SALOME Platform

SALOME version 9.5.0

Release Notes

July 2020

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❖ ## GENERAL INFORMATION

CEA/DEN, EDF R&D and OPEN CASCADE are pleased to announce SALOME version 9.5.0. It is a public minor release that contains the results of planned minor improvements and bug fixes against SALOME version 9.4.0 released in December 2019.

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❖ PREREQUISITES

The table below lists pre-requisite products used with SALOME 9.5.0. The differences of 3rd-party product versions used for SALOME 9.4.0 and 9.5.0 are highlighted in bold.

Product	Linux		Windows	
	SALOME 9.4.0	SALOME 9.5.0	SALOME 9.4.0	SALOME 9.5.0
Alabaster	0.7.6	0.7.6	0.7.6	0.7.6
Babel	2.6.0	2.6.0	2.6.0	**2.7.0**
Boost	1.58.0	1.58.0	1.67.0	1.67.0
Certifi	2018.8.24	2018.8.24	2019.6.16	2019.6.16
Cgns	3.3.1	3.3.1	3.3.1	3.3.1
Chardet	3.0.4	3.0.4	3.0.4	3.0.4
Click	6.7	6.7	7.0	7.0
Cmake	3.12.1	3.12.1	3.12.1	3.12.1
Colorama	-	-	-	**0.4.1**
Cppunit	1.13.2	1.13.2	1.13.2	1.13.2
Cycler	0.10.0	0.10.0	0.10.0	0.10.0
Cython	0.25.2	0.25.2	0.29.12	0.29.12
Distene MeshGems suite[1]	2.9.6	**2.10.4**	2.9.6	**2.10.4**
Docutils	0.12	0.12	0.14	0.14
Doxygen	1.8.14	1.8.14	1.8.3.1	1.8.3.1
Eigen	3.3.4	3.3.4	3.3.4	3.3.4
Embree	3.3.0	3.3.0	3.5.2	3.5.2
Expat	-	-	2.0.1	2.0.1
F2C	-	-	1.0.0	1.0.0
Freeimage	3.16.0	3.16.0	3.18.0	3.18.0
Freetype	2.9.0	2.9.0	2.9.1	2.9.1
Gl2ps	1.4.0	**(removed)**	1.4.0	**(removed)**
Gmsh	4.1.4	4.1.4	-	-
Graphviz	2.38.0	2.38.0	2.38.0	2.38.0
Hdf5	1.10.3	1.10.3	1.10.3	1.10.3
Homard	11.12	11.12	-	-
Idna	2.7	2.7	2.8	2.8
Imagesize	1.0.0	1.0.0	1.1.0	1.1.0
Intel® Threading Building Blocks	4.4	**native**	2019 U8	2019 U8

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[1] Commercial product; requires license.

Product	Linux		Windows	
	SALOME 9.4.0	SALOME 9.5.0	SALOME 9.4.0	SALOME 9.5.0
Ispc	1.9.2	1.9.2	1.10.0	1.10.0
Jinja2	2.7.3	2.7.3	2.10.1	2.10.1
Kiwisolver	1.0.1	1.0.1	1.1.0	1.1.0
Lapack	3.8.0	3.8.0	3.8.0	3.8.0
Libbatch	2.4.2	**2.4.3**	2.4.2	**2.4.3**
Libjpeg	-	-	9c	9c
Libpng	-	-	1.5.10	1.5.10
Libxml2	2.9.1	2.9.1	2.9.1	2.9.1
Llvm	3.9.1	**8.0.1**	8.0.1	8.0.1
Markupsafe	0.23	0.23	1.1.1	1.1.1
Matplotlib	2.2.2	2.2.2	3.1.0	3.1.0
Med	4.0.0	**4.1.0**	4.0.0	**4.1.0**
Mesa	-	**19.0.8**	-	**19.2.3**
Metis	5.1.0	5.1.0	5.1.0	5.1.0
Mpi4py	1.3.1	**(removed)**	-	-
Netgen[2]	5.3.1	5.3.1	5.3.1	5.3.1
Nlopt	-	**2.4.2**	-	**2.5.0**
Numpy	1.15.1	1.15.1	1.16.4	1.16.4
Omniorb	4.2.2	4.2.2	4.2.3	4.2.3
Omniorbpy	4.2.2	4.2.2	4.2.3	4.2.3
Open CASCADE Technology	7.3.0p4[3]	**7.4.0p1[4]**	7.3.0p4[5]	**7.4.0p1[6]**
Opencv	3.2.0	3.2.0	3.2.0	3.2.0
Ospray	1.7.3	**1.8.4**	1.8.4	1.8.4
Packaging	17.1	17.1	19.0	19.0
Paraview	5.6.0p2[7]	**5.8.0**	5.6.0p2[8]	**5.8.0**
Pip	19.1.1	19.1.1	19.1.1	19.1.1
Pillow	-	**7.1.1**	-	**7.1.1**

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[2] Patched for SALOME.

[3] SHA1 identifier of this version is 1630119c3a5ec5a3268ddf8775a7085b5f6b06de.

[4] SHA1 identifier of this version is 33d9a6fa21ca4fa711da7066655aa2ba854545ee.

[5] SHA1 identifier of this version is 1630119c3a5ec5a3268ddf8775a7085b5f6b06de.

[6] SHA1 identifier of this version is 33d9a6fa21ca4fa711da7066655aa2ba854545ee.

[7] SHA1 identifier of this version is bfaf7b82ed22ee5d5e9726ac5ff3a615eec5c092.

[8] SHA1 identifier of this version is bfaf7b82ed22ee5d5e9726ac5ff3a615eec5c092.

Product	Linux		Windows	
	SALOME 9.4.0	SALOME 9.5.0	SALOME 9.4.0	SALOME 9.5.0
Planegcs	0.18	0.18	0.18	0.18
Pockets	0.6.2	0.6.2	0.7.2	0.7.2
Pthreads	-	-	2.9.1	2.9.1
Pygments	2.0.2	2.0.2	2.4.2	2.4.2
Pyparsing	2.0.3	2.0.3	2.4.0	2.4.0
Pyqt	5.9.0	5.9.0	5.9.0	5.9.0
Pyreadline	2.0	2.0	2.1	2.1
Python	3.6.5	3.6.5	3.6.5	3.6.5
Python-dateutil	2.4.2	2.4.2	2.8.0	2.8.0
Pytz	2015.4	2015.4	2019.1	2019.1
Qt	5.9.1	5.9.1	5.9.1	5.9.1
Qwt	6.1.2	6.1.2	6.1.2	6.1.2
Requests	2.19.1	2.19.1	2.22.0	2.22.0
Scipy	0.19.1	0.19.1	-	**1.4.1**
Scotch	6.0.4	6.0.4	-	-
Setuptools	38.4.0	38.4.0	41.0.1	41.0.1
Sip	4.19.3	4.19.3	4.19.3	4.19.3
Six	1.10.0	1.10.0	1.12.0	1.12.0
Snowballstemmer	1.2.1	1.2.1	1.9.0	1.9.0
Sphinx	1.7.6	1.7.6	2.1.2	2.1.2
Sphinxcontrib-applehelp	-	-	1.0.1	1.0.1
Sphinxcontrib-devhelp	-	-	1.0.1	1.0.1
Sphinxcontrib-htmlhelp		-	-	**1.0.2**
Sphinxcontrib-jsmath	-	-	1.0.1	1.0.1
Sphinxcontrib-qthelp	-	-	1.0.2	1.0.2
Sphinxcontrib-serializinghtml		-	1.1.3	1.1.3
Sphinxcontrib-napoleon	0.6.1	0.6.1	0.7	0.7
Sphinxcontrib-websupport	1.1.0	1.1.0	1.1.0	**1.1.2**
Sphinx-intl	0.9.10	0.9.10	2.0.0	2.0.0
Swig	3.0.12	3.0.12	3.0.12	3.0.12
Tcl	8.6.0	8.6.0	8.6.9	8.6.9

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Product	Linux		Windows	
	SALOME 9.4.0	SALOME 9.5.0	SALOME 9.4.0	SALOME 9.5.0
Tclx	8.4.1	8.4.1	8.6.9	8.6.9
Tk	8.6.0	8.6.0	8.6.9	8.6.9
Urllib3	1.23	1.23	1.25.3	1.25.3
Zlib	-	-	1.2.5	1.2.5

*Note: the table above lists only most important pre-requisite products; some optional products are not shown. For additional information about pre-requisite products and SALOME modules dependencies refer to the paragraph "**Supported distributions and pre-requisites**" below.*

*Note: several prerequisites given in the above table are installed with **PIP** package manager. The installation folder for these PIP packages is SALOME-9.5.0-*-SRC/BINARIES-*/Python/lib/python3.6/site-packages on Linux and SALOME-9.5.0\W64\Python\lib\site-packages on Windows.*

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License restrictions

Hereby we explicitly declare that PyQt (by Riverbank Computing Ltd) used by SALOME is distributed under the terms of GNU GPL license; for more details please refer to the PyQt site:

http://www.riverbankcomputing.com/software/pyqt/license

If you plan using SALOME for commercial purposes please consider obtaining a commercial license for PyQt from Riverbank Computing Ltd.

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❖ **NEW FEATURES AND IMPROVEMENTS**

KERNEL module

o   Make containers using srun protocol compatible with SLURM 19.05.

GUI module

o   The problem that the Object browser data tree state was not preserved when switching to SHAPER module and back has been fixed.

Shaper module

o   Chamfer feature.

o   3D model defeaturing,

o   Ability to export/import features to a file (*.shaperpart extension).

o   Feature Copy to duplicate results.

o   Publish SHAPER results to use from SMESH.

o   New mode "Through all" for ExtrusionFuse, ExtrusionCut, RevoloutionFuse, and RevolutionCut.

o   Ability to build shapes for the whole sketch selected (vertices, edges, wires, faces, shells).

o   Keep the structure of compounds by each operation.

o   New mode "Move to the end and split" for moving groups.

o   Hide shapes corresponding to already selected groups.

o   Create a group on a whole feature.

o   Use filters in groups several times.

o   Ability to move by mouse the Angle dimension in sketch to any quarter.

o   Support of B-spline curves in sketch.

o   Ability to change in the Preferences the mouse cursor for sketch.

o   Draw sketch entities by pressing left mouse button and moving it (enabled via Preferences).

o   Ability to set zero value for Distance dimensions in sketch.

o   Show thicker edges of Projection included into sketch result.

o   Tooltips (warnings) for some critical places.

o   Do not ask confirmation when exiting feature which was not changed.

o   Keyboard shortcut to add a parameter.

o   New option of the Inspection panel to show parameters of a feature in read-only mode.

o   Show/hide iso-lines in the viewer.

o   Features Fuse and Union are merged into single feature Fuse.

Mesh module

o   Algorithm of viscous layers construction now keeps periodic mesh on inlet and outlet faces.

o   A parameter activating creation of group of boundary elements has been added to Viscous Layers hypothesis, both 2D and 3D.

o   Now Body Fitting algorithm can treat internal geometrical faces as well as faces shared by solids; it also can create mesh faces and edges.

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- o Usage of Body Fitting algorithm on a sub-mesh is now possible.

- o Polyhedron per Solid meshing algorithm has been added. The algorithm generates one mesh volume (of a classical type or a polyhedron) per a geometrical solid using all faces from the solid boundary. Algorithm does not require that 2D mesh is generated on geometrical faces. It creates one mesh edge per geometrical edges and applies Polygon per Face to faces if they are not meshed by optional algorithms of lower dimensions.

- o Improvement of the automatic meshing. Depending on the geometry, a set of available possibilities is proposed to build triangles, quadrangles, hexahedra or tetrahedra. In every case, the best mesher is selected. The default parameters have been reviewed to better match different use cases.

- o Groups and sub-meshes based on SHAPER groups are kept and updated even if the geometry topologically changes.

YACS module

- o Management of the type pyobj in optimizer loop plugins.

- o Use 'None' as an initialization value for a python port.

- o Reduce overall memory peak for objects passing through python ports.

Other modules

- o Use "read the docs" theme (provided that it is available at build time) for all SALOME documentation built with Sphinx.

❖ CHANGE LOG

This chapter does not provide the complete set of changes included into this version of SALOME, only the most important changes are listed.

KERNEL MODULE

16517	*Summary:* [CEA 13186] crash at end session A workaround has been implemented to prevent error when trying to open empty, invalid, or inaccessible study.
17678	*Summary:* EDF 20078 - `salome killall` doesn't work on specific cases The problem that `SALOMEDS` server is unexpectedly terminated because of incorrect memory addressing in case if its `Shutdown()` method is called in standalone mode has been fixed.
18339	*Summary:* [CEA] [Windows] `salome killall` The functionality to stop SALOME session has been improved under Windows platform.
18341	*Summary:* [CEA] [Windows] `HOME` environment variable Treatment of the `HOME` directory is managed in a coherent way in all SALOME modules.
18347	*Summary:* [CEA] remote access to the `ResourcesManager omniORB.CORBA.TRANSIENT: CORBA.TRANSIENT` Fixed regression in configuring `omniNames` due to introducing *'endpoint'* option which broke normal connection to naming service in some network configurations.
18467	*Summary:* [CEA] remove any addition to the environment at launch done by `runSalome` SALOME runner now implies that all needed environment is properly set; it does not modify environment variables like `PATH`, `LD_LIBRARY_PATH`, `PYTHONPATH` and some other ones.
18517	*Summary:* [CEA] KERNEL - patch integration Patch for `bin/orbmodule.py` has been integrated.
18727	*Summary:* [CEA 18716] Warnings at SALOME launch Hide unnecessary debug output from the launch procedure.

GUI MODULE

18618	*Summary:* [CEA 16635] Dialog window in French mode French translation in the *Close Active Study* message window has been corrected in accordance with the current application behaviour.

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18935	*Summary:* [CEA 18933] Clipping color Porting to OCCT 7.4: change a way the capping color is configured to clipping planes.
19032	*Summary:* [CEA] Debugging a python script with VS Code A possibility to attach VS Code to the embedded Python interpreter, to debug Python scripts in the running SALOME session, has been introduced.
19732	*Summary:* [CEA] SIGSEGV with synchronized OCC and VTK views Prevent unexpected exception when incorrect camera parameters are applied to the viewer.

SHAPER MODULE

17910	*Summary:* [EDF] Filters can only be used once The possibility to use certain filters several times is implemented.
18429	*Summary:* [CEA] Angle from an axis in Shaper module Provide possibility to select external objects for Angle constraint creation.
18451	*Summary:* [CEA] Error in dump by coordinates Transaction after changing the order of faces in a sketch should be closed by `'model.do()'` command.
18503	*Summary:* [CEA 16916] SAMPLES location - configuration file instead of context Avoid adding non-existing directories to file dialog's side bar.
18608	*Summary:* EDF 20673 - SHAPER study : KO in 9.4.0 The algorithm of tolerance calculation is improved for `UnifySameDomain` algorithm, which is used for merging several faces lying on the same surface.
18609	*Summary:* EDF 20674 - Duplication when moving last feature of a folder Delete extra object from a folder object.
18710	*Summary:* EDF 20835 [Windows] - Problem with a study The new attribute has been added to feature Export to store the list of exporting shapes. It allows avoiding the problem of export to GEOM when the original feature is deleted from the document.
18733	*Summary:* Impossible to insert a feature into the previous folder Check if the folder has features not in history at the end.
18736	*Summary:* EDF - Crash when dumping (python) from a HDF file made with SALOME windows Usage of concealed results is avoided.

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18737	*Summary:* EDF - Button "preview" of parameters doesn't work Update viewer on *Show Preview* command
18739	*Summary:* EDF - Move to the end and split Added support of order of modified results in the move to the end algorithm.
18755	*Summary:* EDF - `SIGSEGV` after deleting a feature and pressing `Esc` Do not process key events if a modal dialog box is open in order to process them within the dialog box.
18800	*Summary:* [CEA] OCC Viewer - Angle constraint not refreshed Update the queue of the messages to send the correct signal for the sketch solver.
18836	*Summary:* [CEA] Can't select the feature Wire as Extrusion base object Validator's criteria were updated to use the compound of wires as a base of the extrusion.
18876	*Summary:* [CEA] SHAPER tooltips remain on top even if the SALOME window is minimized Hide Sketcher tooltips on deactivation of the application desktop.
18879	*Summary:* [CEA 18712] Remove intersection edges and fuse operation Fixed `UnifySameDomain` algorithm on OCCT side.
18881	*Summary:* [CEA] Sometimes when moving an edge, its old position still appears in yellow Clear object highlight on mouse dragging.
18882	*Summary:* [CEA] Point selection in sketcher sometimes leads to Fatal Error : `gp_Vec::Normalize()` - vector has zero norm Avoid crash while calculating the position of the sketch constraint's presentation attached to the closed curve. Improve calculation of the projected point when moving.
18887	*Summary:* [CEA] Fatal error after save and dump or dump and save Fixed the problem of management of objects in case some shape was deleted from the SHAPERSTUDY tree.
18888	*Summary:* [CEA] `SIGSEGV` when calling split on B-spline Protect usage of B-spline in *Mirror*, *Linear Copy*, *Angular Copy*, *Split* and *Trim* operations (as this feature is not supported yet).
18905	*Summary:* [CEA] `SIGSEGV` when edit a sketch if a change sketch plane has been aborted before Avoid crash on editing the sketch, if changing the sketch plane has been aborted. Restore plane of the sketcher if user cancels change of plane operation.

18929	*Summary:* EDF - impossible to validate constraints Make exclusion for inline editor for processing key events when a modal dialog box is active
18944	*Summary:* [CEA 18933] Cannot delete Part Activate top-level document when a Part is removed.
18968	*Summary:* [CEA] Sometimes when clicking to add a face to a group two faces are added Decrease sensitivity of mouse click to 2 pixels.
19008	*Summary:* EDF - Crash when choosing a support plane for a sketch Use default deflection coefficient for highlighting of a complex body.
19019	*Summary:* EDF - Python dump not loadable Improved setting the *"concealed"* flag to find correct reference to the sketch entity.
19031	*Summary:* EDF - Python dump not loadable Improve naming of the *"from"/"to"* faces of Extrusion in the case of Extrusion Fuse with comp solid.
19036	*Summary:* [CEA] Can't use a parameter with 1e-5 value in the sketcher Avoid checking the dot in the floating value and adding it, when calculating the value of an expression.
19037	*Summary:* [CEA] SWIG director method error when switching to SMESH Fixed in the SHAPERSTUDY module the problem of load of HDF files with newly created SHAPER groups stored.
19038	*Summary:* [CEA] Display shapes in multithread Switch ON parallel processing (multi-thread) for displaying an object.
19039	*Summary:* [CEA] Can't select solids to create a compound The re-computation of the object during edition regression has been fixed.
19051	*Summary:* EDF - selection by polygon is almost freezing the computer Prevent creation of a polygon with number of points less than 3.
19056	*Summary:* EDF - crash when selecting a whole sketch in *"build ==> wire"* Improve the wire generation algorithm for the whole sketch selected.
19058	*Summary:* [CEA] Error in sketch projection when changing parameter Improve the indexation of sub-shapes in the weak naming mechanism.

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19060	*Summary:* [CEA] Fatal error no persistent file when loading SMESH Fixed problem with incorrect saving of uninitialized GEOM document that may happen in particular use cases.
19061	*Summary:* [CEA] Mesh warning sign although no change has been made in SHAPER Fixed the problem of modified state of the groups after loading, activation SMESH, then SHAPER and SMESH again.
19063	*Summary:* [CEA] Recover compound choice not saved Set the default value of the Recover method in case it is not initialized yet only.
19065	*Summary:* [CEA] Wrong result in Pipe by locations Improved positioning of the pipe's path with respect to the base wire.
19066	*Summary:* [CEA] `SIGSEGV` in pipe by sections Remove duplicating edges when constructing a wire.
19068	*Summary:* [CEA] Unable to quit Sketch because of conflicting constraint Show conflicting coincidences on creation and on starting of Sketch.
19071	*Summary:* [CEA] Selecting edges to create group takes too much time The selection of edges or vertices on the Face feature result was optimized.
19078	*Summary:* [CEA] Mesh Group - Group on filter Impossibility to use a SHAPERSTUDY group as a filter threshold has been fixed.
19086	*Summary:* [CEA] The circle does not appear has preselected when creating an edge with automatic coincidence Avoid clearing pre-highlighting on selection of a sketcher object
19088	*Summary:* [CEA] Preselection of the origin point is not very distinguishable Initialize highlighting mode of points for trihedron at the module activation.
19089	*Summary:* [CEA] Sketch contour closed in HDF but not closed in python dump Set fuzzy value for Boolean Operation when creating a sketch faces due to the tolerance up to $1e^{-5}$ of the sketch result, when `PlaneGCS` solves a sketch with arcs.
19090	*Summary:* EDF 21422 - Problem of selection Fixed a bug with selection of a shape with hidden faces.
19094	*Summary:* [CEA] Non-translation of filters on groups in SHAPER French translations for the Filters plugin have been added.

19101	*Summary:* [CEA 16680] Sketch in error when running a dumped study Improve the validator of SketchProjection feature to avoid projecting points of the current sketch.
19114	*Summary:* EDF - Complete documentation of Boolean operations Add the table describing possible arguments for each Boolean Operation into the documentation.
19115	*Summary:* EDF - Suppression of *"union"* from the GUI? The performance of the Fuse operation has been improved to be similar to the Union operation.
19137	*Summary:* [CEA] Sketch dimensions appear in green when fully constrained Now projected lines are displayed in purple instead of green.
19169	*Summary:* [CEA] Extrusion is previewed although no valid input Erase preview for disabled results.
19181	*Summary:* [CEA] Result appears when creating a parameter in the sketch Do not change current feature on creation of a parameter *"on the fly"*.
19184	*Summary:* [CEA] Objects are still selected when a feature has been applied Clear current selection on an operation committing or aborting.
19187	*Summary:* [CEA] B-Splines - Crash with specific scenario Forbid the tangency between B-spline curve and segments of its control polygon in the sketcher. The first and the last segments of non-periodic B-spline are already tangent, but other segments have no coincident boundaries with B-spline, thus, prohibited.
19190	*Summary:* EDF - Group filter "on a solid" The classification algorithm for faces with holes has been improved.
19193	*Summary:* [CEA] Green plane of the sketch not on the displayed plane Bug with rendering of the sketch plane has been fixed.
19196	*Summary:* [CEA] Features in error after a change of parameter in a sketch although the topology is the same Stabilize the orientation of the direction of extrusion, which is built from a wire.
19197	*Summary:* [CEA] Wrong python dump of sketch plane Allow creating a sketch with size of sketch plane defined if a plane object is selected for base of sketch.

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19201	*Summary:* [CEA] Can't select a SHAPER result to create a group on geometry Allows selecting the SHAPERSTUDY object in the "Create Group" dialog.
19202	*Summary:* [CEA] Horizontal distance not displayed Corrected bug for Horizontal distance constraint.
19207	*Summary:* EDF - Planes of imported STEP not usable Implement a possibility to make a plane based on the B-spline surfaces of degree 1.
19209	*Summary:* EDF 21531 - General problem of dumping a 9.4.0 study A workaround has been implemented in GUI module to prevent losing the commands related to the *"light"* modules when dumping study to the Python script: such modules are now implicitly loaded into the memory, to be able to dump their contents as well.
19217	*Summary:* EDF 21537 - Dumped file not loadable Fixed the selection of the sketch faces in particular case.
19231	*Summary:* [CEA] Wrong group in SHAPERSTUDY created by GroupSubstraction Fix for correct translation of all Boolean operations between groups from SHAPER into the SHAPERSTUDY.
19471	*Summary:* [CEA] Segmentation fault if edge for point creation is selected from object browser Prohibit the selection of a feature when constructing a point on edge.
19703	*Summary:* [CEA] SIGSEGV when activating SHAPER on a hdf Fixed problem with restoring SHAPER data from HDF document.
19707	*Summary:* [CEA] Fatal error gp_Dir() input vector has zero norm when loading python dump Fixed the problem of sketch status update if the referenced object used for the base plane disappears.
19720	*Summary:* [CEA] Wrong part position after reloading hdf The part and its translation now is correctly updated and displayed on activate/deactivate of this part after loading of HDF.
19721	*Summary:* [CEA] Parts moved at partset level are not well published to SHAPERSTUDY Problem with python dump/load when part results are transformed is fixed.
19722	*Summary:* EDF 21673 - Field with string : impossible to save Make SHAPER fields with string-type published to SHAPERSTUDY wihtou crash even they are not supported by SMESH.

19725	*Summary:* [CEA] Error when loading python dump Fix the issue related to the on-the-fly projection to sketch, when projecting a periodic B-spline curve orthogonal to the sketch plane.
19726	*Summary:* [CEA] Placement failed because of wrong name in face selection Fixed the problem of the naming names when part sub-shape is selected from the partset and after it was updated in the part by a new feature.

GEOMETRY MODULE

16405	*Summary:* [CEA 2232] Make Vertex On Curve A problem with not properly updated wireframe presentation has been fixed in OCCT. Tessellation is done before displaying for wireframe presentation now.
16422	*Summary:* [CEA 2139] Bad display of an arc after partition Some issues with shapes presentation in OCC Viewer have been fixed as the tessellation mechanism has been significantly redesigned in OCCT 7.4.
16488	*Summary:* EDF 18390 - Cut / Common : inversion of results Revolution algorithm has been enhanced with a check of generated surfaces on self-intersection. Now in case of self-intersection the algorithm fails. This is done to avoid problems with detection and processing of self-intersecting shapes by other algorithms.
16525	*Summary:* EDF 20495 - problem with scale Extrusion Two problems in OCCT have been fixed: 1. Fixed `MakePipeShell` failure. 2. `MakePipeShell` matches the given profiles now.
18415	*Summary:* [CEA 18407] "Scale along axis" Feature - Slow and incorrect shape Fixed a problem in OCCT concerning scaling with different coefficients along axes.
18880	*Summary:* [CEA 18712] `MakePartition`: Partition aborted Fixed a regression in OCCT impacting Boolean operations.
18913	*Summary:* [CEA] `geompy.MakeCommon` fails on hollow sphere Fixed a regression in OCCT impacting Boolean operations.
18939	*Summary:* [CEA] `ExportXAO` takes too much time to export sub-shapes Export of big shapes in XAO format has been optimized to spend less time in `XAOPlugin_IOperations::exportSubshapes()`. Time consuming operation `TopExp::MapShapes()` is called only once now.

19108	*Summary:* EDF 21451 - `t_shape_builder` Fixed two problems in `t_shape_builder`: 1. Eliminated multiple "`addToStudy()` failed" traces 2. Fixed failure of case `r1 = 1.0, r2 = 0.1, thickness = 0.01`
19182	*Summary:* [CEA] GEOM appears in Object browser when calling SMESH from python Creation of Geometry component is not performed now in `geomBuilder.init_geom()`. Redundant *'father'* attribute has been removed from `geomBuilder`.

MESH MODULE

17262	*Summary:* EDF 19862 – No conform mesh Fix the bug that MG-CADSurf generates a none-conformal mesh.
17336	*Summary:* [CEA 17333] Mesh offset generates a segmentation violation `SIGSEGV` when applying Offset has been fixed. "Offset failed" error message emitted instead.
17828	*Summary:* [CEA 17805] Polyhedron Mesh volume calculation and volume orientation criterion Bad Oriented Volume quality control criterion has been fixed to detect polyhedra with incoherently oriented facets. Modification of Orientation operation has been fixed to correct incoherently oriented polyhedra.
17927	*Summary:* EDF 20035 - Perfs of mesh creation Performance regression on hypothesis addition and modification has been fixed.
18611	*Summary:* EDF 20669 - Quality of quadrangles Computation of Aspect Ratio of quadrangle element has been fixed.
18621	*Summary:* [CEA] Accessing Hypothesis programmatically with Python API Fixed localization problem: numerical parameters of hypotheses incorrectly stored on non-C locales.
18641	*Summary:* [CEA 18636][Windows] `SMESH_MeshersList` environment variable separator Separator for `SMESH_MeshersList` value was changes on Windows platform: before colon is used on the both Windows and Linux, now semicolon is used on Windows, colon is used on Linux.
18665	*Summary:* [CEA 17339] Polyhedron volume calculation Computation of volume of polyhedral elements has been fixed.
18782	*Summary:* EDF 20946 - Free nodes with biquadratic Fix a bug that Build Compound Mesh misses bi-quadratic pentahedra

18803	*Summary:* [CEA 18712] `Mesh.ReorientObject(groupVolumes)` generates a `SIGSEV` with SMESH branch `rnv/pv58_1` + ParaView 5.8 `SIGSEGV` in `Mesh.ReorientObject()` has been fixed
18807	*Summary:* [CEA 7051] GMF import - include fault mesh(es) GMF import now additionally reads *"fault"* groups that can be generated by MGCleaner for example
18940	*Summary:* [CEA] Wrong display in shading, the mesh looks to have some transparency Problem with rendering coincident elements has been corrected via patch to VTK library.
18948	*Summary:* [CEA 18933] Exporting a mesh: `ExportMED SMESH.MED_V2_2` An exporting mesh into MED 2.2 format has been restored.
19026	*Summary:* EDF 21355 - Problem with Belong to GEOM Incorrect work of Belong to Geom filter in the case where solid geometry contains solids with unreasonably large tolerance has been fixed.
19129	*Summary:* [CEA] [Windows] Error export med version A problem connected with exporting MED-3.2 and MED-3.3 files under Windows has been corrected.
19204	*Summary:* [CEA][Windows] VTK Viewer - Access violation while right clicking Problem with the deletion of the polygonal rubber-band has been resolved.
19219	*Summary:* [CEA] `SIGSEGV` when right-click in the view in 3D layers dialog box Fixed incorrect treating of selection when generating popup menu that caused invalid memory addressing.
19221	*Summary:* [CEA] `smeshBuilder Mesh.Group(group)` does not work on SHAPERSTUDY groups Added a specific code for the SHAPERSTUDY objects processing into SMESH module for `GetMesh` method call case in SMESH.
19226	*Summary:* [CEA] ViscousLayers2D can't be created on a group from SHAPERSTUDY in python Added possibility to correctly manage SHAPERSTUDY objects in ViscousLayers2D and ViscousLayers (3D) algorithms.
19232	*Summary:* [CEA] Overall Mesh quality crash on imported MED Prevent creating polygons based on none of nodes.

MG-CADSURF PLUGIN MODULE

18459	*Summary:* [CEA] With CADSurf discrete, quadrangle elements are not created, and the GMF file is not exported
	Bug that MG-CADSurf re-mesher does not create quadrangle elements and does not create GMF file has been fixed.
18906	*Summary:* [CEA] BLSURFPLUGIN multithread test regression
	Multithread test case for MG-CADSurf has been refactored to improve execution stability.
19077	*Summary:* [CEA] MG-CADSurf - Advanced "Local size" with attractor
	A bug of impossibility to define an attractor in GUI has been fixed.

MG-TETRA PLUGIN MODULE

| 17918 | *Summary:* [CEA 17019] [Windows] mg-tetra.exe command line in console not printed correctly |
| | Debug output information from GHS3DPLUGIN is printed correctly now. |

GMSH PLUGIN MODULE

18601	*Summary: [CEA 18597] GMSH missing from SMESH algorithms/ GMSH regression*
	Meshing algorithm's label was wrongly used as a key in the availability map. Fixed by using mesh algorithm unique typename as a key.
18723	*Summary: [CEA 18597] GMSH Hypothesis and groups as compounds*
	Prevent using irrelevant groups to define GMSH compound.

HEXABLOCK MODULE

| 17637 | *Summary:* [CEA 17352] HEXABLOCK Make vertex association NCollection_DataMap::Find |
| | Various problems of incorrect selection events treating in the HEXABLOCK module have been fixed with migration to the Open CASCADE Technology 7.4. In addition, unnecessary selection resetting in Vertex Association dialog that happened when mouse pointer hovered viewer has been resolved. |

FIELDS MODULE

17782	*Summary:* [CEA] MED version 4.1missing from drop-down list
	MED version 4.1 has been added to the list of supported formats.
18787	*Summary:* [CEA 18785] cannot import `MEDCouplingClient`
	Regression that "`import MEDCouplingClient`" fails has been solved

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PARAVIS MODULE

16480	*Summary:* [CEA] `GetAnimationScene()::Play()` crash A crash during animation has been fixed.
18634	*Summary:* [CEA] [Windows] `MEDReader` files failure Regression when reading MED files under Windows has been corrected.
18866	*Summary:* [CEA] PARAVIS Common icons Missing toolbar's buttons have been restored.
16493	*Summary:* [CEA 13013] Information why the filter can't be selected is not shown in the status bar. Explanation why a filter cannot be used is displayed in the status bar.
16626	*Summary:* [CEA 16555] The launch of a "Show Trace" ends with a segmentation error The problem with a segmentation fault error is fixed after migration to ParaView-5.8.0 version.
18901	*Summary:* [CEA] Integration of LATA reader in ParaView 5.8 LATA reader has been integrated to SALOME via dedicated patch for ParaView 5.8.
19711	*Summary:* [CEA] GUI state after loading a HDF in PARAVIS Activation of the first ParaVis view was added after loading of the ParaView state file.

YACS MODULE

18326	*Summary:* [CEA] YACS `operator< YACS/src/genericgui/LinkAStar.hxx` The comparator from a `Cost` structure has been changed according its logical destination.
20974	*Summary:* Fix async optimizer loop with no point to evaluate.

OTHER ISSUES

17005	*Summary:* [CEA][Windows] cannot save study. A problem with saving HDF5 files has been fixed under Windows platform.
18858	*Summary:* [CEA] CoTech Action 118.2 - Use 'read the docs' theme for documentation Use "read the docs" theme (provided that it is available at build time) for all SALOME documentation built with Sphinx.
19042	*Summary:* [CEA] ADAO documentation on Linux

	ADAO module documentation has been improved.
19480	*Summary:* [CEA 19477] MEDCOUPLING tutorials migration Code examples in the documentation have been adapted for Python 3.

SALOME Platform

❖ OCCT 7.4.0 BUG CORRECTIONS

This chapter lists bug corrections and improvements made for SALOME project in Open CASCADE Technology. Below listed bug corrections and improvements are included into patch #1 for OCCT version 7.4.0 used by SALOME 9.5.0.

26071	BRepOffsetAPI_MakePipeShell produces rough result
29873	Modeling Algorithms - Boolean FUSE produces incorrect result
30386	Modeling Algorithms - Unable to perform Cut operation
30597	Result of BRepOffsetAPI_MakePipeShell doesn't match the given profiles
31031	Incorrect result is returned from BRepPrimAPI_MakePrism::Generated()
031066	Infinite loop in ShapeUpgrade_UnifySameDomain
31153	Visualization - Non clear highlighting of selected trihedron elements
31187	Modeling Algorithms - Regression relatively 7.3.0. Unify same domain algorithm produces invalid shape.
31242	Modeling Algorithms: Scaling with different coefficients along axes produces invalid shape
31294	Modeling Algorithms - Regression relatively 7.3.0. Crash in method BRepPrimAPI_MakePrism::Generated(...)
31404	Modeling Algorithms: Modeling Algorithms - BOP Fuse produces a self-interfering or a good shape depending on the order of arguments
31407	[Regression to 7.3.0] Extrema does not process parallel circles correctly
31415	Modeling Algorithms - Solid classifier works incorrectly on a cylinder
31441	UnifySameDomain corrupts the shape
31460	Modeling Algorithms - Regression: Revolution not done.
31462	Modeling Algorithms - BOP result depends on the arguments order
31470	Modeling Algorithms: Modeling Algorithms - Regression: BOP common produces empty result (box and holed sphere)

❖ SUPPORTED DISTRIBUTIONS AND PRE-REQUISITES

SALOME is a cross-platform solution that supports Linux and Windows. It is distributed as open-source software under the terms of the GNU LGPL license.

The table below lists the versions of the pre-requisite products used by SALOME platform. Other versions of the products can also work but this is not guaranteed.

Product	Version	KERNEL	GUI	GEOM	SHAPER	SMESH	FIELDS	YACS	PARAVIS	HOMARD	HEXABLOCK	JOBMANAGER	NETGENPLUGIN	GHS3DPLUGIN	GHS3DPRLPLUGIN	BLSURFPLUGIN	HexoticPLUGIN	HEXABLOCKPLUGIN	HYBRIDPLUGIN	GMSHPLUGIN	ADAO	EFICAS
Gcc*	4.4***	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
GNU make*	3.81***	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Microsoft Visual Studio**	2017	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cmake	3.12.1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Python	3.6.5	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Qt	5.9.1		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sip	4.19.3		X																			
Pyqt	5.9.0	X	X			X	X		X												X	X
Boost	1.58.0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
Swig	3.0.12	X	X	X	X	X	X	X		X	X											
OCCT	7.4.0p1		X	X	X	X				X	X		X	X	X	X	X	X	X	X		
Qwt	6.1.2		X			X																
Omniorb	4.2.2	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Omniorbpy	4.2.2	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hdf5	1.10.3	X	X			X																
Med	4.1.0					X	X		X	X												
Vtk	8****		X	X		X	X		X		X		X	X	X	X	X	X	X	X		
Numpy	1.15.1		X			X	X		X	X											X	
Scipy	0.19.1																				X	
Graphviz	2.38.0	X	X	X	X	X	X	X					X	X	X	X	X		X	X		
Doxygen	1.8.14	X	X	X	X	X	X	X					X	X	X	X	X	X	X	X		
Netgen	5.3.1												X									
Metis	5.1.0					X																
Scotch	6.0.4					X																
Libxml2	2.9.1	X	X		X		X	X														
Distene MeshGems	2.10-4													X	X	X	X		X			
Sphinx	1.7.6	X	X		X	X	X	X	X	X	X	X									X	X
Libbatch	2.4.3	X																				
Cgns	3.3.1					X																
Paraview	5.8.0		X				X		X													
Homard	11.12									X												
Gmsh	4.1.4																			X		
Planegcs	0.18			X																		
Pillow	7.1.1						X															
Nlopt	2.4.2																				X	
Eficas (tool)	9..5.0																				X	X

*)   Linux only
**)   Windows only
***)   Minimal required version
****)   Version included into ParaView is used

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The following products are not mandatory for SALOME directly; these products are either optional for SALOME or only required to build other pre-requisite products.

Product	Required by	Comment
Alabaster	Sphinx	Not used directly.
Babel	Sphinx	Not used directly.
Certifi	Sphinx	Not used directly.
Chardet	Sphinx	Not used directly.
Click	Sphinx	Not used directly.
Colorama	SAT	Not used directly. Windows only.
Cppunit	KERNEL, FIELDS, GEOM, YACS, HEXABLOCK	Optional, for unitary tests.
Cycler	Matplotlib	Not used directly.
Cython	Mpi4py, Scipy	Not used directly.
Docutils	Sphinx	Not used directly.
Eigen	Planegcs	Not used directly.
Embree	ParaView	Optional. Not used directly.
Expat	Graphviz	Windows only.
F2c	SMESH	Compile FORTRAN code (converted to C).
Freeimage	OCCT	Optional. Not used directly.
Freetype	OCCT, ParaView	Optional. Not used directly.
Idna	Sphinx	Not used directly.
Imagesize	Sphinx	Not used directly.
Intel TBB	OCCT, Ospray, SMESH	Optional.
Ispc	ParaView	Optional. Not used directly.
Jinja2	Sphinx	Not used directly.
Kiwisolver	Sphinx	Not used directly.
Lapack	Numpy	Not used directly.
Libjpeg	Graphviz	Not used directly. Windows only.
Libpng	Graphviz	Not used directly. Windows only.
Llvm	ParaView	Optional. Not used directly.
Markupsafe	Shinx	Not used directly.
Matplotlib	ParaView	Optional. Not used directly.
Mesa	Visualization subsystem.	Optional. Not used directly.
Opencv	GEOM	Optional.
Openmpi	ParaView, Hdf5, Med, KERNEL, FIELDS	Optional.
Ospray	ParaView	Optional. Not used directly.
Packaging	Sphinx	Not used directly.
Pip	Python extra packages	Optional. Not used directly.
Pockets	Sphinx	Not used directly.
Pthreads	OmniORB, and other	Not used directly.
Pygments	Sphinx	Not used directly.
Pyparsing	Matplotlib	Not used directly.
Pyreadline	SAT	Not used directly. Windows only.
Python-dateutil	Matplotlib	Not used directly.
Pytz	Matplotlib, Sphinx	Not used directly.
Requests	Sphinx	Not used directly.
Setuptools	Sphinx, Matplotlib, Numpy, Scipy, …	Not used directly.
Six	Matplotlib	Not used directly.

Snowballstemmer	Sphinx	Not used directly.
Sphinx-inlt	GUI, GEOM, SMESH, MEDCOUPLING	Optional.
Sphinxcontrib-applehelp	Sphinx	Not used directly. Windows only.
Sphinxcontrib-devhelp	Sphinx	Not used directly. Windows only.
Sphinxcontrib-htmlhelp	Sphinx	Not used directly. Windows only.
Sphinxcontrib-jsmath	Sphinx	Not used directly. Windows only.
Sphinxcontrib-qthelp	Sphinx	Not used directly. Windows only.
Sphinxcontrib-napoleon	GUI, GEOM, SMESH, MEDCOUPLING	Optional.
Sphinxcontrib-serializing	Sphinx	Not used directly. Windows only.
Sphinxcontrib-websupport	Sphinx	Not used directly.
Tcl	OCCT, Python	Optional. Not used directly.
Tk	OCCT, Python	Optional. Not used directly.
Tclx	OCCT, Python	Optional. Not used directly.
Urllib3	Sphinx	Not used directly.
Zlib	Hdf5	Not used directly.

SALOME 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[9].

Software Requirements

Product	Compilation and Development		Execution		Remarks
	Mandatory	Optional	Mandatory	Optional	
Gcc	X		X		
GNU make	X				
Microsoft Visual C++	X		X		For execution, runtime libraries are only required
Boost	X		X		
Cgns		X		X	For SMESH only Required only if used at compilation step
Cmake	X				
Cppunit		X			For testing only.
Distene MeshGems	X	X	X	X	Compilation: depending on build optioned used, can be mandatory for BLSURFPLUGIN, GHS3DPLUGIN, GHS3DPRLPLUGIN, HexoticPLUGIN, HYBRIDPLUGIN. Runtime: mandatory for BLSURFPLUGIN, GHS3DPLUGIN, GHS3DPRLPLUGIN, HexoticPLUGIN, HYBRIDPLUGIN.
Doxygen		X			Needed only for documentation generation
Eficas (tool)	X		X		For ADAO, EFICAS
Freetype	X		X		
Freeimage		X		X	Required only if used when building OCCT
Gmsh	X		X		For GMSHPLUGIN only
Graphviz	X		X		In run-time required for YACS only
Hdf5	X		X		
Homard			X		For HOMARD module only
Intel TBB		X		X	Required if used when building OCCT and/or if used to build SMESH
Libbatch		X		X	Required only if used at compilation step for KERNEL
Libxml2	X		X		
Matplotib				X	Required only if used when building ParaView. Used by ADAO.
Med	X		X		
Metis		X		X	Required only if used at compilation step for FIELDS

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[9] Some optional pre-requisite products are not listed.

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Netgen	X		X		For NETGENPLUGIN only
Nlopt				X	Required by ADAO.
Numpy (+ Lapack)	X		X		Required by FIELDS, ADAO
Omniorb	X		X		
Omniorbpy	X				
OCCT	X		X		
Opencv		X		X	Required only if used at compilation step for GEOM
Openmpi		X		X	Required only if used when building SALOME and/or pre-requisites
ParaView	X		X		Mandatory for PARAVIS module; optional for GUI module
Pillow				X	Optionally required by FIELDS.
Planegcs	X		X		Required by SHAPER
Pyqt	X		X		
Python	X		X		
Qt	X		X		
Qwt	X		X		
Scipy			X		Required by ADAO
Scotch		X		X	Required only if used at compilation step for FIELDS
Sip	X				
Sphinx		X			Needed only for documentation generation
Swig	X				
Vtk	X		X		

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❖ HOW TO GET THE VERSION AND PRE-REQUISITES

Sources of SALOME 9.5.0 can be retrieved from the Git repositories using V9_5_0 tag; the complete list of repositories can be found at https://git.salome-platform.org/gitweb/.

All pre-requisites can be obtained either from the Linux distribution (please be sure to use a compatible version) in form of native package or from the distributors of these pre-requisites.

Note: SALOME version 9.5.0 patches some third-party pre-requisite products, such as ParaView, Netgen, Open CASCADE Technology and other. These patches solve different problems and introduce some specific features needed for SALOME project.

❖ LICENSE

SALOME platform is distributed under terms of the GNU Lesser General Public License (LGPL) license version 2.1. All used pre-requisites use similar or compatible licenses (with minor exceptions). Detail information about licenses used by SALOME and its pre-requisites can be found on the following page: http://www.salome-platform.org/downloads/license/.

See also "*License restrictions*" paragraph above.

❖ KNOWN PROBLEMS AND LIMITATIONS

- The following modules are obsolete and not included into this SALOME release: FILTER, SUPERV, MULTIPR, VISU (Post-Pro). 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.

- 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.

- SALOME in general supports reading of documents from earlier versions but the documents created in the new version may not open in earlier ones. However, some studies may work incorrectly in SALOME 9x; mainly it concerns studies with Post-Pro data in which med v2.1 files have been imported. Due to removal of med v2.1 support and deprecation of Post-Pro module in SALOME series 9x, there can be problems with opening of such studies in SALOME.

- 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.

- Compilation of OCCT by Makefiles on a station with NVIDIA video card can cause 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 (*Note: you need root permission to do this*):

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

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

- Stream lines presentation cannot 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 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.

    o Different visual artifacts may take place in ParaView or VTK viewer when using a remote connection; this is a limitation of indirect rendering: ParaView uses OpenGL 2.0 backend which some features are not supported by indirect rendering.

    o PARAVIS module compilation can fail on 64-bit platforms when building `ParaMEDCorba` plugin (due to crash of `kwProcessXML` tool during generation of the plugin documentation). In such case it is necessary to unset `VTK_AUTOLOAD_PATH` environment variable and restart the compilation, for example:

      `[bash%]` unset VTK_AUTOLOAD_PATH

    o Loading big files in ParaVis might render SALOME instable. This problem is expected to be fixed in one of the next releases; it can be temporarily avoided in the current version by applying one of the two solutions below:

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- In ParaVis settings (ParaVis tab), disable the use of the external pvserver. This approach has the limitation that it is not possible to execute ParaVis' Python scripts outside the SALOME graphical interface (for instance, from an external terminal).

- In ParaVis settings (ParaView tab → RenderView tab), increase the amount of memory under "Remote/Parallel rendering options" to something bigger than the default 20 MB (for example 200 MB).

  o ParaVis module executes ParaView-related code in the standalone `pvserver` process that is launched with `--offscreen-rendering` option; this can cause problems with displaying data in ParaVis module if graphic card driver does not support off-screen rendering feature.

- Med library (`medfichier`) can read only MED files of version 2.2 and newer.

- Users can experience OpenGL issues when running SALOME on virtual machines or with Intel graphic chipset. As a workaround, SALOME Windows archive contains the *opengl32.dll* library, which can be used as follows:

  o In the extraction folder of SALOME, go to subfolder: *SALOME-9.5.0\W64\mesa\x64*,

  o Select and copy *opengl32.dll*,

  o In the extraction folder of Salome, go to subfolder*: SALOME-9.5.0\W64\GUI\bin\salome*,

  o Paste *opengl32.dll*,

  o Eventually, edit file *run_salome.bat* SALOME launcher and add at line 11:

    `SET MESA_GL_VERSION_OVERRIDE=3.2`

- Sometimes a crash may be experienced on Windows when putting contents of the YACS graph to a *Bloc* node.

- For Windows 10 operating system, the Microsoft Visual C++ Redistributable for Visual Studio 2017 is required. It can be downloaded from the official Microsoft site:

  https://support.microsoft.com/en-us/help/2977003/the-latest-supported-visual-c-downloads

  For convenience, the distributable is included into the SALOME archive as well.

- On Linux SALOME requires Python 3 package to be installed. If you don't have it, use the corresponding Linux package manager (rpm, dpkg, apt-get, yum, etc.) to install it. Alternative solution (which can also be applied on the platforms which do not provide native Python 3 package, like CentOS 6) to launch SALOME consists in using the environment script included into the SALOME archive, as follows:

```
$ cd SALOME-9.5.0-<OS>-SRC
$ . ./env_launch.sh
$ salome
```

  Here, `<OS>` is an alias for the operating system being used, e.g. `CO7` for Linux CentOS 7.

- Because of the known 8192 character command line limit, On Windows, the installation directory should be as short as possible, e.g. C:\SALOME\SALOME-9.5.0.

- On Linux and Windows, the installation folder should not contain spaces or special characters.

- The automatic link between Shaper and Mesh modules is under beta testing. The behavior will not be optimal if several iterations between the two modules are done by the user.