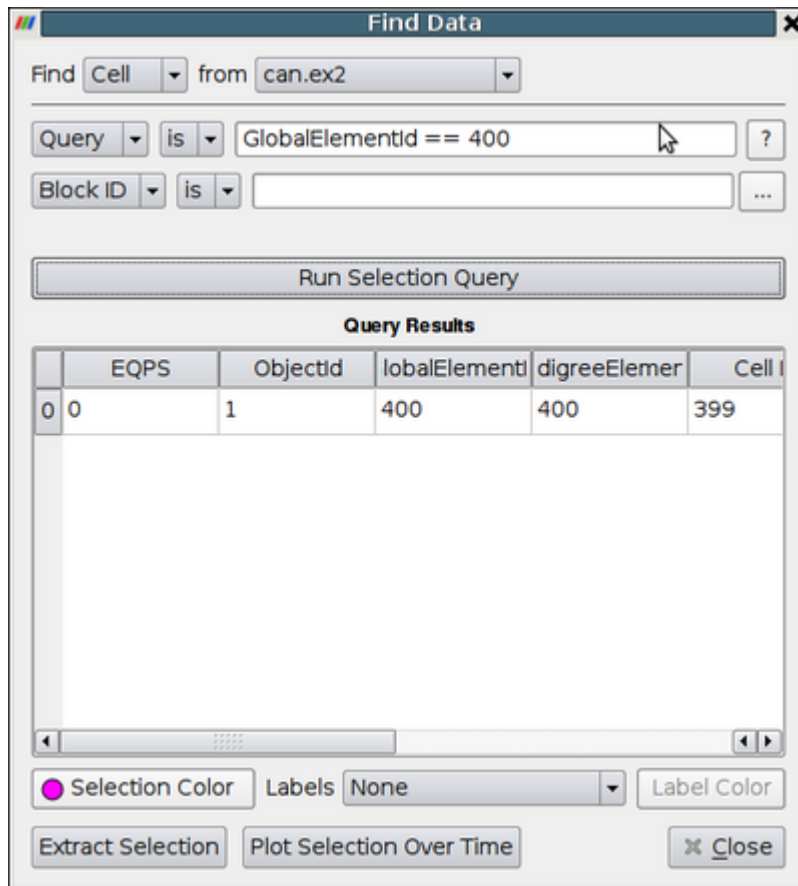
This feature is useful when you run into situations where you want to know the cell or the point at which a certain condition happens.

For example:

- o   What are the cells at which PRESSURE >= 12?
- o   What are the points with TEMP values in the range (12, 133)?
- o   Locate the cell at ID 122, in Block 2.

Collaboration and Multi-Servers

This release also includes two new experimental features:

- o   Collaboration: adds support to connect multiple clients to the same server (pvserver) for collaborative visualization.
- o   Multi-Servers: this adds support to the ParaView client to connect to multiple remote servers at the same time to build separate pipelines on the connected servers using the same client.

Note that these are both experimental features and should be considered as 'alpha'.

Python Animation Track

A fully programmable python track has been added. The user has to provide the "tick(time)" method in python, which will be called when the cue is active.

Extract Surface

Extract a 2D boundary surface using neighbour relations to eliminate internal faces.

If the input is an unstructured grid with nonlinear faces, this parameter determines how many times the face is subdivided into linear faces. If 0, the output is the equivalent of its linear counterpart (and the midpoints determining the nonlinear interpolation are discarded). If 1, the nonlinear face is triangulated based on the midpoints. If greater than 1, the triangulated pieces are recursively subdivided to reach the desired subdivision. Setting parameter to the value greater than 1 may cause some point data to be not passed even if no quadratic faces exist. This option has no effect if the input is not an unstructured grid.

HOMARD IMPROVEMENTS

- o   Conformal refinement for prismatic meshes.
- o   The pyramids are authorized if not refined.
- o   Geometrical zones for both refinement and unrefinement.
- o   Lower bound for the diameter of the refined meshes.
- o   Fields over the Gauss points: new interpolation scheme.

LIBBATCH AND JOBMANABER IMPROVEMENTS

SALOME 6.5.0 is based on libBatch version 1.5.0. libBatch is a general purpose batch processing management library developed by EDF.

The following changes have been done in libBatch 1.5.0 and JOBMANAGER 6.5.0:

- o   Add support for VISHNU batch manager.
- o   Add possibility to submit a job without a time limit (PAL #1964).
- o   Add new parameter to identify a resource as a batch resource (cluster).
- o   Add new parameter "working_directory" for resources. If a resource defines a working directory, the value is used as a base directory for a job remote working directory (PAL #2078).
- o   Error messages from Slurm submission are now displayed properly. (fix bug PAL #2089).

YACS AND YACSGEN IMPROVEMENTS

Changes in YACS

- o   When YACS schemas are automatically generated and loaded in YACS GUI, a new argument in loadSchema method enables an automatic arrangement of nodes.
- o   Sequences of Integer, Boolean, Double and String vectors are now supported for input/output ports in YACS.

Changes in YACSGEN:

- o   Hxx2Salome integration in YACSGEN has been done.

MED MODULE CHANGE LOG

ParaMEDMEM

MEDPartitionner library has been added into MED. This library allows to split meshes and fields into several subparts using graph partitionners parmetis and/or metis and/or scotch. This library is depending on MEDCoupling/MEDLoader libraries. This library will replace MEDSPLITTER library in Salome 7.

MEDCoupling

Improvements

- o   Computation of slices of 3D mesh MEDCouplingUMesh::buildSlice3D
- o   Computation of intersection of 2D meshes MEDCouplingUMesh::Intersect2Dmeshes
- o   MEDCouplingUMesh::tessellate2D to convert 2D quadratic cells (TRIA6 or QUAD8) into tesselated polygon for nice rendering
- o   MEDCouplingUMesh::getCellContainingPoint   for   1D   mesh   and MEDCouplingFieldDouble::getValueOn for 1D underlying mesh
- o   MEDCouplingUMesh::getCellIdsCrossingPlane
- o   DataArrayDouble::findCommonTuplues
- o   DataArrayInt::reverse, DataArrayDouble::reverse
- o   DataArrayDouble::abs, DataArrayInt::abs
- o   MEDCouplingUMesh::getNodeIdsInUse

API modifications

- o   C++ API of MEDCouplingUMesh::convertToPolyTypes
- o   C++ API of MEDCouplingPointSet::findCommonNodes
- o   API   modification   MEDFileMesh::addGrpOnFamily   method   becomes MEDFileMesh::addFamilyOnGrp
- o   Python API of MEDCouplingMesh::getCellsContainingPoint
- o   Python API of MEDCouplingPointSet::getNodeIdsNearPoint
- o   Python API of MEDCouplingPointSet::findNodesOnLine
- o   Python API of MEDCouplingPointSet::findNodesOnPlane
- o   Python API of MEDCouplingPointSet::findBoundaryNodes
- o   Python API of MEDCouplingPointSet::getCellsInBoundingBox
- o   Python API of MEDCouplingUMesh::checkButterflyCells
- o   Python API of MEDCouplingUMesh::findAndCorrectBadOriented3DextrudedCells
- o   Python API of MEDCouplingUMesh::are2DcellsNotCorrectlyOriented
- o   Python API of MEDCouplingUMesh::arePolyhedronsNotCorrectlyOriented
- o   Python API of MEDCouplingField::getCellIdsHavingGaussLocalization

Bug corrections

- o   Link error when calling MEDCouplingMesh::writeVTK on a MEDCouplingUMesh instance
- o   MEDCouplingFieldDouble::normL1, the values returned follow the documentation
- o   MEDCouplingFieldDouble::normL2, the values returned follow the documentation
- o   MEDCouplingUMesh::buildDescending2 on 3D meshes
- o   MEDCouplingUMesh::fillCellIdsToKeepFromNodeIds with fullyin true

- o Impact on behaviour of MEDCouplingUMesh::buildPartOfMySelfNode and MEDCouplingUMesh::getCellIdsLyingOnNodes
- o MEDCouplingUMesh::are2DcellsNotCorrectlyOriented
- o MEDCouplingUMesh::orientCorrectly2Dcells

MEDLoader

Improvements
- o Read of INT32 fields in MEDFileField
- o MEDFileField1TS store data of field in a single array
- o MEDFileField1TS::getNonEmptyLevelsExt to allow to perform the match between field levels and mesh levels.
- o MEDFileMesh::createGroupOnAll
- o MEDFileMesh::keepFamIdsOnlyOnLevs
- o MEDFileUMesh::getGroupsOnASpecifiedLevel
- o Performance improvements on MED files with plenty of time steps

API modifications
- o MEDFileField1TS::getFieldSplitedByType, MEDFileFieldMultiTS::getFieldSplitedByType (linked with improvement on MEDFileField1TS that store data in a single array)
- o MEDFileMesh::addGrpOnFamily->MEDFileMesh::addFamilyOnGrp

Bug corrections
- o MEDFileUMesh::getCoords do not return a preincremented pointer in C++
- o MEDFileData::write on meshes and fields with option 2
- o Bug in MEDLoader class when reading a Field lying on more than one mesh

S A L O M E   P l a t f o r m

OTHER IMPROVEMENTS

- o Improvements for SALOME on clusters:
    - New option to launch SALOME servers with a simple fork instead of daemons (allows the batch manager to kill Salome processes).
    - Add internal protocols "pbsdsh" and "blaunch" to launch remote processes that can be controlled by the batch manager on PBS and LSF clusters.
- o The hard-coded dependencies on meshing plug-ins have been removed from Mesh module.
- o New display mode "Shading With Edges" is similar to the Shading mode but additionally shows the outline borders of the complex shapes.
- o "Delete Groups with Contents" operation can be activated from the context menu of a group.
- o The mechanism of postponed data loading has been implemented in Mesh module. This allows improving performance when operating with large studies.
- o Support of drag and drop in the Object browser has been introduced in SALOME. The functionality related to the drag and drop can be enabled in any SALOME module by means of the corresponding API. The example of the drag and drop functionality customization has been implemented in HELLO sample module.
- o New "Snapshot" python dump mode has been introduced in Mesh module. In this mode, the commands related to objects removed from the Study and the commands not influencing the final state of meshes are excluded from the script.
- o It has become possible to create 1D mesh from the selected nodes by Extrusion.
- o SALOME module integration tutorial has been improved and extended with example of Dump Python functionality implementation.
- o Documentation of TUI (Python API) of Geometry module has been improved.
- o It has become possible to draw error markers on the curve points in Plot2d viewer.
- o UNV mesh driver has been improved to read/write Coordinate system and Units.
- o Support of MED_QUAD9 and MED_HEXA27 mesh cells has been implemented in Post-Pro and Mesh modules.
- o Method GetAngle() has been changed to return the minimum angle between two lines, except for the case of two vectors, when the method takes into account vector directions.
- o It has become possible to normalize the Plot 2D viewer presentations of the 2d curves.
- o The width of edges and iso-lines has become customizable via popup menu commands assigned to objects. Default values for these attributes can be changed via preferences.

SALOME Platform

▣ BUG CORRECTIONS

GUI MODULE (IAPP)

20506	*Summary:* EDF 1064 PERF : Manipulating big amount of spheres in GUI Popup menu management has been improved to provide better performance when operating with big number of objects.
21463	*Summary:* [CEA 533] Highlighted object cannot be selected The behavior of highlighting has been improved to allow selection of highlighted objects.
21536	*Summary:* [CEA 553] Some migration bug from salome 5 to salome 6 Fixed problem of crash in Object browser when synchronous update mechanism is used in "light" module.

KERNEL MODULE

21172	*Summary:* EDF 1782 ALL: File or directory with accents in French mode Fixed problems with saving files on French locale.
21548	*Summary:* [CEA 555]: Problem with `--shutdown-servers=1` option Regression in `killSalomeWithPort()` function has been fixed.

GEOM MODULE

20750	*Summary:* EDF 1296 GEOM: Naming during STEP import Additional specific cases of the shapes naming have been processed,
21110	*Summary:* EDF 1714 GEOM: Low efficiency of the explode compared with "create a vertex on curve" "Explode" dialog box have been improved to avoid repeating exploding for sub-shapes if selected main shape is not changed.
21191	*Summary:* EDF 1628 SMESH: Detection of close but not sewed edges Fixed several bugs of GlueEdges algorithm.
21263	*Summary:* EDF 1868: Several use cases fail (regressions) Fixed problem of MakeSection() function in OCCT 6.5.3.
21350	*Summary:* EDF 1948 GEOM: Export IGES 5.3 impossible It has become possible to export standalone vertices, edges and wires in IGES 5.3 format .

21393	*Summary:* EDF 1989 GEOM: Result of `MakeCut` contains extra vertices `MakeCut` operation has been improved to provide correct results. The fix for this problem has been made in issue OCC22771.
21415	*Summary:* EDF GEOM: Scale along X,Y,Z on sphere does not work Fixed OCCT problem of scaling shape with different scale factors along X Y Z axes.
21423	*Summary:* EDF 2013 GEOM: MakeScaleAlongAxes does not work Fixed OCCT problem of scaling shape with different scale factors along X Y Z axes.
21425	*Summary:* EDF 2020 GEOM: Accepted object types in "fillet 2D" and "fillet 3D" It has become possible to use Fillet 2D algorithm on shells.
21434	*Summary:* EDF GEOM: Boolean operations between two cylinders with orthogonal axis generate a shape with big vertex tolerance The fix for this problem has been made in issue OCC22967. Boolean operations algorithm has been improved.
21435	*Summary:* EDF 2023 GEOM: Weird behavior when loading a python script `MakeFace` function has been improved to stabilize the order of edges in a face.
21453	*Summary:* EDF GEOM: `CheckAndImprove` operation gives a bad result (regression) A problem in `CheckAndImprove` functionality has been fixed to improve Partition algorithm.
21454	*Summary:* [CEA] non regression test fails : problem with group creation A problem with group creation has been fixed in `GetShapesOnCylinder` functionality.
21456	*Summary:* [CEA] Problem with face creation A regression has been eliminated in `MakeFaceWires` algorithm to improve face creation.
21462	*Summary:* [CEA 532] Type problem The problem with detection of polyhedrons has been fixed in `KindOfShape()` functionality corresponding to "What Is" GUI dialog.
21465	*Summary:* EDF 2067 GEOM: Extrusion along a path leads to a self-intersected shape A problem in Glue Faces algorithm, which in some cases caused invalid result of `MakePipe`, has been fixed.
21466	*Summary:* [CEA 535] Healing no effect, Glue faces no effect `RemoveExtraEdges` function has been improved to provide correct results.
21467	*Summary:* [CEA] Failing partition The fix for this problem has been made in issue OCC22923. Partition procedure has been improved by adding methods indicating if a point belongs to a degenerated surface boundary.

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21485	*Summary:* EDF 326 GEOM: A non-regression test fails in `MakeFaceWires` A regression in `MakeFaceWires` algorithm has been eliminated.
21486	*Summary:* EDF GEOM: Non regression test fails (`MakePartition`) `GEOMAlgo_Builder` has been fixed to improve Partition algorithm.
21492	*Summary:* EDF 2086 GEOM: Non null min distance between superposed objects Fixed OCCT problem with calculating distance between objects when a line shape intersects a cylinder.
21501	*Summary:* [CEA] Non regression test fails on MakePartition A problem with partition algorithm has been fixed in `GEOMAlgo_BuilderSolid.cxx`
21514	*Summary:* EDF GEOM: Partition failure A problem with partition algorithm has been fixed in `GEOMAlgo_WESCorrector.cxx`
21516	*Summary:* [CEA] internal test fails on Mandriva 2010 32bits Problem of Partition with generating of an extra shell has been fixed with OCCT6.5.3.
21532	*Summary:* EDF 2202 GEOM: Problem when restoring groups containing a single shape `GetInPlace` and correspondingly `Restore[Given]SubShapes` operations have been modified to take into account the type of restored sub-shapes. So a group is always restored as a group now.
21533	*Summary:* [CEA] Internal test fails Fixed regression of Partition algorithm.
21534	*Summary:* [CEA] Non regression test fails The problem with tool objects (and in particular `PipeTShape`) in partition algorithm has been fixed.
21535	*Summary:* [CEA] Internal test fails : partition problem Fixed regression of Partition algorithm.
21550	*Summary:* EDF 1572 GEOM : Regression, a test script fails in a cut operation Fixed regression in PipeTShape algorithm.
21555	*Summary:* EDF GEOM : Bug in sweep surface creation with extrusion along a path The algorithm of edges and wires extrusion has been corrected in "Extrusion along a path" functionality.
21561	*Summary:* EDF 2184 GEOM: Group with second shape restriction The algorithm of group creation with "Geometrical Parts of the Second Shape" option has been corrected.

21568	*Summary:* EDF GEOM: PipeTShape with Fillet and prepared for hexa mesh cannot be built Fixed regression in PipeTShape algorithm.
21571	*Summary:* EDF GEOM: standard GEOM test fails The test script has been updated according to the latest changes in GEOM module.
21580	*Summary:* GEOM EDF: SetColor does not work Fixed regression caused by implementation of material properties.
21581	*Summary:* EDF GEOM: Crash in an application with GEOM only and auto-create option for trihedron The problem with SIGSEGV arising at any GEOM object creation if SALOME is launched with GEOM module only and active Auto-create Origin and Base Vectors option has been fixed.

SMESH MODULE

16202	*Summary:* EDF 465 SMESH : Propagation 1D on edges group The scripts testing Propagation functionality have been updated to correctly raise Exception.
20314	*Summary:* EDF 993 SMESH : Display bug with Volumes created by GHS3D Problem with displaying coincident 3D elements has been fixed
20436	*Summary:* EDF 1099 SMESH: performance regression from V4 to V5 Fixed regression caused by fix for issue 20314.
20749	*Summary:* EDF 1291 SMESH : Create 2D Mesh from 3D improvement Problem with displaying coincident 3D elements has been fixed
20944	*Summary:* EDF 1464 SMESH: detection of over-constrained elements Controls behavior has been modified to show only the entities corresponding to the chosen control, for example, 2D elements are automatically hidden when 3D controls are shown and restored in the view when controls are reset or a 2D control is active.
21096	*Summary:* EDF 1729 SMESH: Create a Projection 1D-2D algorithm Fixed problems of 1d-2d projection algorithm.
21439	*Summary:* EDF 2004 GEOM, SMESH: Dump of study gives bad Geom. Group and stops with `NameError` exception Python dump has been fixed to avoid creating invalid script after a mesh is removed from the study.
21440	*Summary:* EDF 2040 SMESH: Bug translation of a mesh Translation dialog behavior has been changed to avoid changing the mesh when the direction is specified by clicking nodes.

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21445	*Summary:* EDF 2049 SMESH: Transform hex mesh and then `ConvertToQuadratic` leads to very bas result The algorithm of conversion to quadratic mesh after mesh transformation has been improved.
21455	*Summary:* [CEA] internal test fails SMESH python script `ex16_cyl2complementary.py` has been corrected in accordance with changes in Geometry module.
21457	*Summary:* [CEA] import `check_mesh` stability Translation operation has been fixed to create properly oriented elements.
21468	*Summary:* EDF 2073 SMESH: Body-fitting algorithm creates elements in hole Body Fitting algorithm has been improved to avoid creating elements in holes.
21469	*Summary:* EDF 2074 SMESH: Body fitting algorithm leads to crash of Salome Body Fitting algorithm has been corrected to avoid possible crashes.
21472	*Summary:* EDF 2080 SMESH: Projection1D2D on a Voronoi structure fails Projection 1D2D meshing algorithm has been improved to work even if some edges of a face are already meshed.
21480	*Summary:* EDF 2084 SMESH: `SIGSEGV` when validating Netgen3D hypothesis Mesh destruction procedure has been improved to prevent access to a NULL mesh and eliminate memory leaks.
21484	*Summary:* EDF 2087 SMESH: Problem projection Projection 2D meshing algorithm has been improved to generate properly oriented faces.
21489	*Summary:* EDF 2096: Regression in Prism algorithm between 6.3.1 and 6.4.0 Regression of "Extrusion 3D" meshing algorithm has been fixed.
21490	*Summary:* EDF 2114: `RadialQuadrangle` fails The problem with hypotheses assigning in `RadialQuadrangle` algorithm has been fixed
21491	*Summary:* EDF 2094 SMESH: Error in the filters dump with Belong to GEOM" criterion `BelongToGeom` filter is now dumped to Python correctly.
21494	*Summary:* EDF 2118 SMESH: Projection2D hypothesis causes Unknown Exception It has become possible to set only one pair of vertices in "Source face" hypothesis of "Projection 2D" meshing algorithm if the source has only one vertex.
21508	*Summary:* EDF 2156: Crash when dumping a file after computation of a big mesh SALOME crash at study dump due to a high number of files open by NETGEN has been fixed.

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21509	*Summary:* EDF 2157: Error in the dump Python Dump procedure has been improved to correctly process a group created from all entities of a mesh.
21512	*Summary:* EDF 2163 SMESH, BLSURFPLUGIN, HEXOTICPLUGIN: crash when compute mesh after editing hypothesis The problem with possible crash when the mesh is recomputed after editing has been fixed.
21515	*Summary:* EDF 2169 SMESH: Groups not in Object Browser Groups created using Create Group from Geometry operation now appear in the Object Browser correctly.
21517	*Summary:* EDF 2170 SMESH: Bad filter dumped when HDF study from a previous Salome version is loaded Python Dump procedure has been improved to correctly process studies created using filters by earlier SALOME versions.
21520	*Summary:* EDF 522 SMESH: Regression in `MirrorMakeMesh` A regression in `Mesh.MirrorMakeMesh()` python command has been fixed.
21521	*Summary:* EDF 317 SMESH: Regression in `Wire_Discretisation LengthNearVertex` Regression of `LengthNearVertex()` python command has been fixed.
21522	*Summary:* EDF 573 SMESH: Regression in `RotationSweep` Regression of `RotationSweep()` python command has been fixed.
21526	*Summary:* EDF 1855 SMESH: Regression in the Radial Quadrangle hypothesis Regression of `Mesh.Quadrangle()` python command has been fixed.
21528	*Summary:* EDF 1817 SMESH: GHS3D quadratic mesh computation fails The problem with incorrect binding of nodes to geometry by GHS3Dplugin if the mesh has no geometry has been fixed.
21529	*Summary:* [CEA 551] ijk mesher does not mesh 2D quadrangular meshes Hexahedron(i,j,k) meshing algorithm has been improved to provide correct meshing without geometry.
21530	*Summary:* EDF 2176 SMESH: Projection 1D-2D with compounds Projection 1D-2D meshing algorithm has been modified to correctly project a compound which is the main shape.
21540	*Summary:* [CEA] Internal test fails : prisms A problem with Radial Prism meshing algorithm has been fixed.

21545	*Summary:* EDF 1222 SMESH: Regression, GHS3D meshes an already meshed volume The change of enumeration `SMESH.EntityType` defined in `SMESH_Mesh.idl` has been taken into account in the testing script.
21551	*Summary:* EDF 1452 SMESH: referenced object can be deleted Objects referred from outside of the module have been protected from deletion via GUI.
21554	*Summary:* [CEA] When using `runSalome` with only SMESH module some resources are missing Wrong resource IDs used for Show/Hide popup menu commands have been fixed.
21556	*Summary:* EDF 2222 SMESH: 3D mesh after projection impossible Projection 2D meshing algorithm improved to correctly position nodes on edges.
21557	*Summary:* EDF 2161 SMESH: Duplicate elements and nodes The option to get a group of new nodes created by "Duplicate Nodes" operation has been added.
21559	*Summary:* EDF 2175 SMESH: Hexa/Tetra mixed meshes Processing of sub-mesh priorities has been improved.
21562	*Summary:* EDF SMESH: clipping and delete mesh clipped leads to crash Possible crash during initialization of clipping planes dialog has been fixed.
21564	*Summary:* EDF 456 SMESH: Regression in projection 2D algorithm Regression in projection 2D algorithm has been fixed.
21567	*Summary:* [CEA] Missing resources for status bar messages SMESH resources for status bar messages have been added.

MED MODULE

21479	*Summary:* [CEA 537] `autoconf check_Med2.m4` Check Med product procedure has been corrected to properly set `ED2_LIBS_C_ONLY` variable.
21481	*Summary:* [CEA 538] autoconf and med 3 MED version number has been changed in all relative locations to correspond to the version change from MED2 to MED3.
21499	*Summary:* EDF 2146 MED: Problem with MEDSPLITTER when cutting a mesh with two elements The default method of partitioning by MEDSPLITTER is now correctly chosen.

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21576	*Summary:* EDF 2238 MED: MEDSPLITTER ends with SIGSEGV segmentation fault MEDSPLITTER has been fixed to avoid critical error.

VISU MODULE

21424	*Summary:* EDF 2010 VISU: Display of a field of type "ELNO" The custom Post-Pro filter algorithm that merges group with initial data from the med field has been adapted to work with ELNO fields.
21451	*Summary:* EDF 1831 VISU: "Set default" in Cut Planes is not taken into account Set default option in Cut Planes dialog has been modified to properly take change of value into account.
21504	*Summary:* EDF 2088 VISU: scalar map of the modulus of an ELGA field with 2 components Error of the calculation of the average value was corrected.
21518	*Summary:* EDF 2155 VISU: Gauss view on field not possible: either object cannot be built or Salome crashes VISU_Convertor has been updated to avoid problems with display of Gauss points.
21574	*Summary:* EDF 2234 VISU: Gauss presentation impossible with QUAD9 elements Support of quadratic elements with 9 nodes has been implemented in MEDWrapper package.

PARAVIS MODULE

21495	*Summary:* [CEA] Problem to visualize a field on a partial support The problem with use of incorrect cell IDs during VTK data set creation has been fixed.
21498	*Summary:* EDF 2140 PARAVIS: pvserver launch from PARAVIS The problem with the use of PARAVIS in the client-server mode with pvserver launched in a terminal in manual mode or from textual interface has been fixed.
21558	*Summary:* EDF 2164 PARAVIS: bad representation of a field for a particular time step MedReader has been improved to provide correct field representation if a field contains more than one time stamp.

NETGENPLUGIN MODULE

21510	*Summary:* [CEA] problem with netgen Regression entered by implementation of issue 0021308 has been fixed

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BLSURFPLUGIN MODULE

21500	*Summary:* EDF 2134 BLSURFPLUGIN: Error message when a problem occurs with the Distene license server

A warning message has been implemented in BLSURF and Hexotic plugins to inform that the meshing algorithm fails because the license server is not available. |

GHS3PLUGIN MODULE

21572	*Summary:* EDF 2229 GHS3DPLUGIN: Hole in a flattened hollowed sphere is meshed by GHS3D

GHS3D algorithm has been improved to mesh solids with holes correctly. |

PROCESSED AND ANSWERED QUERIES

20749	*Summary:* EDF 1291 SMESH : Create 2D Mesh from 3D improvement
20918	*Summary:* EDF 1447 SMESH: Mesh common borders
21013	*Summary:* [CEA] Problem with mesh visualization
21172	*Summary:* EDF 1782 ALL: File or directory with accents in French mode
21284	*Summary:* [CEA] Reload trace => no visualization
21444	*Summary:* [CEA 526] Failure of `setMesh` service.
21449	*Summary:* EDF 2050 SMESH: Only few methods are available on references of Mesh instances
21458	*Summary:* [CEA] Problem with `MakeGlueFaces`
21460	*Summary:* [CEA] non regression test fails
21471	*Summary:* EDF 2075 PARAVIS: a time step is not loaded
21488	*Summary:* [CEA 542] strange valgrind error on standard 6.4.0 SALOME installation
21496	*Summary:* [CEA 544] Visualize quality control
21505	*Summary:* [CEA] script fails in batch mode
21510	*Summary:* [CEA] problem with Netgen
21519	*Summary:* EDF 1463 SMESH: " Volume / face with bare borders" control gives a wrong result
21527	*Summary:* EDF 794 SMESH: UNV format
21539	*Summary:* EDF 1868 GEOM: Pipe T Shape cannot be build with OCCT 6.5.3
21549	*Summary:* [CEA] meshing problem with samples file
21552	*Summary:* [CEA] internal test fails

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OCCT 6.5.3 BUG CORRECTIONS

This chapter lists bug corrections and improvements included in Open CASCADE Technology 6.5.3.

Note that only the issues connected with SALOME platform are listed below. Please, refer to Open CASCADE Technology version 6.5.3 Release Notes for a complete list of changes.

OCC21212	*Summary:* Missing Hasher parameter in current implementation of NCollection Map-s This improvement has been implemented in frames of Partition algorithm source packages redesign.
OCC22698	*Summary:* Add OCC_VERSION_DEVELOPMENT definition in Standard_Version.hxx Added macro-definition helpful for detecting of the development version of OCCT.
OCC22731	*Summary:* Error on attempt to write in IGES 5.3 the attached brep model Referenced by SALOME issue 0021350: EDF 1948 GEOM: Export IGES 5.3 impossible.
OCC22771	*Summary:* An extra vertex produced in result of Boolean section for the cases of closed intersection curves. Referenced by SALOME issue 0021393: EDF 1989 GEOM: Result of MakeCut contains extra vertices
OCC22783	*Summary:* Improvement of BRepOffsetAPI_MakeFilling: keep old and new boundary edges with all pcurves Referenced by SALOME issue 0021173: EDF 1787 GEOM: PipeTShape in meter cannot be built.
OCC22795	*Summary:* Make possible to display some presentable objects in overlay of others, grouped by display priority Referenced by SALOME issue 0021239: EDF 1829 OCC: Bring to front selected objects.
OCC22798	*Summary:* Regression: BRepBuilderAPI_GTransform produces an invalid result on a sphere Referenced by SALOME issue 0021423: EDF 2013 GEOM: MakeScaleAlongAxes does not work.
OCC22802	*Summary:* The memory allocated with an excess is not released Referenced by SALOME issue 0021404: [CEA] Problem with partition.
OCC22814	*Summary:* Boolean opeation Section fails Referenced by SALOME issue 0021128: EDF 1732 GEOM: MakeCommon fails
OCC22851	*Summary:* No intersection curve between two surfaces Referenced by SALOME non-regression test case geom/bugs/J3.
OCC22907	*Summary:* The function 'distmini' produces wrong result. Referenced by SALOME issue 0021191: EDF 1628 SMESH: Detection of close but not sewed edges.

OCC22923	*Summary:* The command 'intersect' throws an exception. Referenced by SALOME issue 0021467: [CEA] Failing partition.
OCC22924	*Summary:* We need more stable work of ShapeAnalysis_FreeBounds::ConnectEdgesToWires() Referenced by SALOME issue 0021435: EDF 2023 GEOM: Weird behaviour when loading a python script.
OCC22967	*Summary:* Boolean operations between two cylinders with orthogonal axis generate a shape with big vertex tolerance Referenced by SALOME issue 0021435: EDF 2023 GEOM: Weird behaviour when loading a python script.
OCC23000	*Summary:* Improve the way the gradient and textured background is managed in 3d viewer Referenced by SALOME issue 0021179: EDF 1654 SMESH GEOM: better look'n'feel.
OCC23043	*Summary:* Wrong results of BRepExtrema_DistShapeShape: non-null minimum distance between intersecting line and cylinder Referenced by SALOME issue 0021492: EDF 2086 GEOM: Non null min distance between superposed objects.
OCC23060	*Summary:* Exception is raised during intersection of two edges. Referenced by SALOME issue 0021060: EDF 1663 GEOM: MakeCommon and GetInPlace results of a half-elliptic tore are incorrect.
OCC23076	*Summary:* Empty result done by intersection algorithm for a curve and a surface Referenced by SALOME issue 0021525: EDF GEOM: Tolerance deggradation issue and partition failure.
OCC23089	*Summary:* Wrong result done by solid classifier algorithm Referenced by SALOME issue 0021525: EDF GEOM: Tolerance deggradation issue and partition failure.
OCC23102	*Summary:* Change the algorithm of rendering the 3d viewer background using tiled texture Referenced by SALOME issue 0021179: EDF 1654 SMESH GEOM: better look'n'feel.

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SUPPORTED LINUX DISTRIBUTIONS AND PRE-REQUISITES

SALOME 6.5.0 supports Linux Debian 4.0 Etch 32bit and 64bit, Debian 5.0 Lenny 64bit, Debian Squeeze 6.0 64bit, Mandriva 2008 32bit and 64bit, Mandriva 2010 32bit and 64bit, Red Hat Enterprise 4.0 64bit, Scientific Linux 5.1 64bit, CentOS 5.5 64 bit and Windows XP 32bit. SALOME 6.5.0 version has been mainly tested with below listed pre-requisites on Mandriva 2010 32bit and Debian 6.0 Squeeze 64bit platforms.

SALOME 6.5.0 comes with the same prerequisites versions on all supported platforms (with some exceptions). The table below lists the versions of the products used by SALOME platform. Other versions of the products can also work but it is not guaranteed.

Product	Version	GUI (IAPP)	KERNEL	GEOM	SMESH	VISU	MED	YACS	PARAVIS	HOMARD	HEXABLOCK	NETGENPLUGIN	GHS3DPLUGIN	GHS3DPRLPLUGIN	BLSURFPLUGIN	HexoticPLUGIN	HEXABLOCKPLUGIN
gcc*	4.2**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
automake*	1.9**	X	X	X	X	X	X	X		X	X	X	X				X
autoconf*	2.59**	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
libtool*	1.5.6**	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X
GNU make*	3.80**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
cmake	2.8.7								X								
Python	2.6.6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Qt	*4.6.3*	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sip	4.13.2	X			X												
PyQt	4.9.1	X			X												
Boost	1.49.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Swig	1.3.40	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X
OCCT	6.5.3	X		X	X	X	X		X	X	X	X	X	X	X	X	X
Qwt	5.2.1	X			X												
QScintilla	2.6.1								X								
OmniORB	4.1.6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
OmniORBpy	3.6	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
omniNotify	2.1		X														
Hdf5	1.8.8	X	X	X	X	X	X		X	X		X	X	X	X	X	X
Med	3.0.5				X	X	X		X	X		X			X		
Vtk	5.8.0	X		X	X	X	X		X		X	X	X	X	X	X	X
numpy	1.5.1		X														
lapack	3.3.0		X														
graphviz	2.28.0	X	X	X	X	X	X	X				X	X	X	X	X	
Doxygen	1.8.0	X	X	X	X	X	X	X				X	X	X	X	X	X
NETGEN	4.9.13											X					
docutils	0.8.1	X	X	X	X	X	X	X		X	X	X	X	X	X	X	
metis	4.0				X												
scotch	5.1.11				X												
libxml2	2.7.8	X	X		X		X	X		X		X			X		
blsurf	3.1														X		
TetMesh-GHS3D	4.1 + 4.2												X	X			
Hexotic	1.0															X	
sphinx	1.1.3		X	X	X		X				X	X					
expat	2.0.1						X										
libBatch	1.5.0		X														
cgns	3.1.3				X												
ParaView	3.14.0								X								
Homard	10.4									X							

*)   Not included into SALOME Installation procedure
**)   Minimal required version

Product	Version	RANDOMIZER	SIERPINSKY	PYCALCULATOR	COMPONENT	CALCULATOR	HELLO	PYHELLO	LIGHT	PYLIGHT	ATOMIC	ATOMGEN	ATOMSOLV	HXX2SALOME	YACSGEN	JOBMANAGER
gcc*	4.2**	X	X	X	X	X	X	X	X	X	X	X	X	X		X
automake*	1.9**	X	X	X	X	X	X	X	X	X	X	X	X	X		X
autoconf*	2.59**	X	X	X	X	X	X	X	X	X	X	X	X	X		X
libtool*	1.5.6**	X	X	X	X	X	X	X	X	X	X	X	X	X		X
GNU make*	3.80**	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Python	2.6.6	X	X	X	X	X	X	X	X	X	X	X	X		X	X
Qt	4.6.3		X		X	X	X	X			X	X	X	X		X
Sip	4.13.2											X				
PyQt	4.9.1									X		X				
Boost	1.49.0		X			X	X							X		X
Swig	1.3.40		X		X	X										
OCCT	6.5.3		X		X	X	X			X		X		X		
Qwt	5.2.1															
OmniORB	4.1.6	X	X	X	X	X	X	X				X	X			X
OmniORBpy	3.6	X	X	X	X	X	X	X				X	X			X
Hdf5	1.8.8		X		X	X			X		X					
Med	3.0.5		X	X	X	X										
Vtk	5.8.0		X						X	X	X			X		
graphviz	2.28.0	X	X	X	X		X	X				X				
Doxygen	1.8.0	X	X	X	X		X	X				X				
sphinx	1.1.3															X

*)   Not included into SALOME Installation procedure
**)   Minimal required version

The following products are not used in SALOME directly; they are only required to build other pre-requisite products.

Product	Version	Required by	Comment
tcl	8.5.8	Open CASCADE Technology, VTK	Optional
tk	8.5.8	Open CASCADE Technology, VTK	Optional
tclX	8.4.0	Open CASCADE Technology	Optional
jinja	2.6	Sphinx	
pygments	1.5	Sphinx	
setuptools	0.6c11	Sphinx	
freetype	2.3.7	Open CASCADE Technology	
ftgl	2.1.2	Open CASCADE Technology	
freeimage	3.14.1	Open CASCADE Technology	Optional
gl2ps	1.3.5	Open CASCADE Technology	Optional
Intel TBB	3.0	Open CASCADE Technology	Optional
xdata	0.9.3		Can be used to create 3rd- party SALOME modules

NOTE: For some platforms SALOME uses prerequisites with patches (to fix different problems, like it is done in RPM) and defines specific configuration/compilation options. If you compile products without the Install Wizard we strongly recommend you to check configuration/compilation options using shell scripts located in `config_files` folder of the SALOME Installation Wizard.

SALOME 6.5.0 depends on a number of products for run time execution, others are necessary only for compilation or generation of development documentation (like doxygen for example). Below there is a list of mandatory and optional products.

Product	Compilation and Development		Execution		Remarks
	Mandatory	Optional	Mandatory	Optional	
gcc	X		X		
Automake	X				Except for PARAVIS
Autoconf	X				Except for PARAVIS
libtool	X				Except for PARAVIS
GNU make	X				
cmake	X				For PARAVIS only
Python	X		X		
Qt	X		X		
sip	X				
PyQt	X		X		
Boost	X		X		
Swig	X				
OCCT	X		X		
Qwt	X		X		
QScintilla		X		X	For YACS only Required only if used at compilation step
omniORB	X		X		
omniORBpy	X				
omniNotify	X		X		
Hdf	X		X		
Med	X		X		
Vtk	X		X		
numpy + lapack		X			
graphviz	X		X		In run-time required for YACS only
Doxygen	X				
NETGEN	X		X		For NETGENPLUGIN only
docutils		X			
cppunit		X			Used for unitary testing
mpi		X		X	Required only if used at compilation step
openpbs		X		X	Required only if used at compilation step
Lsf		X		X	Required only if used at compilation step
metis		X		X	Required only if used at compilation step
scotch		X		X	Required only if used at compilation step
libxml2	X		X		
blsurf	X		X		For BLSURFPLUGIN only
TetMesh-GHS3D	X		X		For GHS3DPLUGIN and GHS3DPRLPLUGIN only
Hexotic			X		For HexoticPLUGIN mesh only
sphinx		X			
expat	X		X		For YACS only
libBatch		X		X	Required only if used at compilation step
ParaView	X		X		For PARAVIS module only
Homard			X		For HOMARD module only
cgns		X		X	For SMESH only Required only if used at compilation step
freetype		X		X	Required only if used when building OCCT
ftgl		X		X	Required only if used when building OCCT
freeimage		X		X	Required only if used when building OCCT
gl2ps		X		X	Required only if used when building OCCT
Intel TBB		X		X	Required only if used when building OCCT

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HOW TO INSTALL AND BUILD SALOME

- **Linux**

Please follow README file from Installation Wizard for processing correctly installation of SALOME and all prerequisites.

If you would like to compile SALOME from scratch, please use `build.csh` or `build.sh` script delivered with the Installation Wizard. Call "`build.sh -h`" to see all available options of this script.

- **Windows**

For Windows platform SALOME is distributed in form of ZIP archive. To install SALOME on Windows, unpack the archive and follow instructions listed in the enclosed README file.

SALOME SYSTEM REQUIREMENTS

Minimal Configuration:

- Processor: Pentium IV.
- 512 Mb RAM.
- Hard Drive Space: 1.5 Gb.
- Video card 64mb.
- CD/DVD

Optimal Configuration:

- Processor: Dual Core.
- 2 Gb RAM.
- Hard Drive Space: 5Gb.
- 2Gb Swap.
- Video card 128mb.
- CD/DVD

HOW TO GET THE VERSION AND PRE-REQUISITES

SALOME 6.5.0 pre-compiled binaries for Linux Mandriva 2008 (32bit and 64bit), Mandriva 2010 (32bit and 64bit), Debian 4.0 Etch (32bit and 64bit), Debian 5.0 Lenny 64bit, Debian 6.0 Squeeze 64bit, Red Hat Enterprise 4.0 64bit, Scientific Linux 5.1 64bit, CentOS 5.5 64bit and Windows XP 32bit can be retrieved from the ftp://ftp.opencascade.com repository or from the SALOME web site http://www.salome-platform.org.

The SALOME Installation procedure for Linux includes SALOME modules sources, and it is possible to build sources from scratch using `build.sh` or `build.sch` script coming with installation procedure.

SALOME Installation procedure for Linux includes a patch for NETGEN which is placed inside NETGENPLUGIN modules sources. This patch is used for all platforms to fix several bugs of NETGEN. During the compilation on NETGEN from sources by the SALOME Installation Wizard, the patch is applied automatically to the standard NETGEN distribution. You can download NETGEN 4.9.13 from its official site using the following link: http://www.hpfem.jku.at/netgen.

All other pre-requisites can be obtained either from your Linux distribution (please be sure to use a compatible version) or from the distributors of these pre-requisites (for example, http://qt.nokia.com for Qt). Note that for some of pre-requisite products SALOME Installation procedure also includes patches that fix the problems detected by SALOME.

KNOWN PROBLEMS AND LIMITATIONS

- The following modules have not been migrated to Qt series 4 and thus are not included into SALOME 6.5.0 release: FILTER, SUPERV, MULTIPR. These modules are considered obsolete and not supported anymore.

- Application crash might occur on the data publication in the study if both data server and CPP container are running in the standalone mode.

- On some platforms the default font settings used in SALOME might cause bad application look-n-feel. This problem can be solved by changing the font settings with `qtconfig` utility included into the distribution of Qt 4.

- The following limitations refer to BLSURF plug-in:
  - Mesh contains inverted elements, if it is based on a shape, consisting of more than one face (box, cone, torus...) and if the option "Allow Quadrangles (Test)" has been checked before computation.
  - SIGFPE exception is raised after trying to compute a mesh based on a box with "Patch independent" option checked.
  - It has been found out that BLSURF algorithm can't be used as a local algorithm (on sub-meshes) and as a provider of low-level mesh for some 3D algorithms because BLSURF mesher (and, consequently, the plug-in) does not provide information on node parameters on edges (U) and faces (U, V). For example, the following combinations are impossible:
    - global MEFISTO or Quadrangle(mapping) + local BLSURF;
    - BLSUFR + Projection 2D from faces meshed by BLSURF;
    - local BLSURF + Extrusion 3D.

- Sometimes regression test bases give unstable results; in this case the testing should be restarted.

- A native VTK can be used only after manual recompilation with the GL2PS component.

- NETGEN 1D-2D and 1D-2D-3D algorithm do not require definition of 2D and 1D algorithms and hypotheses for both mesh and sub-mesh. 2D and 1D algorithms and hypotheses defined with NETGEN 1D-2D or 1D-2D-3D algorithm will be ignored during calculation.

- SALOME supports reading of documents from earlier versions but the documents created in the new version may not open in earlier ones.

- If SALOME modules are not installed in a single folder, SALOME may not work in the CSH shell since the environment variables are too long by default. In this case, it is suggested to use SH or to install all modules in the same folder.

- During the compilation of OCT 6.x by Makefiles on a station with NVIDIA video card you can experience problems because the installation procedure of NVIDIA video driver removes library `libGL.so` included in package `libMesaGL` from directory `/usr/X11R6/lib` and places this library `libGL.so` in directory `/usr/lib`. However, `libtool` expects to find the library in directory `/usr/X11R6/lib`, which causes compilation failure (See `/usr/X11R6/lib/libGLU.la`). We suggest making symbolic links in that case using the following commands:

      ln -s /usr/lib/libGL.so /usr/X11R6/lib/libGL.so

      ln -s /usr/lib/libGL.la /usr/X11R6/lib/libGL.la

- VISU module does not support timestamps defined on the same field but on different meshes

- Stream lines presentation can not be built on some MED fields due to limitations in VTK.

- MEFISTO algorithm sometimes produces different results on different platforms.

- In some cases the number of triangles generated by MEFISTO may be different at each attempt of building the mesh.

- When generating a 2D mesh with "Maximum Area" hypothesis used, MEFISTO algorithm can produce cells with maximum area larger than specified by the hypothesis.

- For the current moment, because of the ParaView application architecture limitations, PARAVIS module has the following known limitations:

  o PARAVIS is a "singleton" module: that means that it can be used within one study only. As soon as the user activates the PARAVIS in a study, this module becomes unavailable in other studies.

  o PARAVIS module works unstably using a remote connection; when SALOME is running on a remote computer, activation of PARAVIS module can sometimes lead to the application hang-up.