



Project Conversion

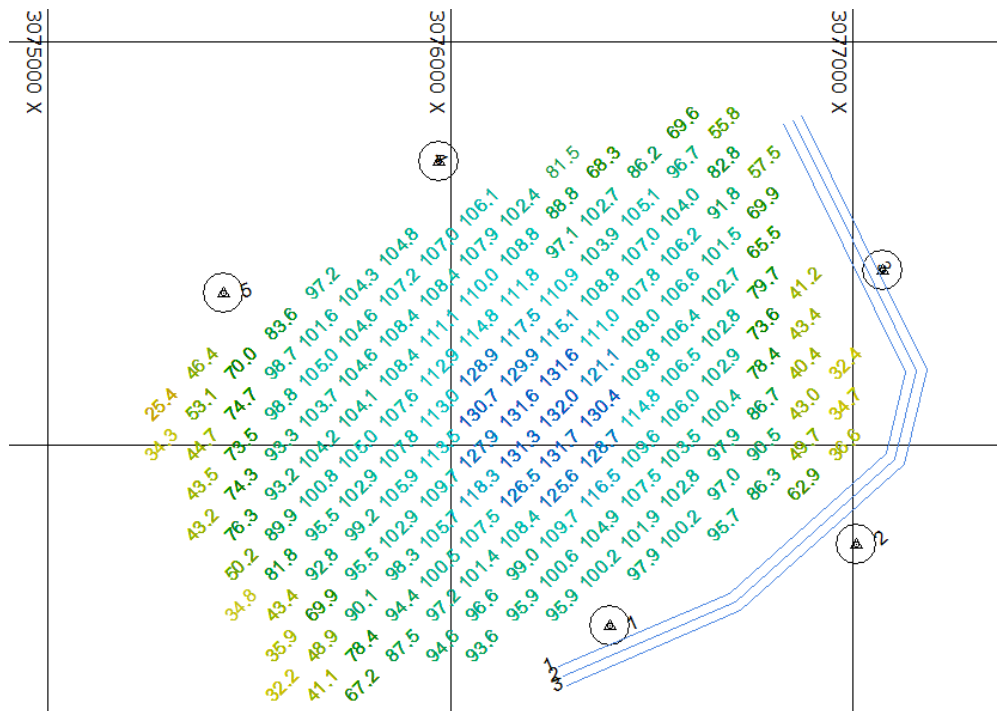
By Rob Baird

The PROJECT CONVERSION utility in HYPACK® can convert project files, along with edited and sorted data files, from a project with a certain set of geodetic parameters to a *new* project with a *different* set of geodetic parameters.

THE ORIGINAL DATA

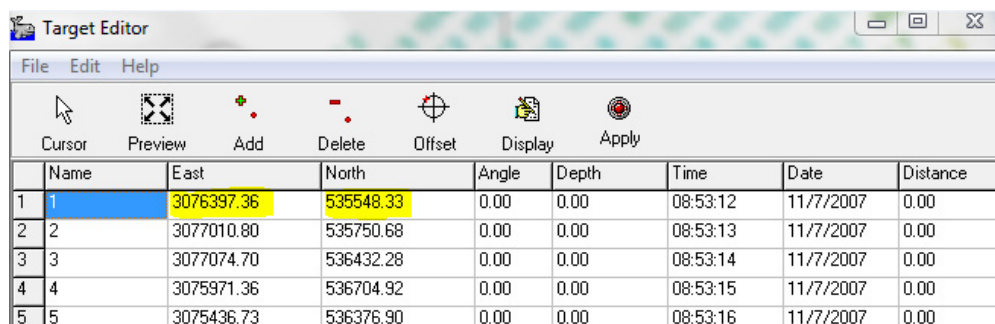
The following HYPACK® 2011 screen capture is taken from a project comprised of an XYZ file (.xyz), a planned line file (.lnw) and a target file (.tgt), as displayed in the HYPACK® Shell. In GEODETIC PARAMETERS, the grid is set as State Plane NAD-83, with the “LA-1701-Louisiana North” zone. We will use the PROJECT CONVERSION utility to convert this project into State Plane NAD-27.

FIGURE 1. Sample Project Data



Notice the coordinates of Target 1 from the NAD-83 project as shown in the TARGET EDITOR:

FIGURE 2. Sample Target File in the TARGET EDITOR



The screenshot shows the 'Target Editor' window with a menu bar (File, Edit, Help) and a toolbar with icons for Cursor, Preview, Add, Delete, Offset, Display, and Apply. Below the toolbar is a table with the following data:

	Name	East	North	Angle	Depth	Time	Date	Distance
1	1	3076397.36	535548.33	0.00	0.00	08:53:12	11/7/2007	0.00
2	2	3077010.80	535750.68	0.00	0.00	08:53:13	11/7/2007	0.00
3	3	3077074.70	536432.28	0.00	0.00	08:53:14	11/7/2007	0.00
4	4	3075971.36	536704.92	0.00	0.00	08:53:15	11/7/2007	0.00
5	5	3075436.73	536376.90	0.00	0.00	08:53:16	11/7/2007	0.00

These coordinates will be important later to test our completed project conversion.

THE PROJECT CONVERSION

To start the Project Conversion process, we must create a new project with the correct geodetic parameters. Our new project will be called "Sample_Project_Conversion_to_NAD27".

1. **Select State Plane NAD-27 as the desired grid** for the new project, while keeping the same zone of LA-1701 Louisiana North.
2. **Navigate to the available datum shift files** by clicking the ellipsis ("...") in the datum transformation parameters area.
3. **Select the datum shift file and click [Open].** For this example, we conus.1ls as shown in Figure 3 because it is for the continental United States and our data is in Louisiana.

FIGURE 3. Selecting the CONUS Datum Shift File

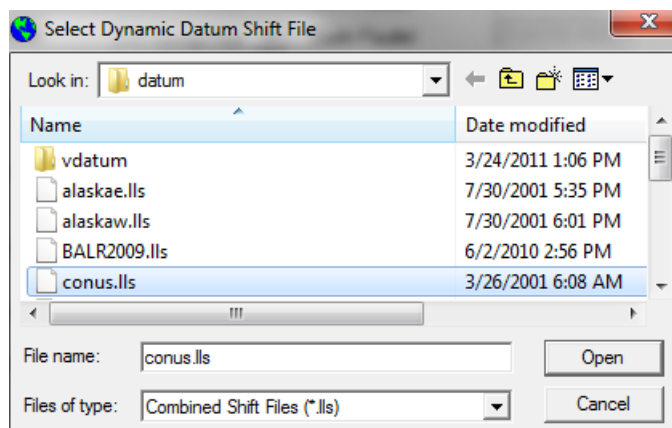


FIGURE 4. Configuring the NAD 27 Project

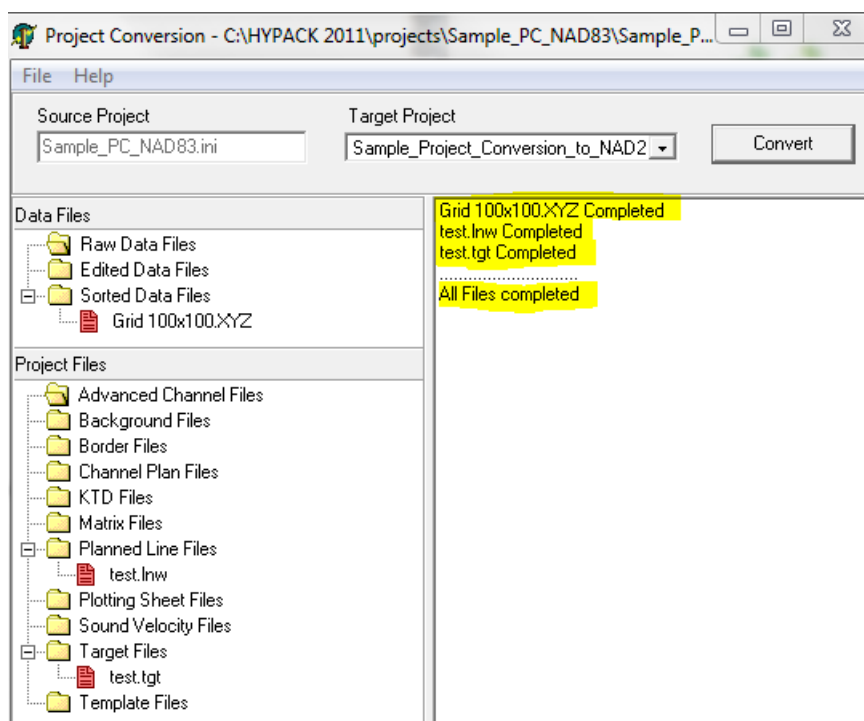
After selecting the “Conus” file, the geodetic parameters for our new project in State Plane NAD-27 are complete.

4. **Click [OK]** to save the changes and get ready for our project conversion.
5. **Enable all the files that we want to convert** in the HYPACK® Shell.
6. **Select UTILITIES > GEODESY > PROJECT CONVERSION.**
7. **Select our newly created project as the target project** and click [Convert] to complete the process.

FIGURE 5. Setting the Target Project in the Project Conversion

The program will inform us when the files have been converted, as shown highlighted in Figure 6:

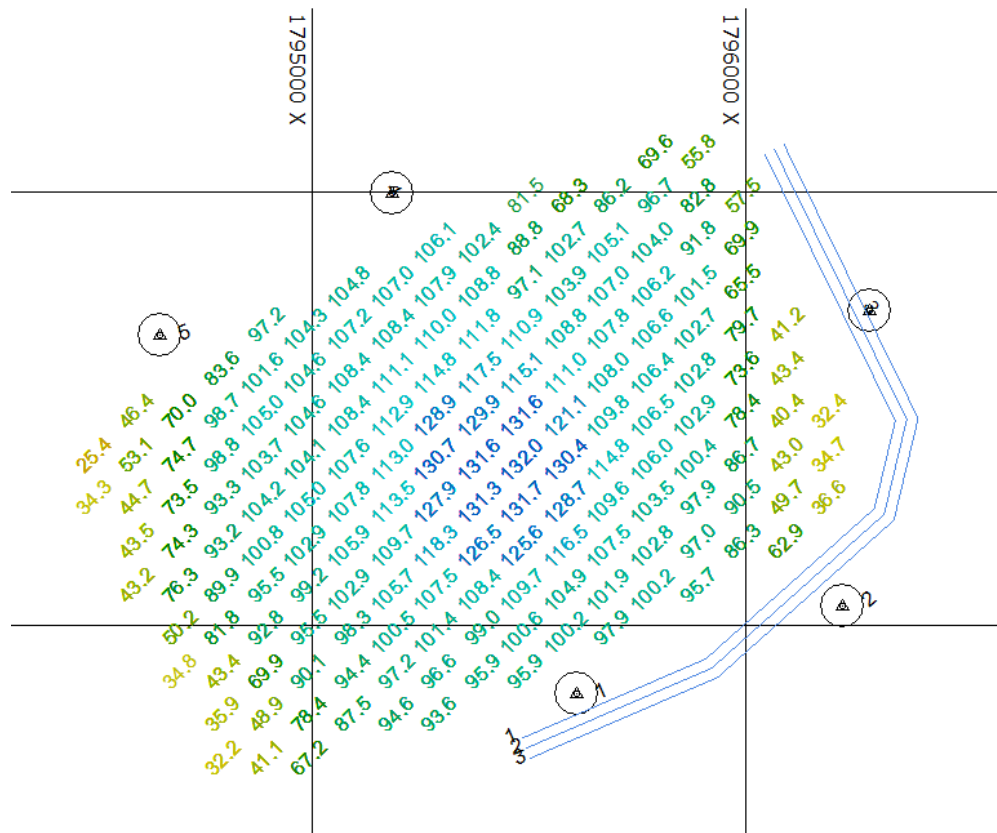
FIGURE 6. *The Project Conversion is Complete*



After conversion, we must add each of the converted files into the HYPACK® Shell in the new project. All converted files will automatically find their way into the proper folder, but must be loaded into the Shell. You can load them individually by right-clicking on a folder in the Data or Project Files list and selecting the "Add File" option. You can also load all of the files in the project folder by selecting DRAW-RESCAN FOLDERS.

The following HYPACK 2011 screen capture is from the new project in State Plane NAD-27, with the zone still set as LA-1701-Louisiana North:

FIGURE 7. The Converted Data in the new NAD-27 Project



Notice the different coordinates for Target 1 from before, shown below in the TARGET EDITOR in NAD-27:

FIGURE 8. The coordinates of Target 1 show the conversion has been made

Target Editor								
File Edit Help								
Cursor Preview Add Delete Offset Display Apply								
	Name	East	North	Angle	Depth	Time	Date	Distance
1	1	1795610.93	474842.25	0.00	0.00	08:53:12	11/7/2007	0.00
2	2	1796224.35	475044.60	0.00	0.00	08:53:13	11/7/2007	0.00
3	3	1796288.25	475726.18	0.00	0.00	08:53:14	11/7/2007	0.00
4	4	1795184.94	475998.81	0.00	0.00	08:53:15	11/7/2007	0.00
5	5	1794650.32	475670.79	0.00	0.00	08:53:16	11/7/2007	0.00

CONFIRMING ACCURACY IN CORPSCON

To confirm that the coordinates in the two projects (NAD-83 and NAD-27) represent the same survey area, we can use CorpsCon to test the converted coordinates for Target 1:

FIGURE 9. *Confirming Correct Conversion in CORPSCON*

Point Name:	Target 1	
Easting/X:	3076397.36	
Northing/Y:	535548.33	
	Convert	

Office:	Office	Project:	Project	Remark:	
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Office
Project
15 September 2011

INPUT State Plane, NAD83 1701 - Louisiana North, U.S. Feet	OUTPUT State Plane, NAD27 1701 - Louisiana North, U.S. Feet
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Accuracies of conversions from NAD 83 to NAD 27 are typically 12 to 18 cm.

Target 1		1/1
Easting/X: 3076397.36	Easting/X: 1795610.756	
Northing/Y: 535548.33	Northing/Y: 474842.154	
Convergence: -0 20 54.83306	Convergence: -0 20 54.51733	
Scale Factor: 0.999915164	Scale Factor: 0.999915166	

Grid Shift (U.S. ft.): X/Easting = -1280786.6, Y/Northing = -60706.2
 Datum Shift (m.): Delta Lat. = -17.861, Delta Lon = -15.681

As we can see above, the converted coordinates both fall within centimeters of those shown in HYPACK® within the new NAD-27 project... The X difference is 17.4 cm, while the Y difference is just 9.6 cm.

	X	Y
HYPACK®	1795610.93	474842.25
Corpscon	1795610.756	474842.154

As we can see, project conversion from nad-83 to nad-27 is easily and accurately accomplished in HYPACK®!