



# **OBJECT MANAGER PACKAGE**

## **USER'S GUIDE**

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## I. Introduction

This plugins package has been developped to extend the current Scene features :

- easily rename your objects and change their properties
- create normalized pipes
- create planes using 1,2 or more points
- create lines and contours
- create custom spheres
- create custom circles
- rename the scans (use with caution)

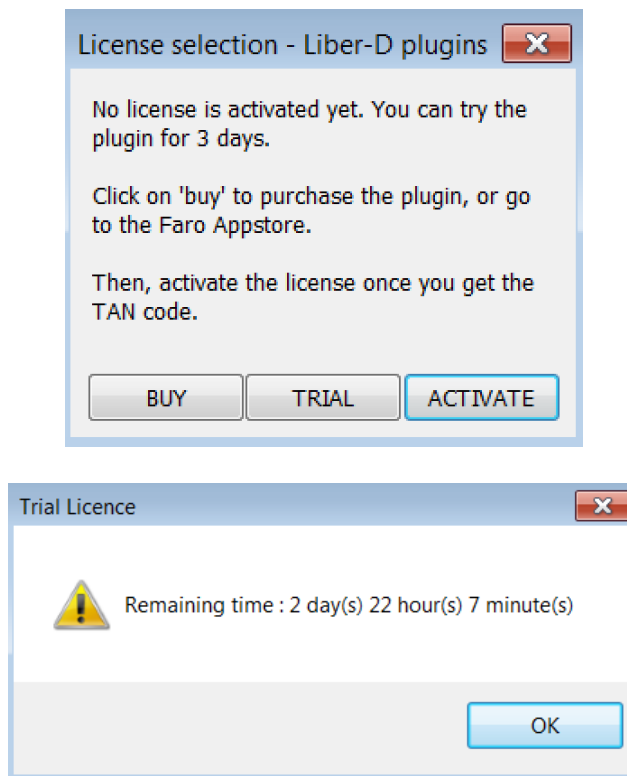
## II. Installation

Open Faro Scene or Scene LT and go into tools – Apps, and install the fpp file.

Licensing :

You have to be online to activate the plugin.

Click on an icon of the plugin (red icons) to open the trial \ buy \ activation interface.

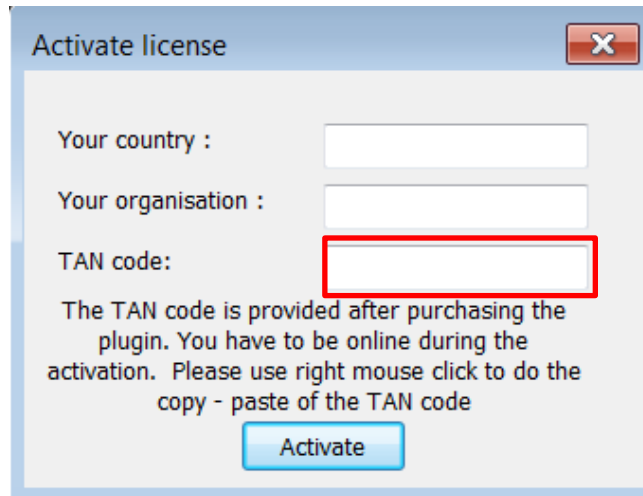


The plugin can be tested for 3 days. After this period, you can buy it on the Faro Appstore. Clicking on buy will open the Faro website :

<http://www.faro.com/faro-3d-app-center/scene-plug-in-apps>

Go to the Liber-D Object manager package and click on buy.

After buying the plugin, you'll get a code in your mailbox (we call it « TAN code »). Please copy-paste this code to activate the plugin (please use **right mouse click\paste** to paste the TAN code, as CTRL+V doesn't work in this window). You must be online to do the activation as your computer will be connected to a license server.



Activate license

Your country :

Your organisation :

TAN code:

The TAN code is provided after purchasing the plugin. You have to be online during the activation. Please use right mouse click to do the copy - paste of the TAN code

Activate

Once the activation is ok, you can use the plugin.

In case you are using several versions of Scene on your computer (5.3, 5.4, 5.5, + LT versions...), you can install the plugin on all of them without buying a new license.

### III. Using the plugins

#### a- General



The plugins are represented by red icons :

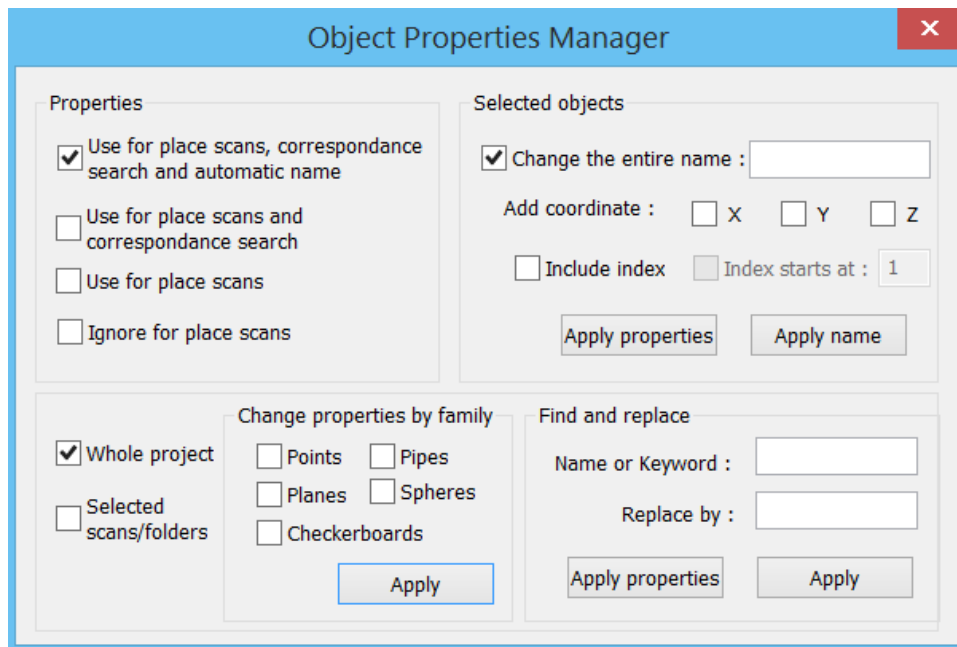
Op : object properties manager  
Pi : pipe manager  
Pl : plane manager  
Li : line manager  
Sp : sphere manager  
Ci : circle manager  
Sc : scan manager (renaming of the scans)

First of all, when the plugin is started, you'll be asked to choose the unit (meters or feet). Indeed, the internal unit in Scene is always the meter, even if feet are set in the options table.

Once the unit is set, it will be used for this plugin during the whole work session. To change it, you'll have to close / open Scene, or to deactivate / activate the plugin.

#### b- Object properties manager

Easily rename the objects and change their properties.



## **Workflow:**

### **Changing the properties of the objects:**

Select the objects in the structure tree or in a view.  
 Select the property type (use for place scan, ignore...)  
 Click on “apply properties”

### **Changing the entire name of the objects:**

Select the objects in the structure tree or in a view  
 Set the new name in “change the entire name”  
 Click on “Apply name”  
 You can also choose to add a coordinate value in the name, and an index (001, 002...)

Our plugin allows giving the same name to several objects in a single scan.

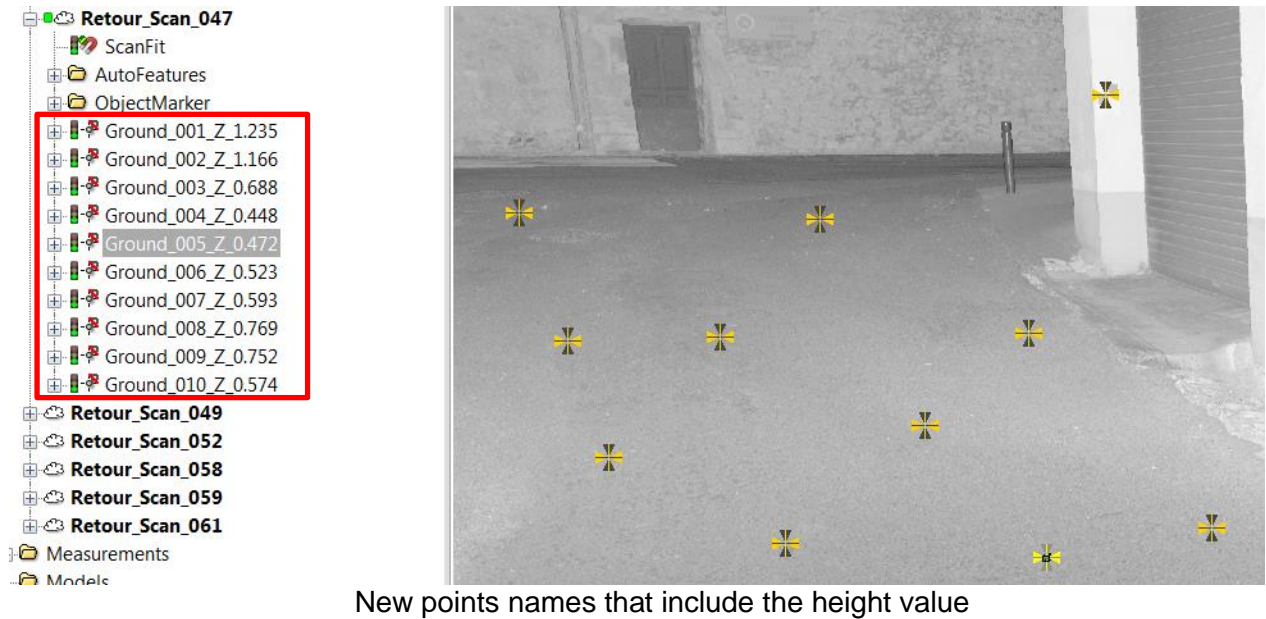
### **Changing the properties of a family of objects:**

Select the scans or a folder, or whose the whole project  
 Select the type of object  
 Select the property  
 Click on “Apply”

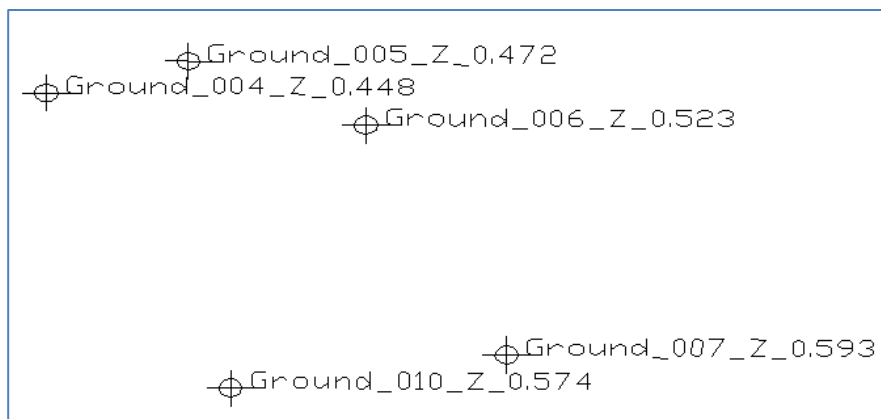
### **Find and replace:**

It is also possible to find & replace the object names. Select the scans, the folder, or choose the whole project to start the search.  
 Then, type in the keyword you want to find.  
 You can either type in a keyword or the entire name. In case you want to find and replace the objects by using a keyword, the objects have to be named by using « \_ » (underscore) between the words.

## Example : Point\_ground\_001



New points names that include the height value

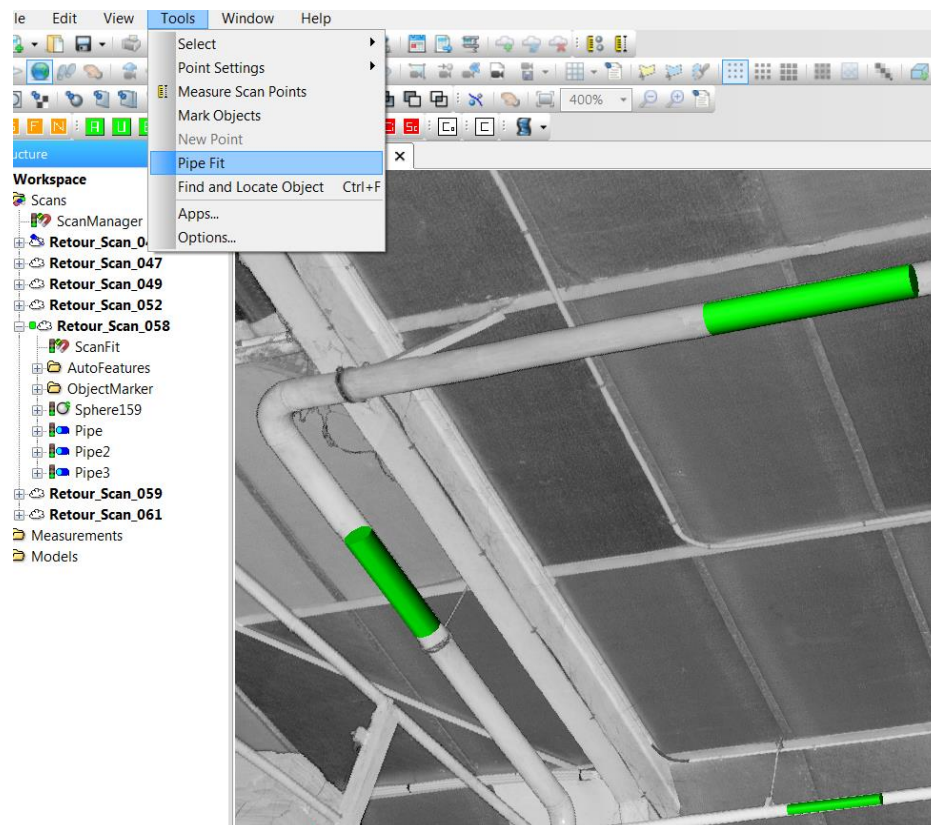


Result in Autocad, after exporting the points (use our free txt/dxf plugin)

### c- Pipe manager

This feature allows changing the pipe diameter and applying a standard value.

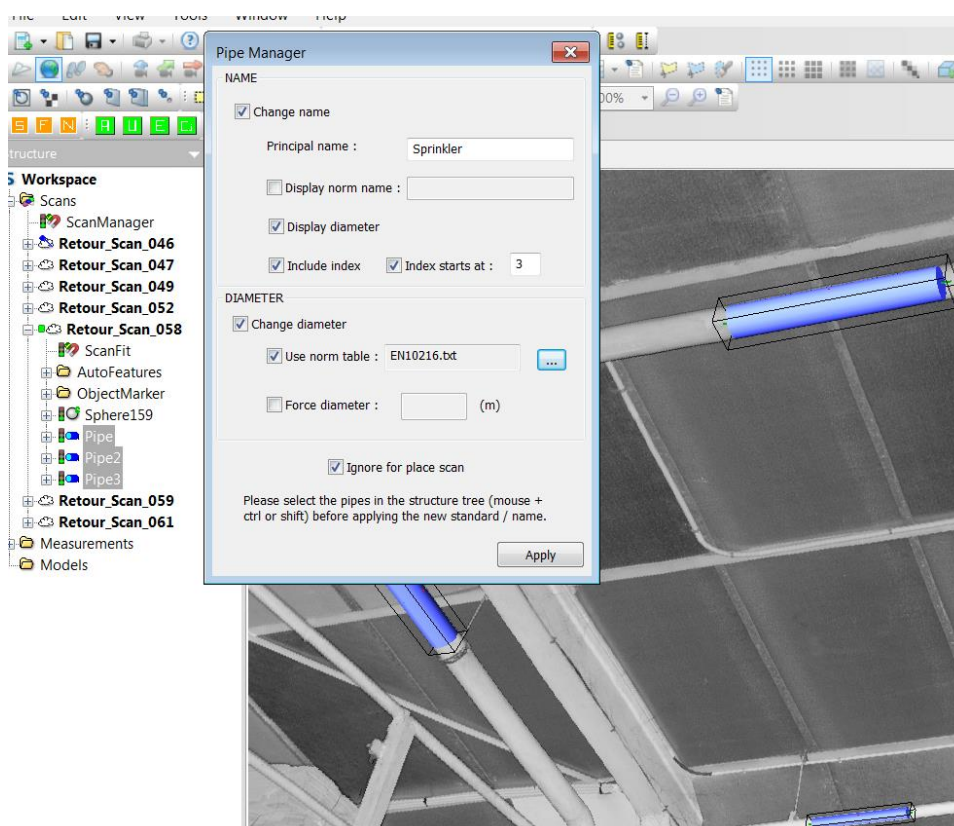
First step : create your pipes in a scan (quick or planar view), using the pipefit feature of Scene.



Step 1 – create the pipes with the pipe fit feature of Scene

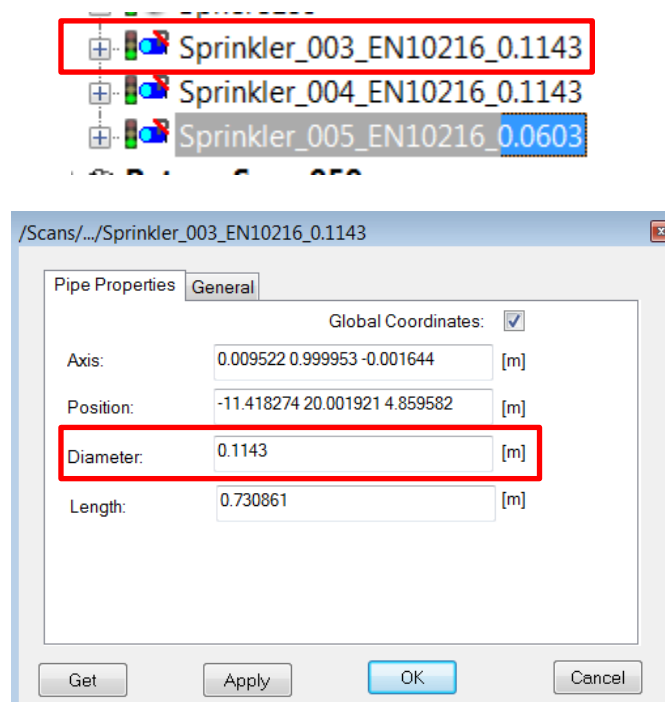
Step 2: start the plugin (Pi icon) and select the pipes in the structure tree (mouse + ctrl or shift). You can give a name to the pipes, choose to include the norm and \ or the diameter in the pipe name, and add an index.

You can also choose a norm table (.txt file that contains the normalized diameters in meters or inches), force the diameter, and ignore the pipes for the registration.



Step 2 – start the plugin, choose a name, the display options, and a norm, or force the diameter

The new diameters are applied to the pipes, and the pipe names contains all the information needed :



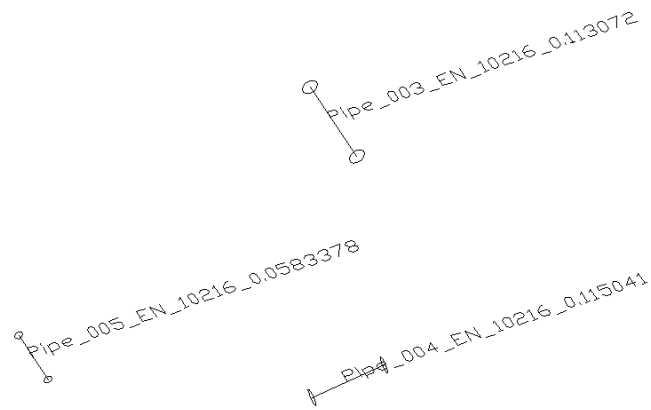
Example of a table : just give the pipes diameters (ascending values) and save as a txt file

```

EN10216.txt -
Fichier Edition
0.0213
0.0269
0.0337
0.0424
0.0483
0.0603
0.0761
0.0889
0.1016
0.1143
0.1397
0.159
0.1683
0.2191
0.273
0.3238
0.3556
0.4064

```

These pipes can be exported for CAD purposes (use the free txt\dxfl plugin).



Pipes in Autocad

**Tip :** in case your scans contain several types of pipes (sprinkler, HVAC, plumbing etc...) it is better that you first create all the pipes of a family, for example hot water. Then, select the pipes in your scan and apply the plugin.

Once this is done, create the pipes of another family and apply the plugin again.

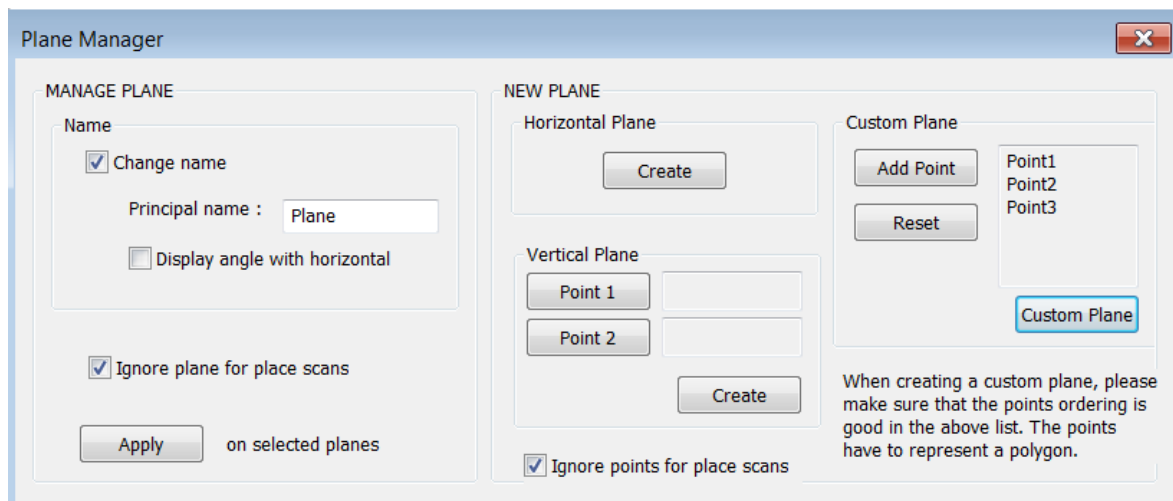
This way you'll keep a good structure.

Use our free txt\dxg export plugin to easily export the pipes and use them in your CAD software.

#### d- Plane manager

A plane detection feature already exists in Faro Scene: automatic extraction, or based on an area.

Our new feature allows creating very reliable planes from single points selected by the user. These planes can be used for registration or be exported.



It is possible to create :

- a custom plane with 3 or more points. If more than 3 points are selected, the plugin will create the best mean plane
- a horizontal plane using 1 point\*
- a vertical plane using 2 points\*
- you can also choose to include the vertical angle value in the plane's name

*\*uses the inclinometer information of the scan*

First of all, you have to create the points, either in the quick \ planar view, or in the 3D view in case you are using a scanpointcloud.

The points that will be used to create the planes can be selected in several scans.

You can also create the planes from spheres and checkerboards.

You can create planes using surveyed points that are in the reference folder.

## **Workflow:**

To create a plane, select the points in the structure tree or in the quick \ planar view.

Then, click on “Add” if you selected 3 or more points.

The plane outline follows the point ordering.

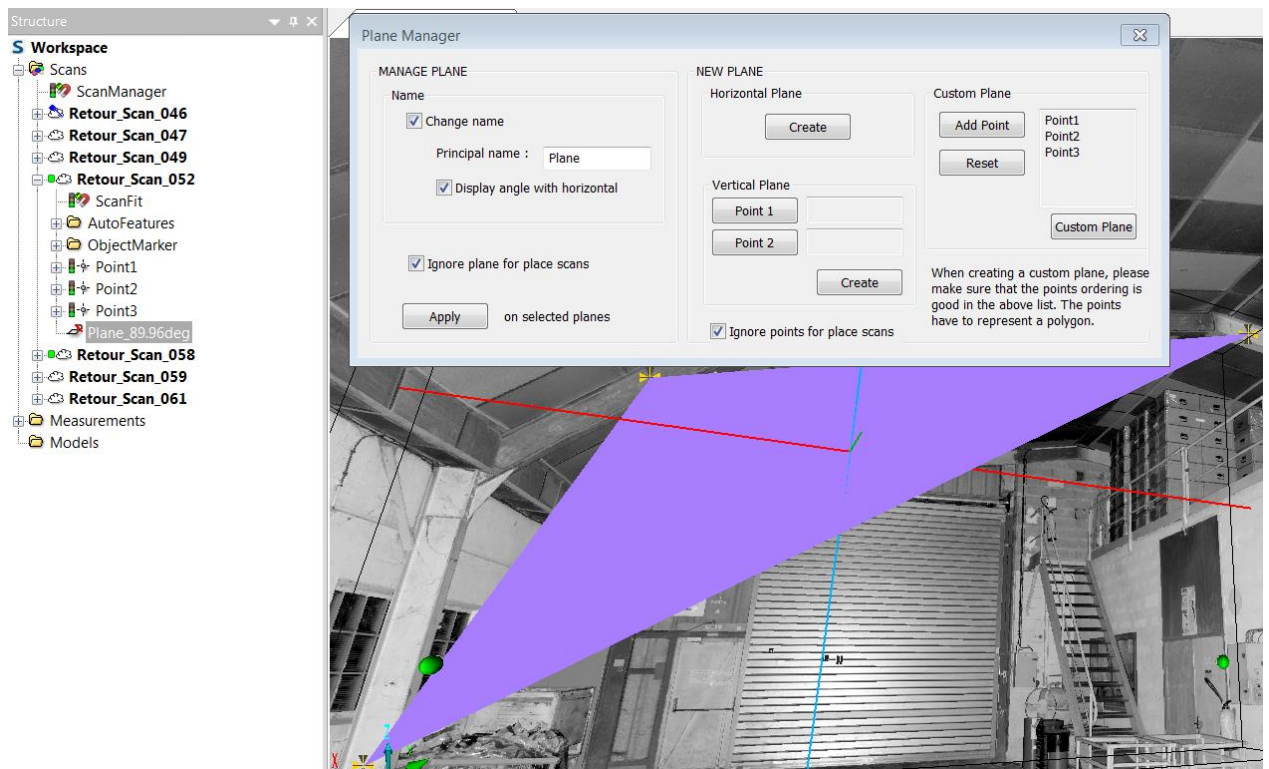
In case you are using more than 3 points, please add them in a logical way, otherwise you might create a strange polygon.

Then, click on “custom plane” to create the plane.

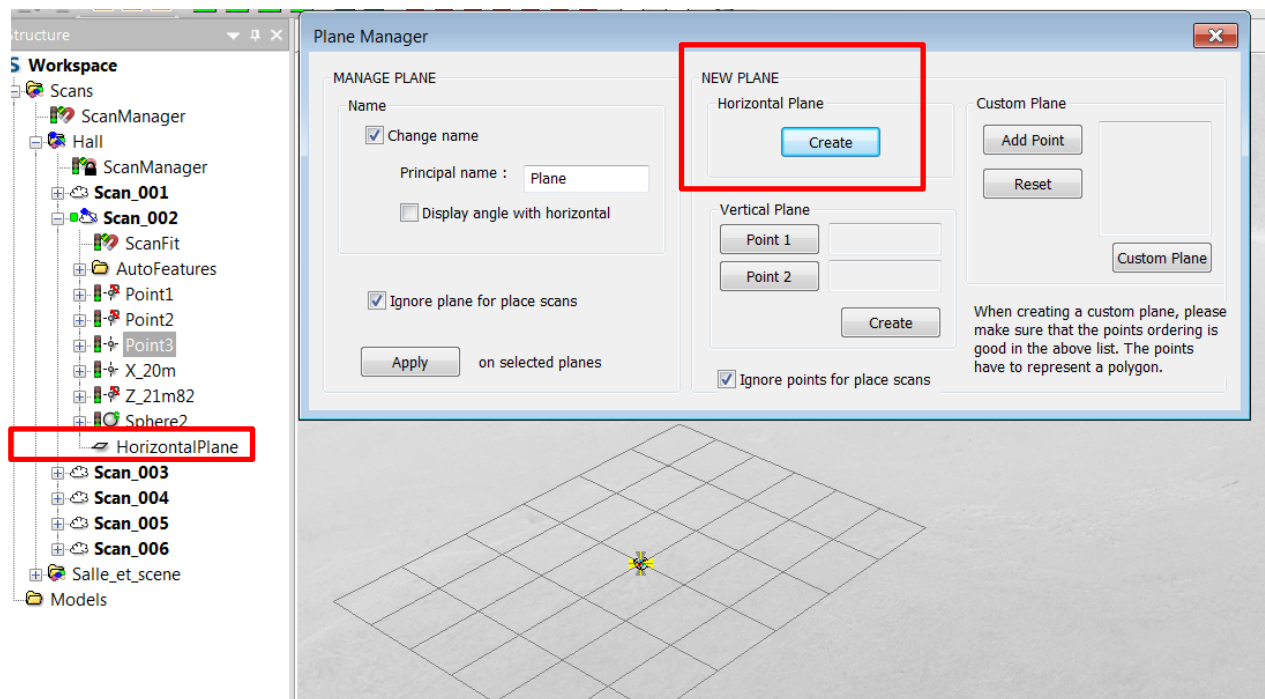
In case you want to create a vertical plane using 2 points, select the first point and click on “Point 1”. Do the same for the second point with “Point 2”.

To create a horizontal plane, just select one point and click on “Create”.

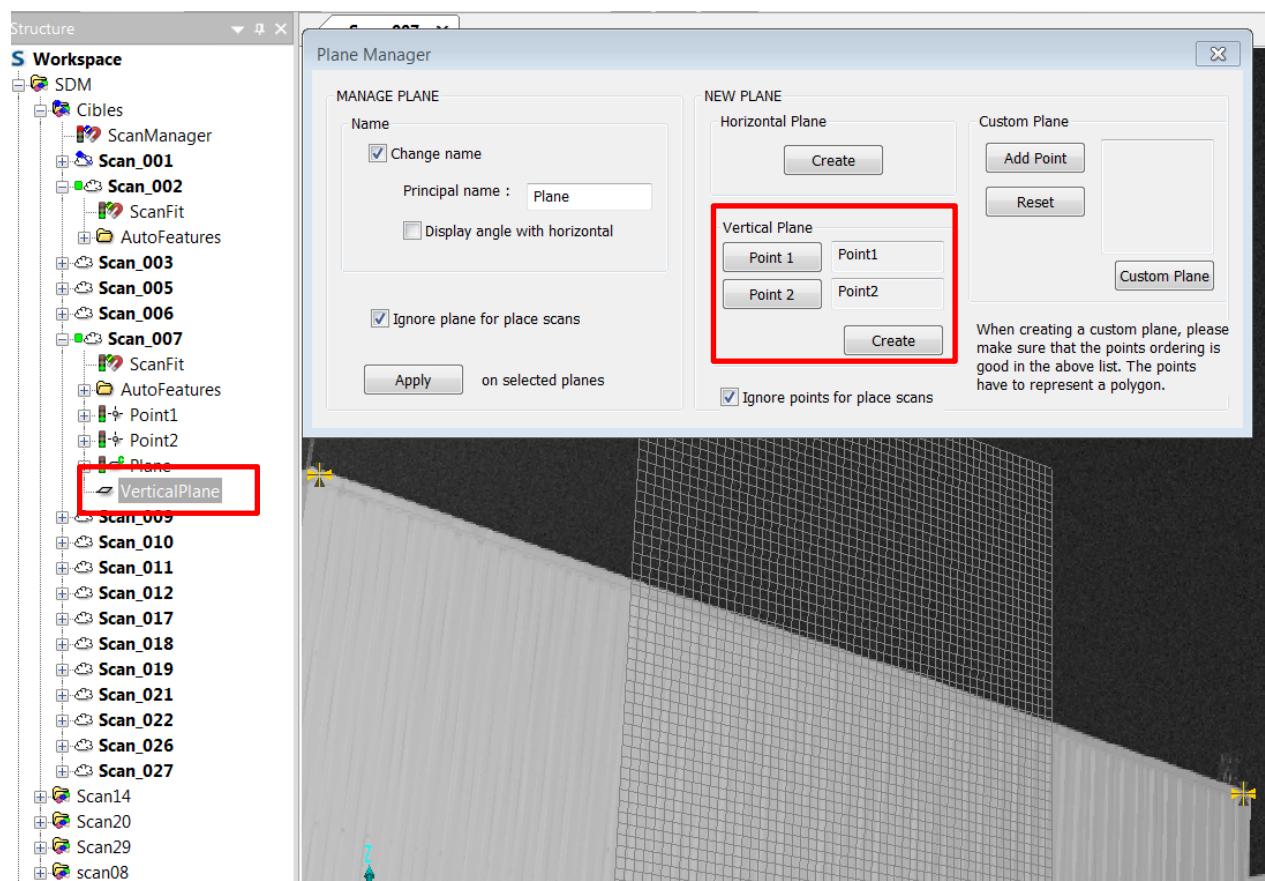
Once the plane is created, you can change its name and include the angle value. Don't forget to select the plane before applying the new name.



Plane created on a steel structure with 3 points



Plane created on the ground with 1 point + inclinometer



Vertical plane created by using 2 points + inclinometer

The planes can also be created from the reference points that were captured by a total station, and then be used as reference planes.

## e- Lines

Creates lines and polylines from selected points. You can also force a value, for example Z, if you want your line to stay horizontal. You can also create an automatic point at the end of the polyline.

### Workflow:

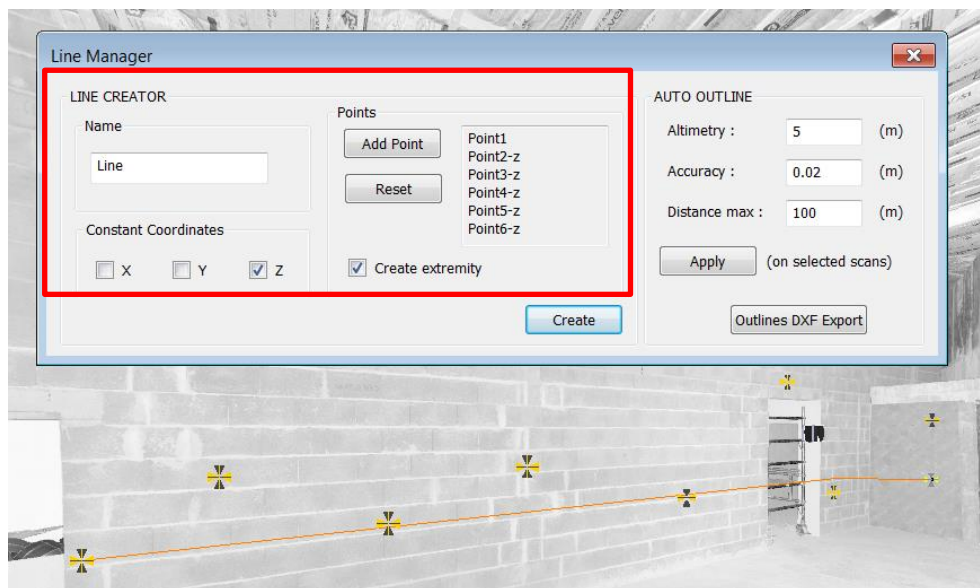
Create the points, even if they are in several scans.

Add them in a logical way as the plugin will follow the point ordering. You can also select several the points in a scan in the structure tree with the CTRL and SHIFT keys.

If you want to keep a constant coordinate, for example Z, in order to get a horizontal line:

Add a first point, let's say point1, and tick Z. Then, when you add point2, you'll see a small 'z' in its name, which means that the line will stay horizontal, with the same height as point1. As long as Z is ticked, the polyline will keep the height value of point1.

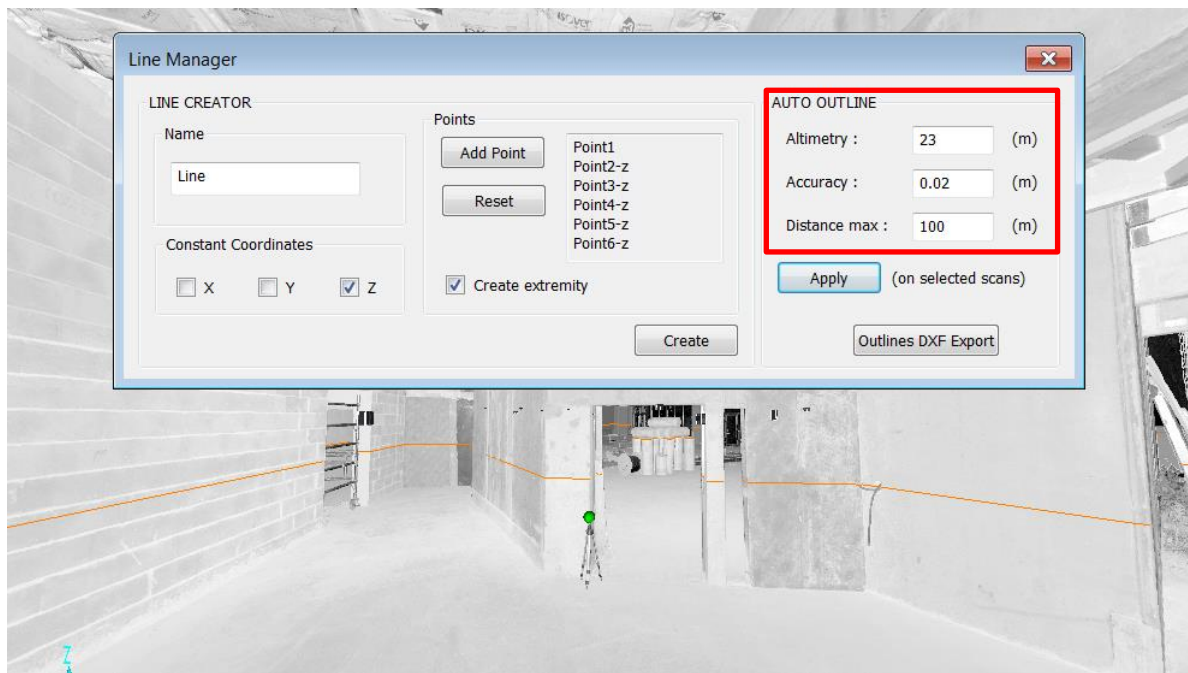
If you tick x,y, or z, and add a list of points that you selected in the structure tree, all the points except the first one will have a -x, -y, -z extension, showing that this coordinate will be constant.



Line created from a list of points, with a constant z value

Outline (contour) : this feature automatically extracts a polyline that follows the pointcloud. This feature can only be used to create horizontal contours. Set a height value (please give a value that exists in your scan, otherwise it might crash !)

The contour can only be created in single scans. The result can be directly exported as a dxf file.



Automatic contour generated in the scan

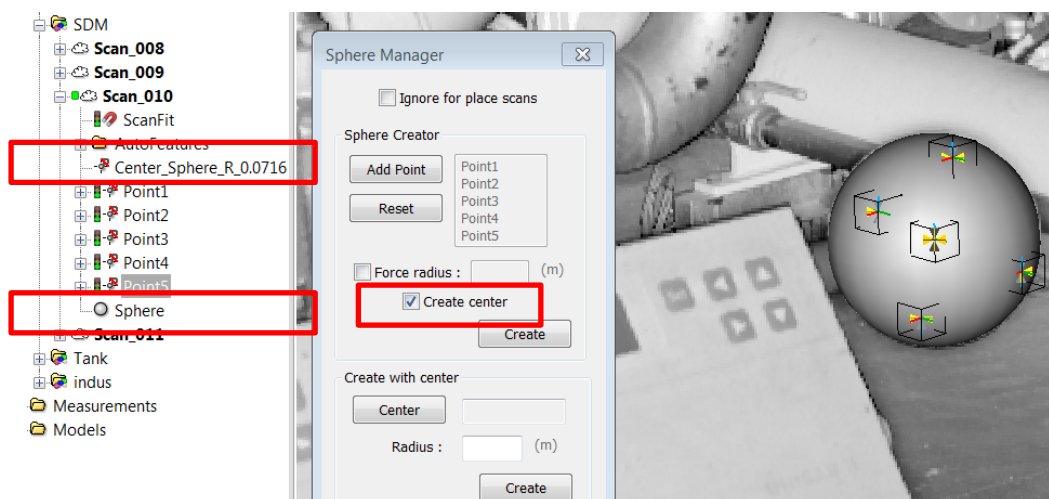
#### f- Spheres

Creates spheres from a selection of points. The radius value can be forced, for example to match a target sphere radius.

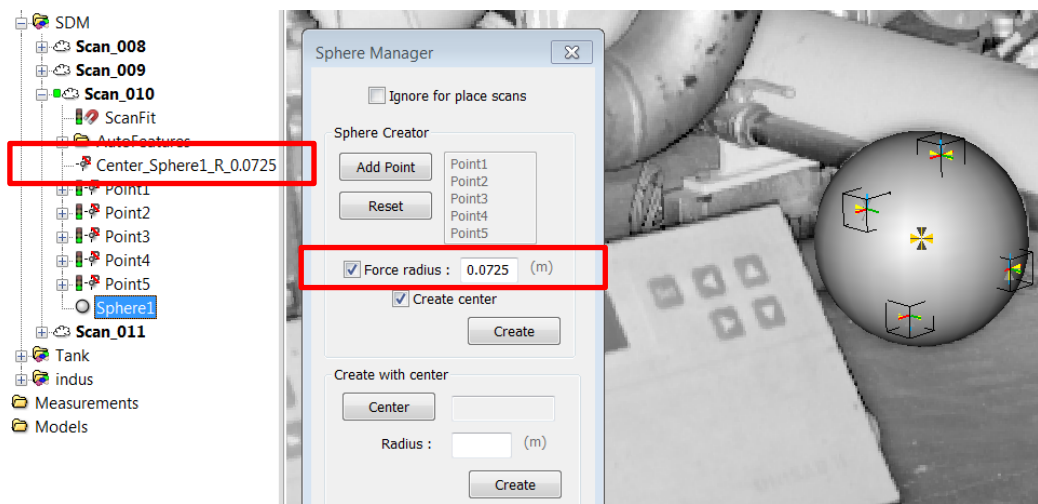
You can also create the center point. This point will contain the radius value in its name.

Please try to have a good point distribution to optimize the calculation.

It is also possible to create a sphere by giving the center and a radius.



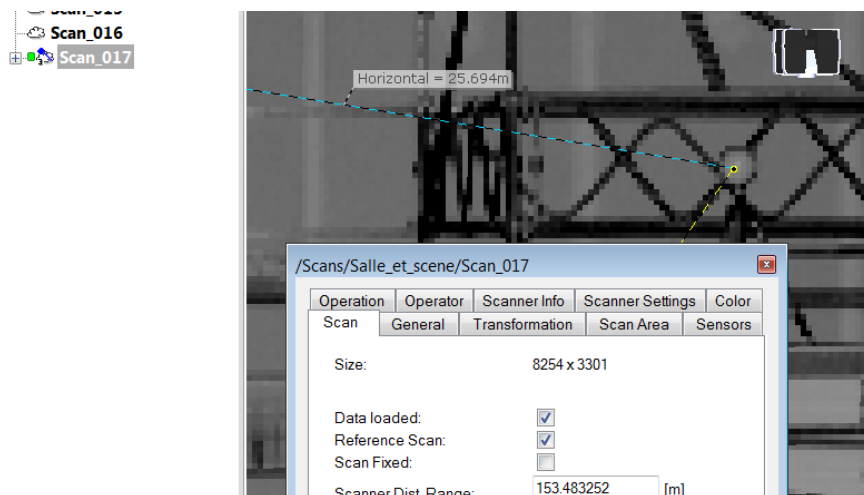
Sphere created from a selection of points, with an automatic radius calculation



Sphere created with a forced radius (72,5mm here)

**Tip :** if you want to create a sphere that is far away from the scanner and that was captured with only few points, it might be easier to create the points in the 3D view (you need a scanpointcloud to do this).

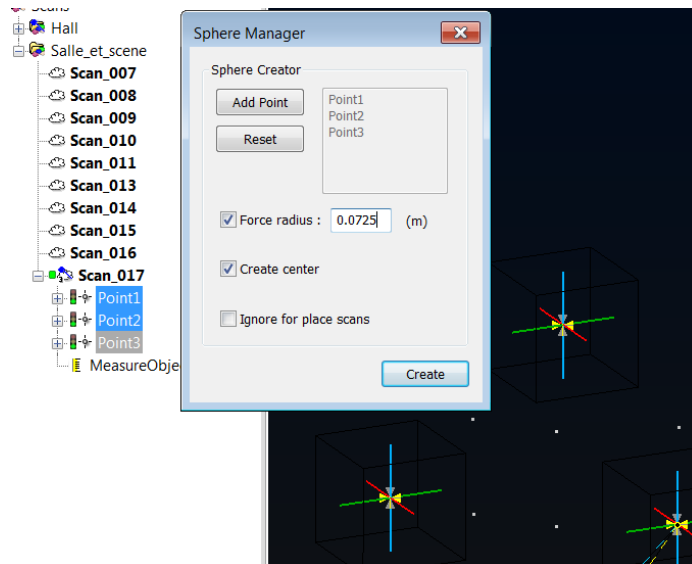
Example of a sphere that was captured with only few points:



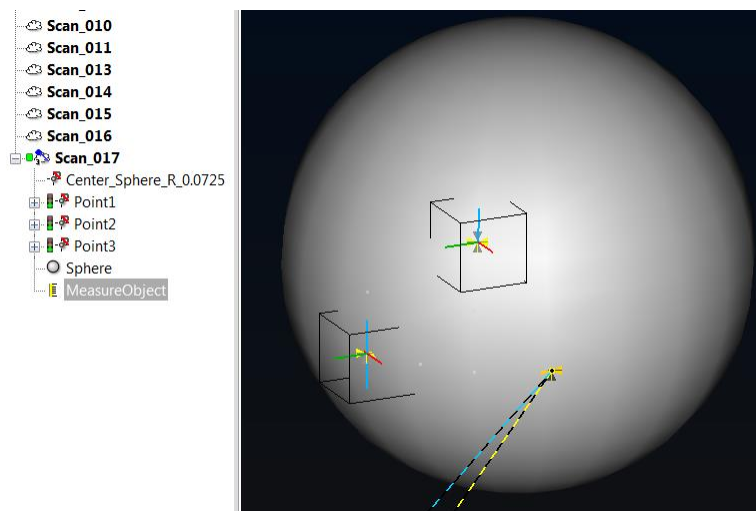
72,5mm radius sphere located at 25,7m from the scanner (1/5 resolution)



Points created on the sphere in the 3D view (scanpointcloud)

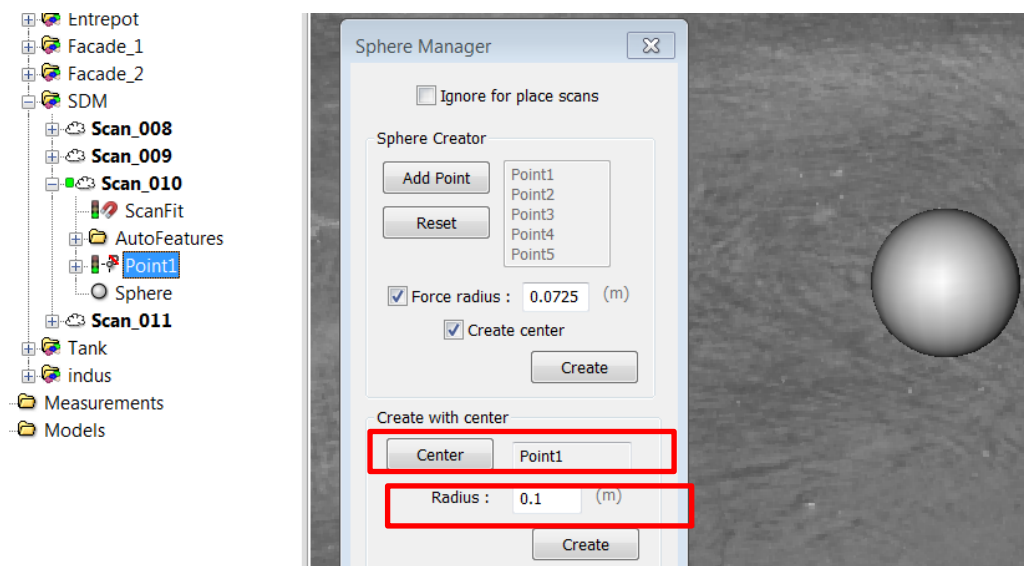


Select the points, add them and force the radius (0,0725m)



A 72,5mm radius sphere is created

It is also possible to create a sphere by using one point (center) + the radius :



Custom sphere created with one point and a radius

These spheres can be used for registration.

## g- Circles

This feature allows creating custom circles.

### Workflow:

#### Create a circle with 3 or more points:

Select the points, add them, and create the circle. You can also create an arc from the points. Try to have a good point distribution to optimize the calculation.

You can force the orientation of the circle: horizontal or along the x y axis. Setting the horizontal orientation is helpful when creating a circle on a vertical tank.

#### Create a circle with one point and a radius:

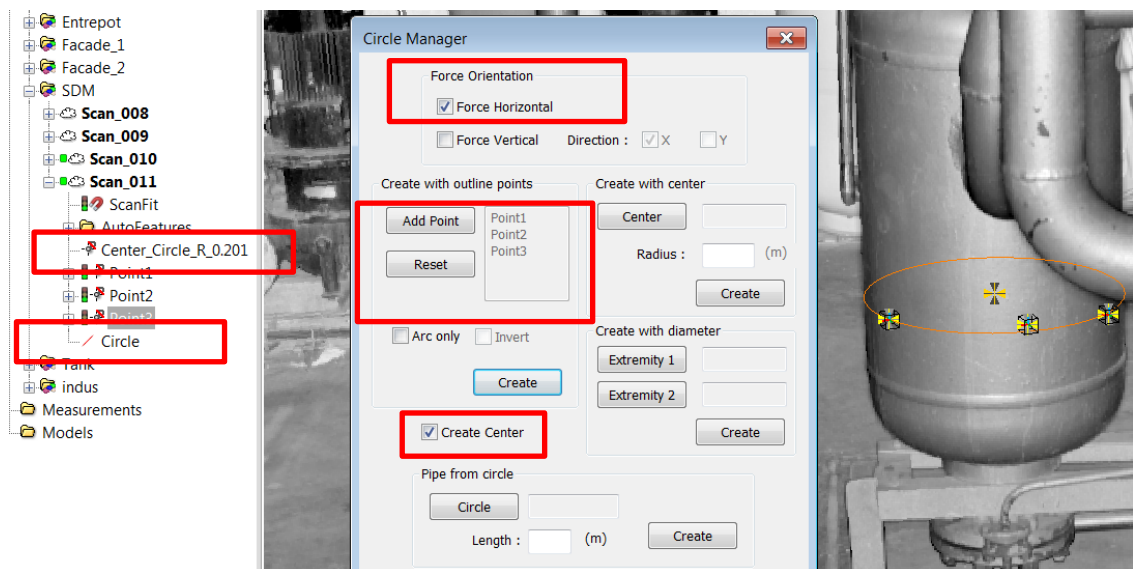
Select the point and click on center. Then, give a radius value. Finally, choose an orientation, and click on “Create” under the radius

#### Create a circle with 2 points that define the diameter:

Select the first point and click on “extremity 1”. Do the same for the second point. Then, click on “Create”. The circle orientation will follow the slope defined by the 2 points, unless you force the orientation

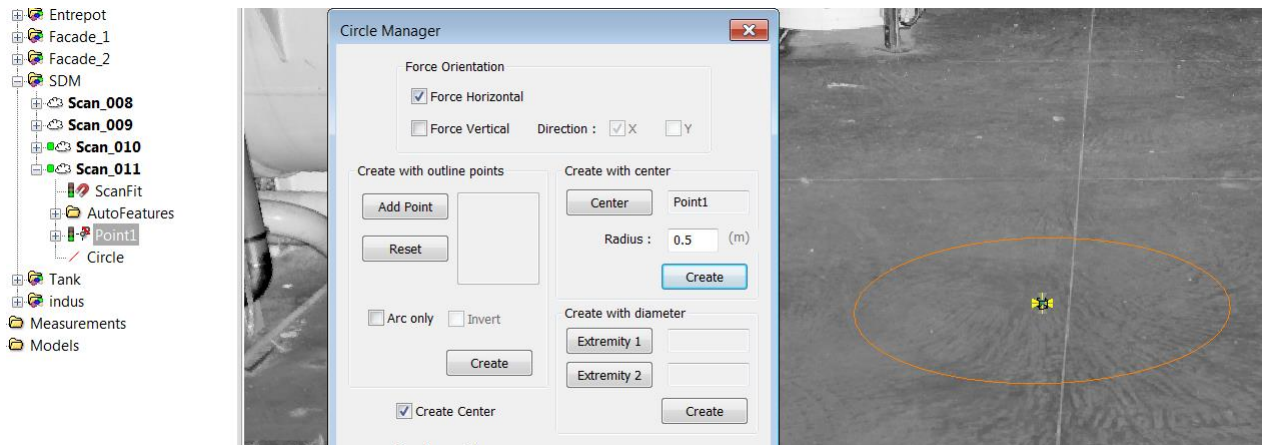
#### For all circles:

In case you select “Create center”, it will add a point at the center of the circle. This point will contain the radius value of the circle in its name.

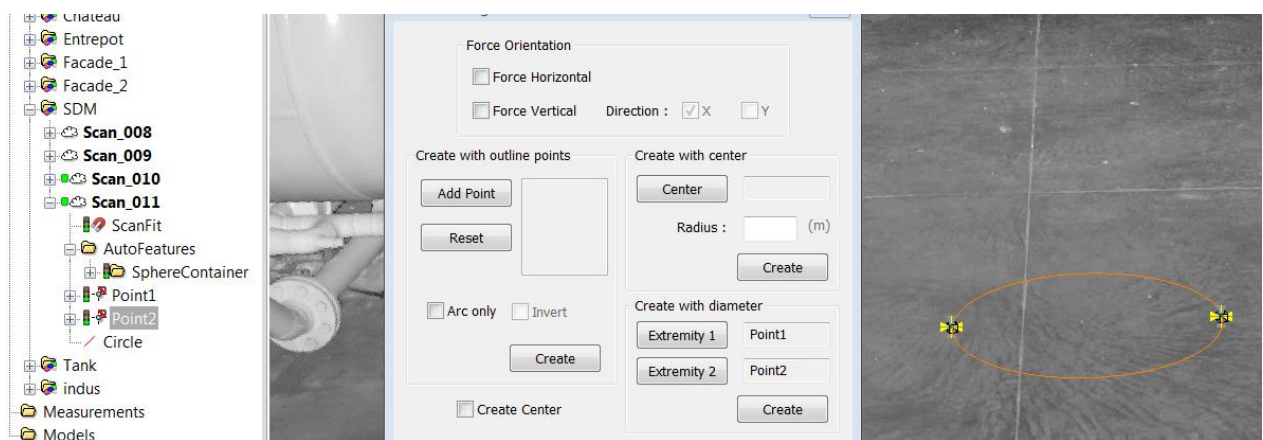


Horizontal circle created with 3 points

Once a circle is created, you can also create a pipe from it and choose the length.



Horizontal circle created with 1 point and a radius



Circle created with 2 points. This circle will follow the slope defined by the 2 points, unless you force the horizontal / vertical orientation

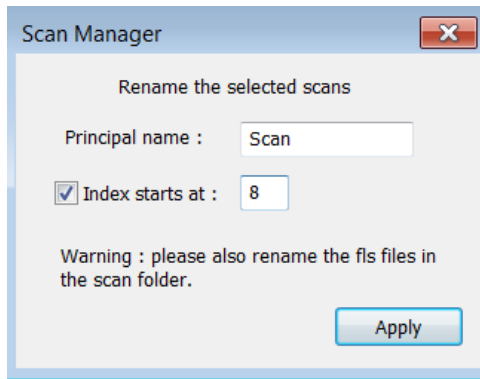
## h- Scan renaming

Allows the renaming of the scans. Select the scans in the structure tree, give a name and choose a start index.

Please be aware that the plugin will follow your selection : if you first select the scan that is at the bottom of your list, and then do a mouse + shift to go to the one at the top, the plugin will give the first index to the scan that is at the bottom.

**IMPORTANT :** you will also have to manually change the fls files names in the scanfolder accordingly, otherwise Scene will loose the connection between the renamed scans in the structure tree and the fls files !

After renaming the scans in the structure tree and in the revision folder, you'll have to close and to open the project again to keep the connection between the scans in the structure tree and the fls files.



#### IV. Known issues

Sometimes, the new created object doesn't appear in the quickview at the first creation, but it is created in the structure tree. Just erase it and click on « Apply » again.

Don't store the pipes text tables in a subfolder that has a very long path. The plugin might not be able to find it.

When erasing the points that were used to create an object in the quick view, they might still appear in the view but not in the tree anymore. Just close the view and open it again. This small bug is probably caused by a refreshing problem in the quickview.

e-mail : [support@liber-d.fr](mailto:support@liber-d.fr)

#### V. Updates

Revision 1 – 26 Dec 2015