Excel to CATIA

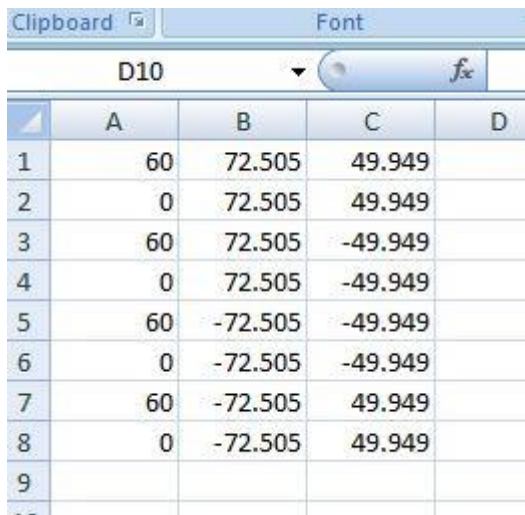## How to Create (import) Points in CATIA by their coordinate existed in an Excel File.

By Mahdi Sohrabi
mahdi.sohrabi70@yahoo.com

It is useful when you have a special curve or diagram and needed to Import it to CATIA. (EXP. Obtain a diagram in MATLAB and want to transfer it to CATIA or have some points and want to cross a surface over them).

I've found 2 methods for this, and depending on their performance, you can choose one of them.
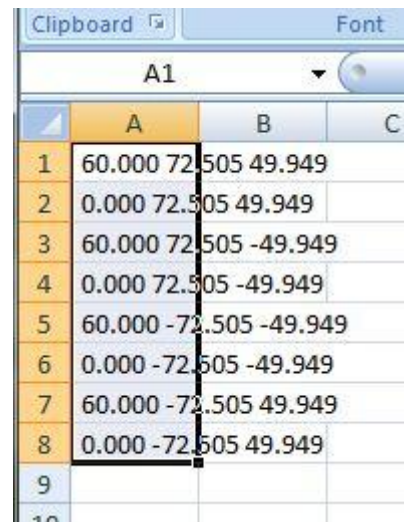
I explain the methods by an example:

We have 8 points that form a rectangular. The coordinates is shown blow:

The deference between right and left pics is that in Left, the coordinates are separated in A,B,C columns as X-Y-Z. But in Right, the Coordinates are not separated and all X-Y-Z are just in column A, but note that there is a Space between X-Y-Z

First method:

Go to the below Address, where the CATA is installed:

E:\CATIA V5R21\win_b64\code\command

And find an excel file with the name of:

GSD_PointSplineLoftFromExcel

First, get a backup of the file and save it.
Now open the file. As you see, there are several rows and columns of numbers (coordinates) that are grouped between **"Start Carve"** and **"End Carve".**

Each row addresses one point. And each group of points that are located between a pair of **"Start Carve"** and **"End Carve"** form a spline (one spline cross over the points of the group).

F1   X ✓ fx

	A	B	C	D	
1	StartLoft				
2	StartCurve				
3	0	-90	10		
4	0	-30	60	group1	
5	0	50	60		
6	0	110	20		
7	EndCurve				
8	StartCurve				
9	50	-60	0		
10	50	-10	40	group2	
11	50	50	40		
12	50	70	0		
13	EndCurve				
14	StartCurve				
15	100	-100	-10		
16	100	-40	35	group3	
17	100	0	50		
18	100	75	40		
19	100	140	0		
20	EndCurve				
21	EndLoft				
22	End				
23					

Here we don't want any spline, and just want to import the 8 points in CATIA. So we must delete the extra points coordinate and paste our specified coordinate instead of them. Changed file is like below….

C18   fx

	A	B	C	D
1	StartLoft			
2	StartCurve			
3	60	72.505	49.949	
4	0	72.505	49.949	
5	60	72.505	-49.949	
6	0	72.505	-49.949	
7	60	-72.505	-49.949	
8	0	-72.505	-49.949	
9	60	-72.505	49.949	
10	0	-72.505	49.949	
11	EndCurve			
12	EndLoft			
13	End			

After changing the file, open CATIA and create a new file with your own wanted name.

Now use **alt+f8** to Run the Macro in Excel file. (note that CATIA must be Opened and a new file must be created before this step).

By Running the Macro, a window appears. Choose "**feuil .Main**" and click on **Run** button.

Now another window appears, and there are 3 options:

1) If you type "**1**" and click on OK, just the **points** will be imported to CATIA.
2) If you type "**2**" and click on OK, the **points** will be imported to CATIA and **splines** will be crossed over the points of each group.
3) If you type "**3**" and click on OK, the **points** will be imported to CATIA and **splines** will be crossed over the points of each group, and finally a **surface** will be crossed over the splines. (for crossing a surface, 2 or more groups of points are needed).

Here, by our data, third option is not accessible. (but by default data in Excel file, all options are accessible, so try them yourself).

You can see the result in below. (option 1 in left, and option 2 in right).
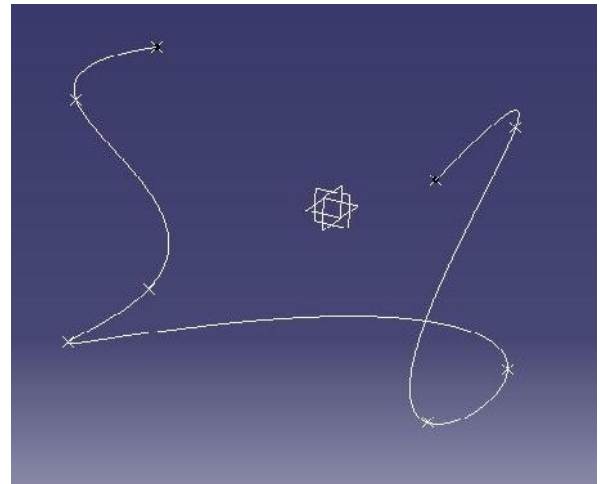
**Note:** in this method, the coordinates must be separated in columns A-B-C as X-Y-Z coordinates. (see page1).

Second method:

In this method we create a cloud of points, save it as *ASC*, and open it as *TXT* file, then replace our coordinates with its value and rechange it to *ASC* file for importing to CATIA.

To start, we need an initial cloud of points. If you do not have one, just create it easily.

To create an initial cloud of points, just create an optional surface and save it as **STL** file. Then go to *Shape>Digitized Shape Editor* and from *Cloud Import* toolbar and *Import* command, choose the *STL* file and Import it to CATIA. Then from *Cloud Import* toolbar, and *Export* command, export the file as *ASCII User Format (*.asc).

Now we have a cloud of points file. You can see the steps below...

Creat a simple surface and save it as STL file.

Export the STL file as ASCII User Format (*.asc)
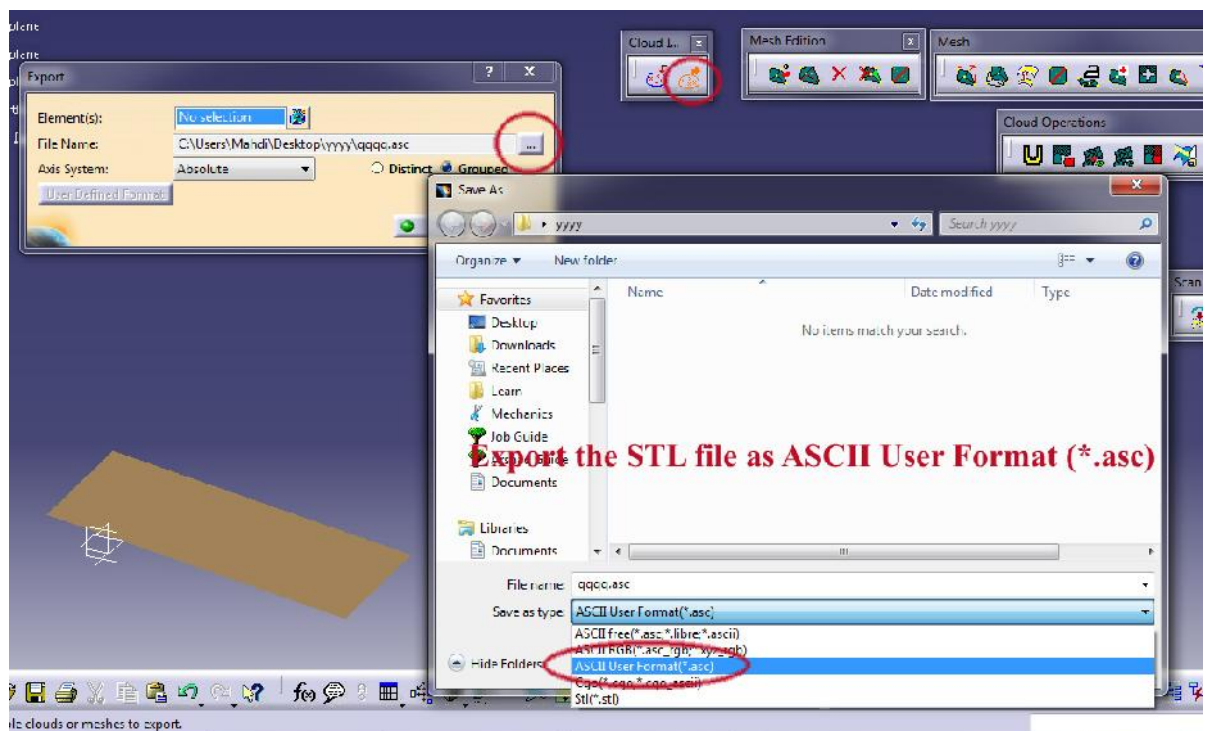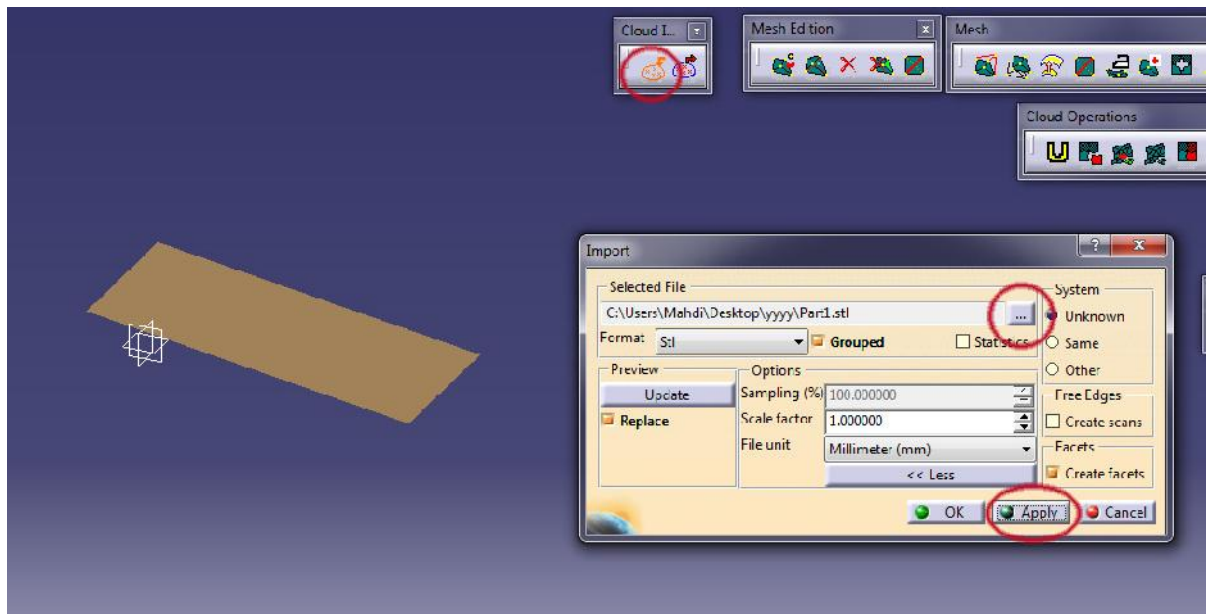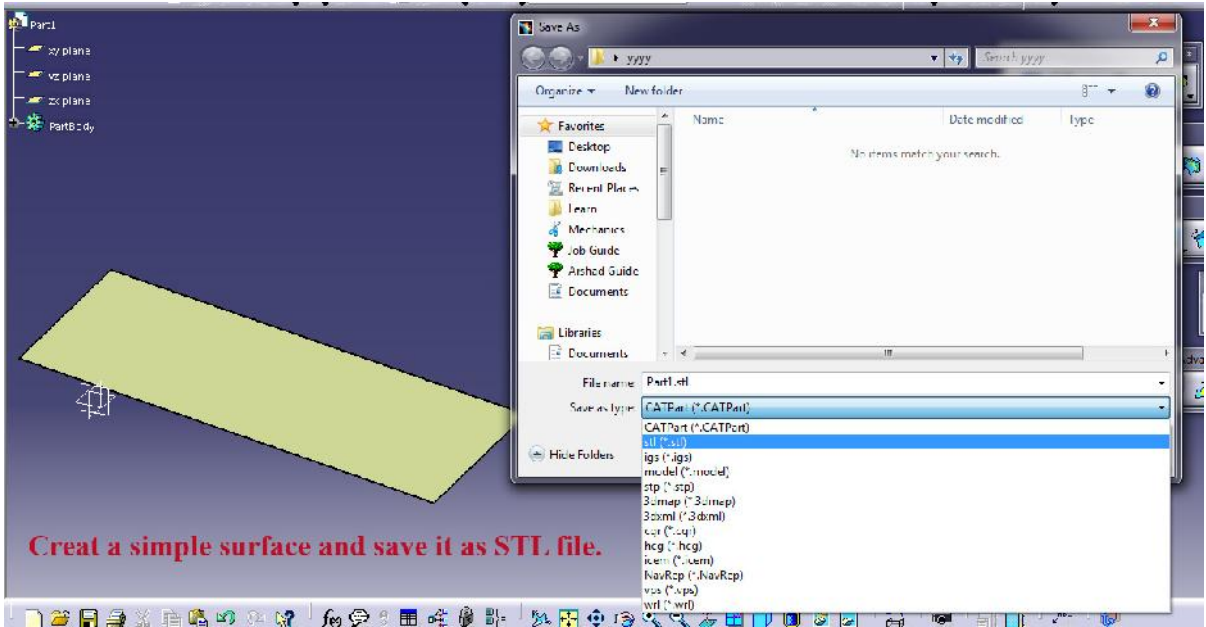
Now change the Extension of the exported file to **TXT**, just by renaming it. (EXP: qqqq.asc → qqqq.TXT).

In this step, open the file. You can see the coordinates in the file. Now just remove this coordinates and put your coordinates instead of them (Copy & Past).


Replace your coordinates with the existed values
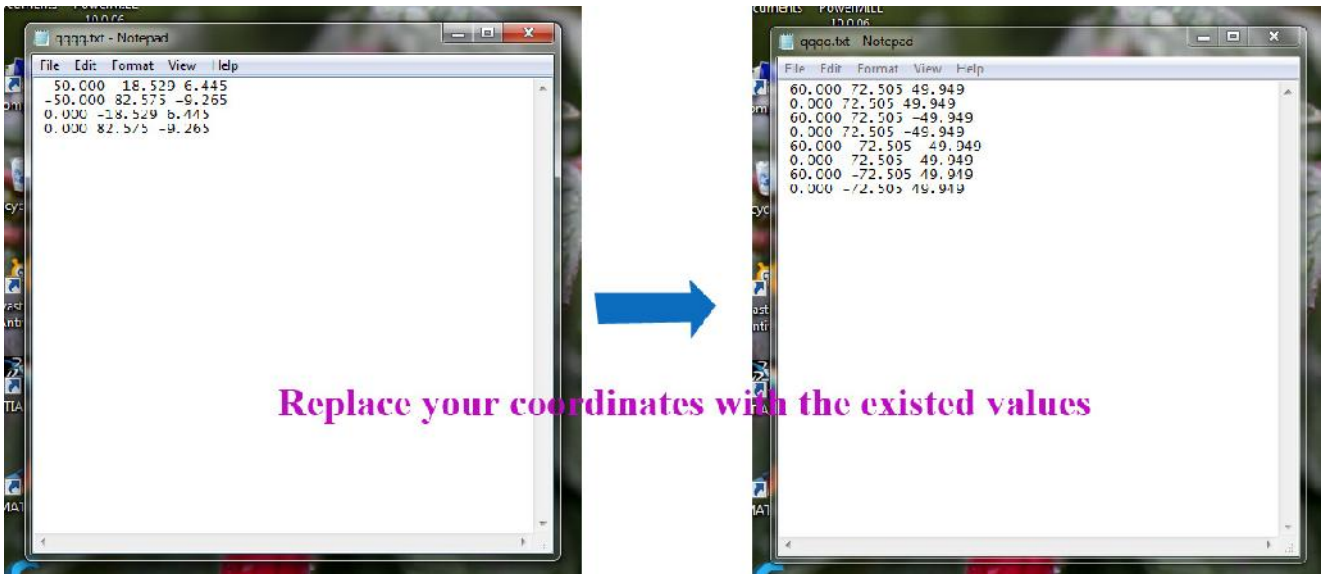
Now save the file (Ctrl+S), and change the extension of the file to *asc* again. (EXP: qqqq.TXT → qqqq.asc).

Now go to *CATIA>Shape>Digitized Shape Editor* and from **Cloud Import** toolbar and **Import** command, Import the modified **asc** file. You can see the considered cloud of points.

If you need each point as independent (isolated) point, you can decompose the cloud of point by **Cloud/Points** command from **Cloud Operation** toolbar.

See below Pics...
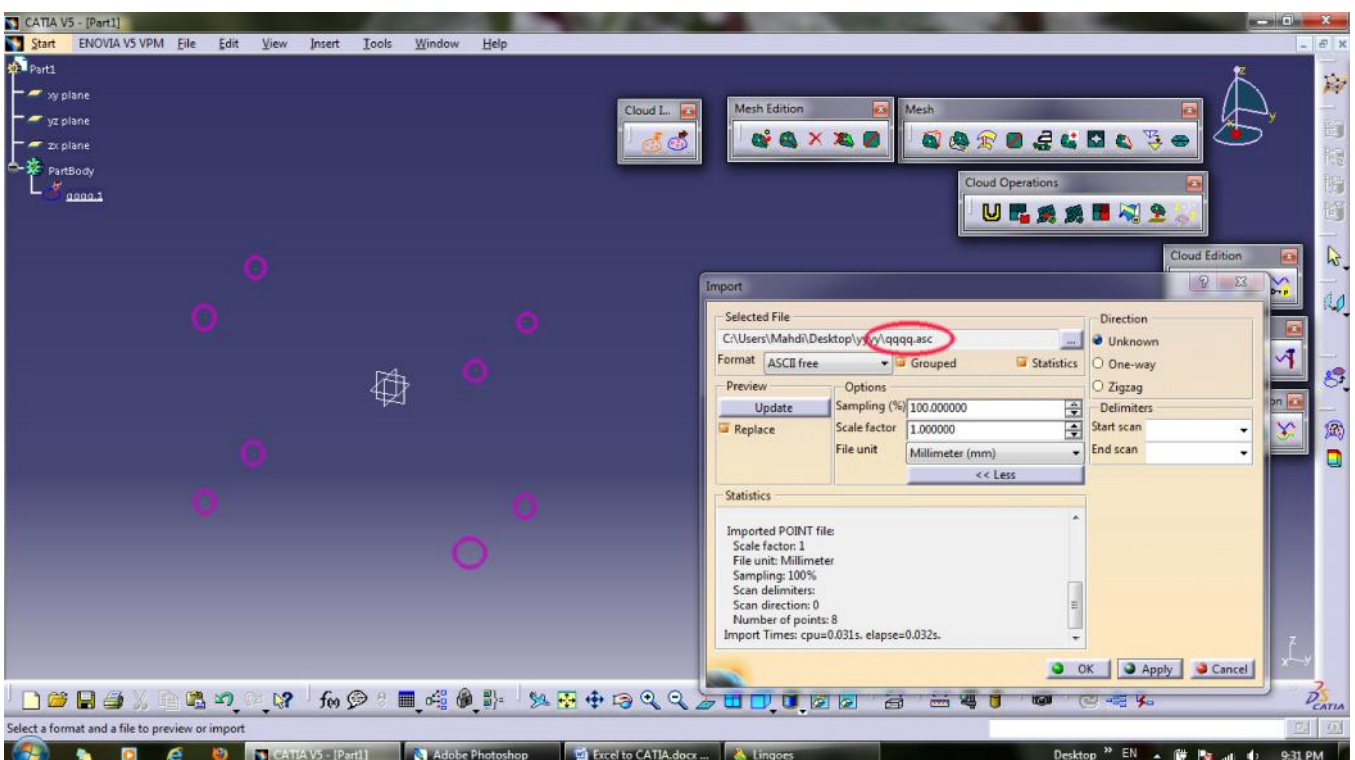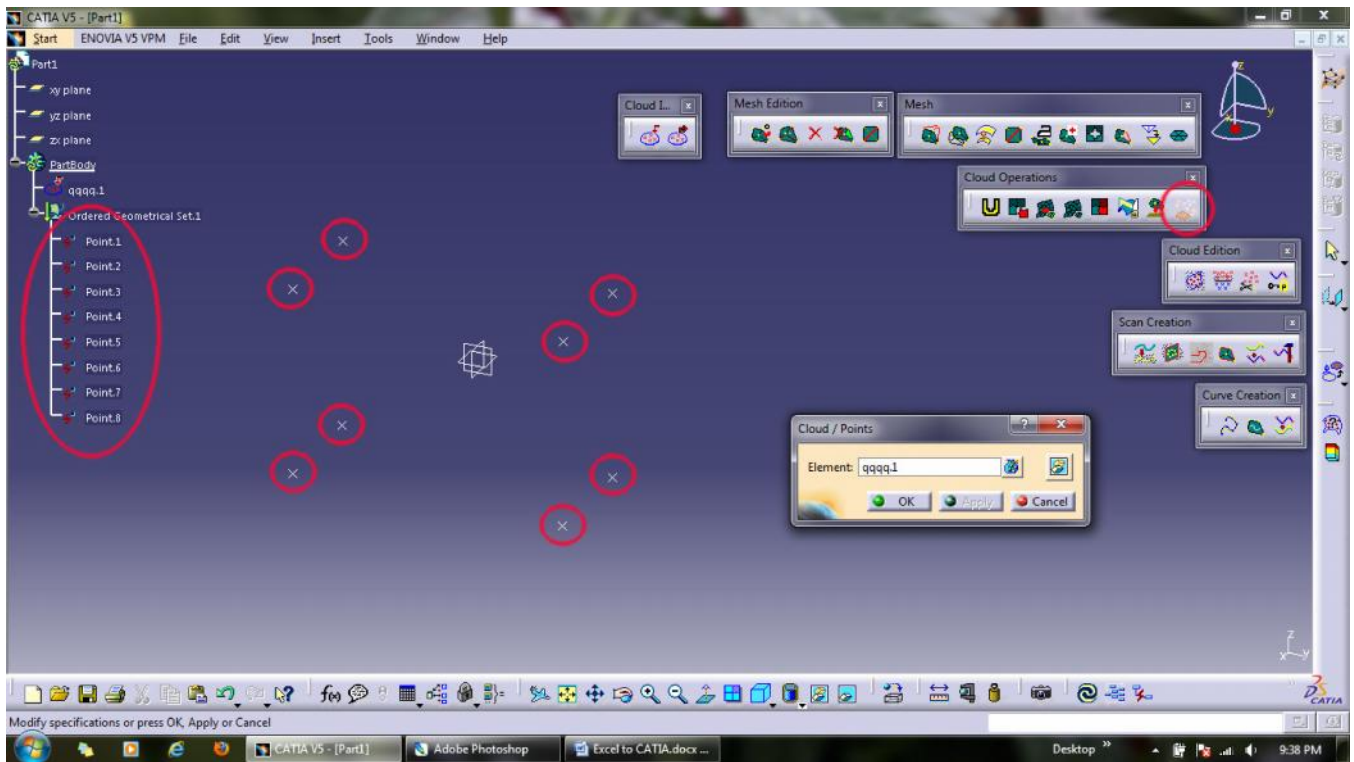
By Mahdi Sohrabi

mahdi.sohrabi70@yahoo.com

follow me on linkedIn: *http://www.linkedin.com/pub/mahdi-sohrabi/6b/629/3b2*

follow me on GrabCAD: *http://grabcad.com/mahdi.sohrabi-1*

follow me on Iran-eng: *http://www.iran-eng.com/member.php/383933-bigbomber*

June/15/2013