Trimble Business Center
Survey Desktop Application

Overview Presentation
Version 2.60 Sep 2011
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2. Licensing
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4. Getting Started with Tutorials
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What is TBC?

- Desktop application for processing and managing survey data
- Unique capabilities such as GNSS and feature code processing
- Performance-add capabilities such as Total Station and RTK data editing
Licensing

• Available Licenses
  – Survey Standard
  – Survey Advanced
  – Survey Advanced Network

• Software Updates
  – Require Current Warranty
  – Extended warranties available for Standard and Advanced
Try the Full Version for 30 Days

1. Order from Trimble.com

2. Install TBC

3. Enter 19-digit demo code

4. Survey Advanced for 30 days
Keeping up to Date

Run “Check-For-Updates”

- New Version Available
- New Patch Available
- New Utility Available
- Coordinate System Update
- Job File Converters
- Antenna and Receiver Config Files
- Tutorial and Help Files Update
Getting Started with Tutorials

1. What’s New
2. Setting up a New Project
3. Importing GNSS Data
4. Processing GNSS Baselines
5. Importing Digital Level Data
6. Importing Total Station Data
7. Adjusting the Network
8. Processing Feature Codes
9. Using Spreadsheets, Selection Sets, and COGO
10. Working with Trimble VX Data
11. Working with Corridors
12. Working with Superelevations

Including Sample Data!
Languages

• US English
• Portuguese
• British English
• Japanese
• German
• Russian
• French
• Dutch

• Italian
• Chinese
• Spanish
• Korean
• Norwegian
• Finish
Staying Efficient with Workflow Guides

- Set up a new project
- Import GNSS data
- Process GNSS baselines
- Import digital level data
- Import total station data
- Adjust the network
- Process feature codes
- Create a corridor
- Add superelevation to a corridor

Workflow: Adjust the network

This workflow lists the basic steps required to perform a least-squares network adjustment on GNSS, total station, and/or digital level data that has been imported into your project.

A network adjustment provides the following benefits:
- Random errors can be estimated and removed.
- A single solution is provided when there is redundant data.
- Corrections made to observations are minimized.
- Blunders and large errors can be detected.
- Information for analysis can be generated, including estimates of precision.

Steps:

1. Before performing a network adjustment, ensure your project is configured correctly in the Network Adjustment section of the Project Settings dialog.
   - For example, you can specify whether observations that make up mean angles are used individually or as a mean. You can also specify covariance display and transformation settings.

2. Display the Adjust Network pane to begin the network adjustment process.
   - To evaluate the internal consistency of the survey network, you should first perform a minimal constrained network adjustment, which uses the minimum number of constraints required to define the coordinate system.

3. On the Fixed Coordinates tab, select the minimum number of constraints required. Then click the Adjust button.
   - View a summary of the adjustment results on the Results tab.

4. In the Adjust Network pane, click the Report icon to view the Network Adjustment Report. Observations with standardized residuals that fail the Tau criteria are displayed in red. These observations are outliers and can be disabled.
Learning More

• Trimble Knowledge Network
  – Online Courses
  – Trimble Certified Training

• Facebook
  – Demo Videos
  – User Community

• YouTube
  – Demo Videos
TBC Workflows and Capabilities
Workflows and Capabilities

- GNSS Post-Processing
- RTK and Total Station Data
- DiNi Digital Level Processing
- GNSS Site Calibration
- Least-Squares Network Adjustment
- Feature Code Processing
- Alignment and Corridor Creation
- COGO, Linework, Surfaces, and Volumes
- Aerial and Field Imagery
- Trimble VX Scan Data
GNSS Post-Processing

• Create new projects with a wide selection of Coordinate Systems and Geoid Models
GNSS Post-Processing

- Import raw GNSS in Trimble formats (DAT, T01, T02) and RINEX
GNSS Post-Processing

• Download Reference Station Data and Precise Ephemerides
GNSS Post-Processing

• Edit Sessions to remove bad satellites and time blocks
GNSS Post-Processing

- Process GPS L1, L2, L5, GLONASS, and GALILEO observables
GNSS Post-Processing

• Create Spreadsheets and Reports

Copy / Paste To MS Excel

Save as PDF
RTK and Total Station Data

• Directly import jobs from the TSC3.
RTK and Total Station Data

- Navigate jobs using Project Explorer
RTK and Total Station Data

- Use the **Properties Pane** to edit one or more observations.
RTK and Total Station Data

- Review and edit Mean-Turned-Angles
RTK and Total Station Data

• Export custom ASCII files
RTK and Total Station Data

• Stakeout Data
DiNi Digital Level Processing

• Import Trimble DiNi dat files
DiNi Digital Level Processing

- Review loop misclosure
- Merge and Adjust Level Runs
DiNi Digital Level Processing

- View imported observations in the Project Explorer and Properties Pane
GNSS Site Calibration

- Create the connection between GPS and local coordinates
Least-Squares Network Adjustment

- Fix or constrain Control Points
Least-Squares Network Adjustment

Adjust all observation types in one network: Static, RTK, Total Station, Level
Least-Squares Network Adjustment

- Review results and create reports
GIS and CAD Code Processing

- Create new feature definition files (.fxl) in Feature Definition Manager

- Feature Code
- Symbol
- Attributes
- Line-type
- Line Control
- Layer
- Color
- Groups for Measure Codes
GIS and CAD Code Processing

- Import jobs with coded points
GIS and CAD Code Processing

- Process feature codes to create automated linestrings and
GIS and CAD Code Processing

- Review feature and attribute data in the Properties Pane.
GIS and CAD Code Processing

- Export point and line features to GIS and CAD
Alignment and Corridor Creation

- Import or Key-in horizontal and vertical alignments
Alignment and Corridor Creation

- Create corridors to add cross-sectional shape (templates)
Alignment and Corridor Creation

• Side-slope elements can target a surface for volume calculations
Alignment and Corridor Creation

- Review in multiple views
Alignment and Corridor Creation

- Export the road to Land XML, RXL, or DC formats for staking
COGO, Lines, and Surfaces

- Calculate points using a variety of COGO controls
COGO, Lines, Surfaces, and Volumes

- Copy Objects
- Move/Rotate/Scale Objects
COGO, Lines, Surfaces, and Volumes

- Create linestrings from points or coordinates
COGO, Lines, Surfaces, and Volumes

- Edit Linestrings
COGO, Lines, Surfaces, and Volumes

- Create surfaces from points, lines, and breaklines
COGO, Lines, Surfaces, and Volumes

- Edit surfaces by adding boundaries or trimming the edges.
COGO, Lines, Surfaces, and Volumes

- Drape aerial or satellite imagery over the
COGO, Lines, Surfaces, and Volumes

• Add surface texture for realistic visuals
COGO, Lines, Surfaces, and Volumes

- Calculate volumes with Earthwork
Aerial and Field Imagery

- Basic: view and edit field data with attached photos
- Share in Google Earth
Aerial and Field Imagery

• Advanced: Use a feature definition library to assign images as attributes

• Deliver in GIS formats
Aerial and Field Imagery

- Import geo-referenced background images
- Import un-referenced images and manually geo-reference them
Aerial and Field Imagery

• Capture background images to use in the field
Aerial and Field Imagery

- Display Trimble VISION panoramas from a Trimble VX
Aerial and Field Imagery

- Process VISION panoramas to improve quality and generate Google Earth deliverables
Trimble VX Scan Data

- Import scanned point clouds from Trimble VX jobs
- Save-as Trimble Survey Project (.tspx)
Trimble VX Scan Data

- Process the survey data in TBC, then open the .tspx in Trimble Realworks to create 3D deliverables.

Work with Survey Data in TBC

Work with 3D Scans in TRW
Review

• GNSS Post-Processing
• RTK and Total Station Data Editing
• DiNi Digital Level Processing
• GNSS Site Calibration
• Least-Squares Network Adjustment
• Feature Code Processing
• Alignment and Corridor Creation
• COGO, Linework, Surfaces, and Volumes
• Aerial and Field Imagery
• Trimble VX Scan Data
Current End-User Services

• TBC Connectivity
  – Data Processing Service
  – Registered Device
  – File Upload
  – TCC Site Creation
  – File Conversion

• Trimble Access Sync

• GNSS Forecast

• Trimble Connected Community
Services in TBC

Welcome to Trimble Access Services

The following Trimble Access Services are currently available to you.

- **Site creation**
  - Make new Trimble AccessSync sites to move data to and from the field

- **Registered devices**
  - Manage your Trimble Access devices

- **File upload**
  - Send files to the field via Trimble AccessSync

- **File conversion**
  - Convert older Trimble Access and Trimble Survey Controller Job (.job) files to newer versions

- **Data processing**
  - Process GNSS data files (Beta release)

- **GNSS forecast**
  - View future GNSS satellite availability
File Conversion
File Upload

Select Files to Send
Select the files to upload to your Trimble Connected Community site. These files will be picked up by AccessSync and sent to the field.

File names:
- avg points3.pl

Select AccessSync Users
Select the AccessSync users you want to send the files to in the field.

User names:
- All Users
- Ken Joyce
## Registered Devices

### Controller Information

#### Controller List by Serial Number:

- **Trimble Survey Sales - AM**
  - SS21A12590
  - SS21A12520
  - SSA0C17023

  - Last Login: Tuesday, November 02, 2010 10:17:51 PM
  - Member ID: Chad McFadden
  - Project: SW USA TCC Demo

#### Applications

<table>
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<tr>
<th>Application Name</th>
<th>License Type</th>
<th>Activation Date</th>
<th>Expiration Date</th>
<th>Installed Version</th>
<th>Latest Version</th>
</tr>
</thead>
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<tr>
<td>AccessSync v1.0</td>
<td>Timed</td>
<td>6/28/2010</td>
<td>7/3/2011</td>
<td>1.27.225</td>
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<td>Construction Instruments</td>
<td>Timed</td>
<td>6/28/2010</td>
<td>7/2/2011</td>
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<td>N/A</td>
</tr>
<tr>
<td>General Survey v1.0</td>
<td>Full</td>
<td>7/1/2010</td>
<td>Perpetual</td>
<td>1.40.145</td>
<td>1.40.145</td>
</tr>
<tr>
<td>Settings v1.0</td>
<td>Full</td>
<td>7/1/2010</td>
<td>Perpetual</td>
<td>1.40.148</td>
<td>1.40.148</td>
</tr>
</tbody>
</table>

- SS24A18731
- SSA2C55668

### Summary

- Total number of devices: 13

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*Trimble. Registered Devices © 2010 Version 1.1.0.10*
Site Creation

Trimble Access Services

Enter project parameters

This will create a new site to store your Trimble Access project data on. Only sites created with this tool will be available on your field controller.

Title:
New TCC Site

Shortname:
New-TCC-Site

Description:
New TCC site to move data to and from the field

Next
GNSS Forecast

The GNSS forecast is displayed for the parameters defined in the Forecast Settings. You can change the data or time and the forecast will update automatically.

**Forecast Settings**
- **Location**: N 36.1722° W 115.1440°
- **Cutoff Angle**: 10.0°
- **Date & Time**: 11/4/2010 2:00 PM

**Time** | **Iono Index** | **Satellites** | **Description**
--- | --- | --- | ---
2:00 PM - 3:00 PM | 2 | 13 | Good condition.
3:00 PM - 4:00 PM | 2 | 12 | Good condition.
4:00 PM - 5:00 PM | 2 | 14 | Good condition.
5:00 PM - 6:00 PM | 2 | 14 | Good condition.
6:00 PM - 7:00 PM | 2 | 13 | Good condition.
7:00 PM - 8:00 PM | 1 | 13 | Good condition.
8:00 PM - 9:00 PM | 1 | 15 | Good condition.

**Trimble Access Services**
- Site creation
- Registered devices
- File upload
- File conversion
- GNSS forecast
Data Processing

Trimble Access Services

Read from data file

Automatically populates if logged in
Questions