How To Export XYZ Coordinates of Datum Points to a File

This multi-step process allows a user to export the XYZ coordinates of a set of datum points in a Pro/ENGINEER file to a text file. This file can then be imported into Excel for further study.

The datum points can exist in either a Pro/ENGINEER part or assembly. If there are multiple sets of points in a model and you only wish to export some of the points, you can "hide" points that you wish to exclude.

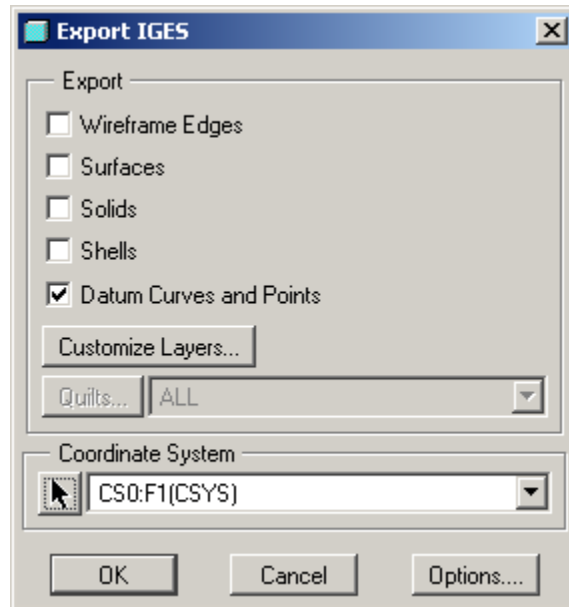There are two steps involved in exporting the point data:

- Create an IGES file containing only the points.
- Import the IGES file into a new model using the Offset Coordinate System Datum Point Tool and export the point data to a file with a ".pts" extension.

This point data file can then be imported into Excel or other applications.

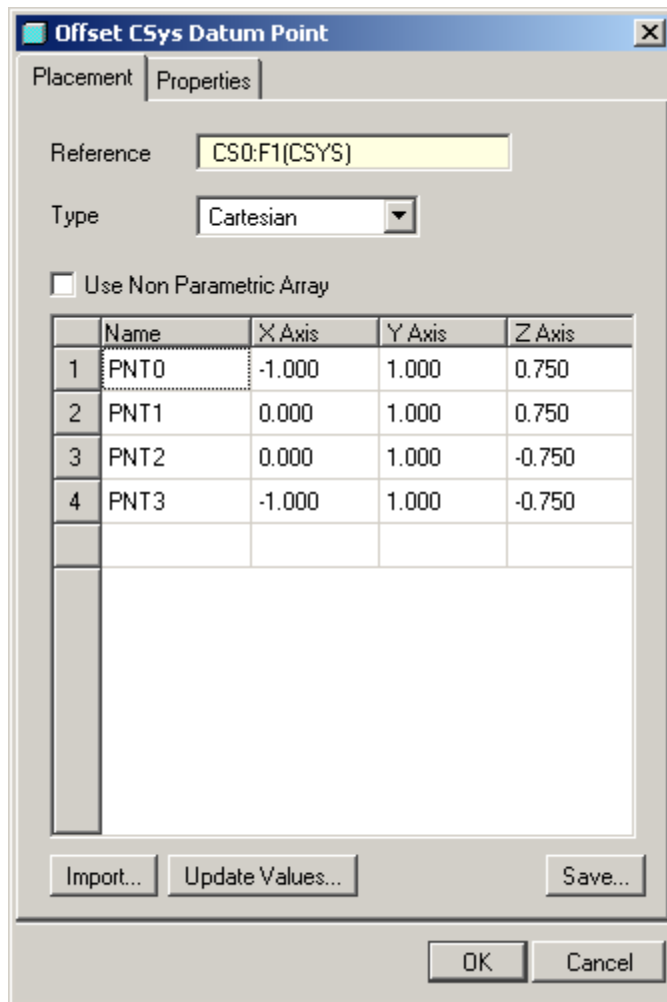The two step process is as follows:

1. Create an IGES file containing only the point data:
   a. In the Pro/ENGINEER part or assembly containing the points, if necessary, "hide" datum points you do not want exported.
   b. Select **File ➔ Save a Copy…**,
      i. set the "Type" to *IGES*,
      ii. enter a New Name for the IGES file,
      iii. select a destination folder for the IGES file,
      iv. select the $\boxed{\textbf{OK}}$ button.
   c. In the *Export IGES* dialog:
      i. ensure that only "Datum Curves and Points" is checked,
      ii. select a reference coordinate system and

iii. select the $\boxed{\textbf{OK}}$ button.

d. In Windows Explorer, navigate to the folder where you saved the IGES file and change the file extension from ".igs" to ".pts".

2. <u>Import the IGES file (with the .pts extension) into a new model:</u>
   a. Create a new Pro/ENGINEER part file using the default template.
   b. Import the renamed IGES file as follows:
      i. From the menu bar, select
         Insert ➔ Model Datum ➔ Point ➔ Offset Coordinate System.
      ii. In the *Offset CSys Datum Point* dialog:
         1. select a reference coordinate system,
         2. select the $\boxed{\textbf{Import…}}$ button,

3. navigate to the folder where you saved the renamed IGES file, select the file and select the $\boxed{\text{Open}}$ button (you can close the Information Window that displays),

Offset CSys Datum Point

Placement | Properties

Reference   CS0:F1(CSYS)

Type   Cartesian

☐ Use Non Parametric Array

	Name	X Axis	Y Axis	Z Axis
1	PNT0	-1.000	1.000	0.750
2	PNT1	0.000	1.000	0.750
3	PNT2	0.000	1.000	-0.750
4	PNT3	-1.000	1.000	-0.750

Import...   Update Values...   Save...

OK   Cancel

4. select the $\boxed{\text{Save...}}$ button and
    a. set the "Type" to *Pts File* (it should be the default),
    b. enter a New Name for the file,
    c. select a destination folder for the file and
    d. select the $\boxed{\text{OK}}$ button.
       (Your exported points file is created at this time.)
5. if desired, select the $\boxed{\text{OK}}$ button on the *Offset CSys Datum Point* dialog to import the points from the renamed IGES file into your Pro/ENGINEER model.

Your exported points file now exists in the folder you designated. You can open the file with a text editor or import it directly into Excel. The files contents are formatted as follows:

```
!
!         DATUM POINT ARRAY DATA FILE
!
! Comment lines should begin with an exclamation mark (!).
! You may have as many comment lines as you wish.
! There must be at least one space between values.
!
! Enter values with respect to datum arrays' coordinate system:
!
!CARTESIAN coordinates:
!         X                    Y                    Z
!
          -1.000               1.000                0.750
           0.000               1.000                0.750
           0.000               1.000               -0.750
          -1.000               1.000               -0.750
```

If desired, you can edit this file and remove the commented header before importing into Excel.