Collecting RTK Vectors with FAST Survey
Importing the RTK Vectors into GNSS Studio

Required Items:
FAST Survey software on the data collector
GNSS Studio Post-Processing Software
Thales Navigation X-Port Office Software

Field Procedures:
Setup the RTK Base receiver with FAST Survey **Equip | Configure Base…**
Be sure to enter a 4-Character Site ID for the BASE when prompted;
This populates the BASE Site ID into the RTK Vector information.

Setup the RTK Rover with FAST Survey **Equip | Configure Rover…**
To collect RTK Vectors with the RTK Rover, from FAST Survey use
SURV | Store Points menu…

To capture RTK Vectors with RTK Rover, use the [**A] Average** menu icon in the Store Points routine. In the **[A] Average** menu, you need to collect a minimum of at least 5-seconds of data to generate the RTK Vector.
(Recommend to collect 10-seconds).

The RTK Rover must have a FIXED SOLUTION to collect the RTK Vector.
After the RTK Rover collects the RTK Vector, the results will be displayed to the user, tap OK to close this menu and continue to the next point…

If you a have a FLOAT RTK Solution, it WILL NOT collect the RTK Vector.
If this routine locks up, you may have to re-boot the data collector and re-start FAST Survey S/w. It is essential to have a RTK Fixed solution before attempting to store the RTK Vector.

Office Procedures:

Download the RTK data files from the FAST Survey data collector using
The X-Port Office Utility, or GNSS Studio. The RTK Vectors are stored in a file with an **(.OBN)** extension.

Example: TN_Tenn-Dot.OBN

Start GNSS Studio…
Project | New | Land Survey Project | Project Name: xxxxxxx [OK]
Land Survey Project Wizard | Region …
Spatial Reference System: (select the NAD83 State/Zone) for your project…
Time Zone: select the time zone your project resides in…
Linear unit: select the linear units (same as the RTK field work)…
Click **[Next]…**

Feature Codes (if you don't have Feature code (*.fcl) associated to this project, Skip past this menu choice
Click **[Next]…**

Miscellaneous (Project Settings)… (Same as Ashtech Solutions)
Click **[Finish]…**

Wait a few seconds…
Background map window opens…

From the Vertical Project Elevator tabs, select [**Import]…**
Then click on the **Import Data from Files** icon…
Then select **Import Vectors…**
Format: **Ashtech (O-Files)…**
Click **[OK]…**

Browse to the Directory / Folder in which the **(.OBN)** files reside;
This is the Directory / Folder you downloaded the data collector files into.

Example: C:\Data2003\Tenn-DOT\RTK-Data\Grid-Coords…
Select the file: **TN_Tenn-Dot.obn**

Click **[Open]…**

The RTK vectors should plot into the Map Window…
The RTK Vectors should be Green (Green = Fixed Vector, same as Ashtech Solutions and/or GNSS Studio static processing results).

On the left-hand / Bottom navigator display in GNSS Studio, click on the [**Docu…]** tab; then double-click **Features (Points)**…

The RTK Base point should be the first (top) point in the listing, confirm by the 4-char Site ID. Select the Point, then right-mouse-click **Properties…**

Change the properties of the RTK Base point from **Logged Point** to **Control Point.** In the Control Column – inspect the Easting, Northing. Elevation of the RTK Base point. If you used known NAD83 coordinates during the RTK survey – these coordinates will be correct. **You may have to edit/modify the Orthometric elevation for the RTK Base.** Depends on if your GNSS Studio Coordinate system uses a Geoid99 model or not.

If you used the **Read from Base** function during the RTK survey and intend to use the NGS OPUS procedure, you will have to edit the Easting, Northing, Elevation of the RTK Base point and re-adjust the RTK Vectors.

In either case, be sure to **[√] Pad-lock** the coordinates in the Control Column menu, before adjusting the RTK Vectors.

Switch back to the **Survey View…**

On the left-hand / Bottom navigator display in GNSS Studio, click on the **"! Comm…"** tab…

Then select the **"Process"** elevator tab…
Then click on the **Adjust Baselines** icon…

This launches the Least-Squares Adjustment…
After adjusting the RTK Vectors, you can view the results:

On the left-hand / Bottom navigator display in GNSS Studio, click on the [**Docu…]** tab; then double-click **Features (Points)**…
You can view / Inspect the adjusted NAD83 coordinates for each point.

Double click **Vectors (Process Results)…**
To view the Vector components, Dx, Dy, Dz.

Double click **Vectors (Adjustment Analysis)…**
To view the adjusted Vector components, Dx, Dy, Dz.

Click the **Save** icon to save your project.

Filename: RTK Vectors – Fast Survey and GNSS Studio.pdf

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