TopSURV Version 7.5

Release Notes

December 20, 2009

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7.5

Features and Changes

Installations

- If installing on a Windows Mobile device, Windows Mobile 6.x or higher is required. Please note that the "TopSURV_v7_5_Windows_Mobile.exe" installer is **NOT** for the Topcon GRX-1 or Topcon FC-250 products. Please use the "TopSURV_v7_5_FC-120_FC200_FC2000_GMS_GRS.exe" file for installing to these devices.

- TopSURV can now be removed using Add/Remove programs.

User Interface

- Angles will now be formatted as ddd° mm' ss.ssss when using DMS.

- Bearings entered as NW45.4545 will be interpreted as N45°45'45W.

- Display of point number has been moved closer to the actual point in the Map view

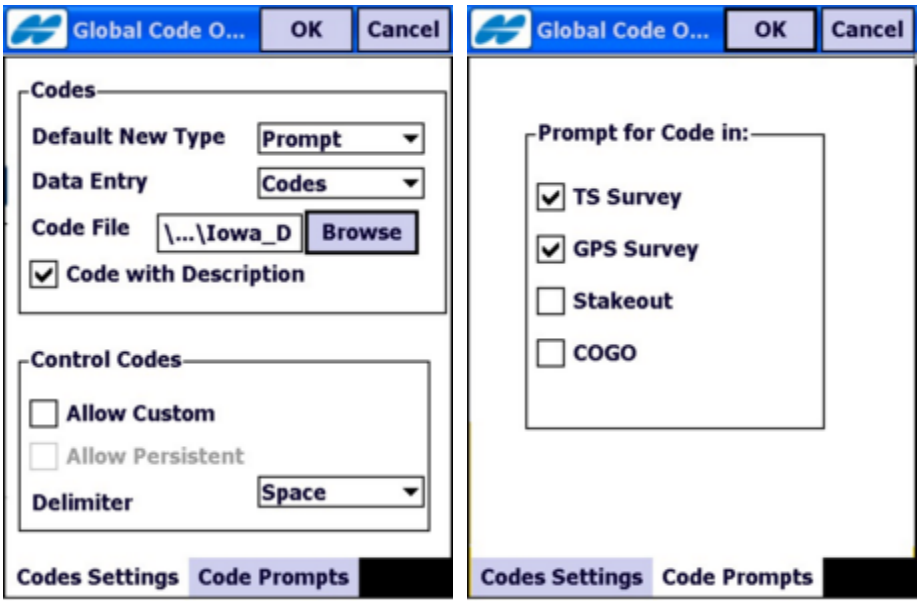
- TS security code name changed from TS to Optical (as it includes Levels and Total Stations)

- Stationing values now supports negative numbers as (-1+00, -1+10…, -2+00…)

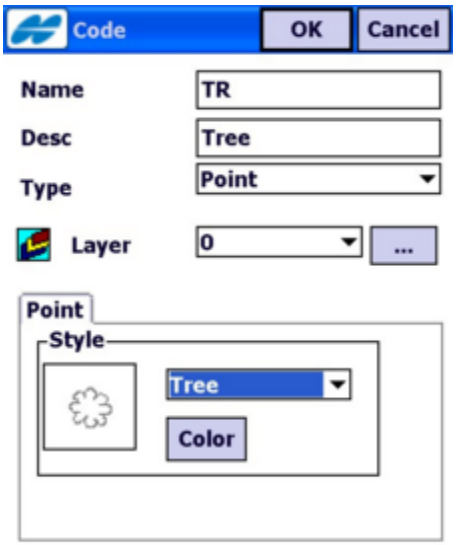
Feature Codes

- Moved the options for code library selection from *Configure - Global* to *Configure - Codes*.

- Global prompts for codes while Surveying, Staking and COGO removed from *Configure - Survey* and added to *Configure - Codes*.



- Added a feature for defining the default code type when a new code is entered.
- TopSURV updated to support multiple codes having the same description.
- Tree symbol has been added as an option for the map.



Coordinate Systems

- Czech projections added
- Latvian Coordinate system and Geoid added
- Lithuania Coordinate system added
- UKO-M25 projection removed from the installation (files to be provided separately to user)
- RDNAPTRANS 2008 added
- NGS Geoid 2009 support added

Field Controllers

- Added support for the FC-250 with Windows Mobile 6.5.

Optical

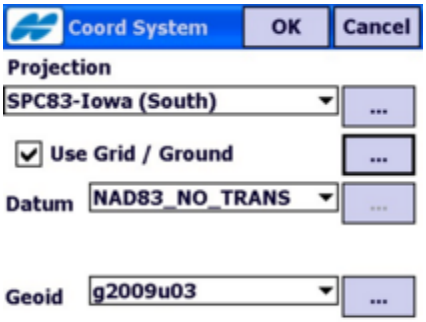
- Added the ability to select the COM port in the Mode screen when using a cable connection to a total station.
- Angle Sets Improvements:
    - Codes, rod heights and prism constants are now tracked for all direct and reverse readings.

    - Added a report page after angle sets are complete.
    - Cancel in reverse face will return a motorized instrument to the direct face.

- Prism Constant is now displayed in the data tab after measurements.

GPS

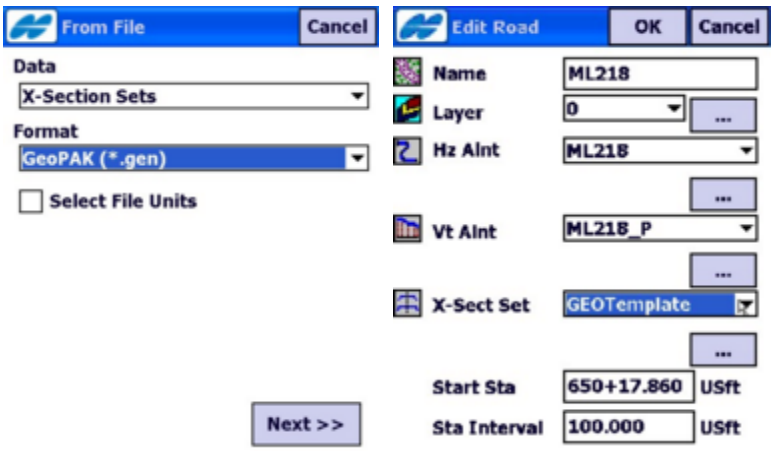
- Clear NV Ram has been added to the Status Screen context menu (Topcon Logo Button).
- AT&T GPRS(Alt1) settings added with for optional AT&T default parameters.
- Added support for the new Sokkia GRX1 Receiver with Digital UHF radios.
- Grid to Ground - Origin Point: Added the ability to manually enter a user defined scale factor, while using this method.



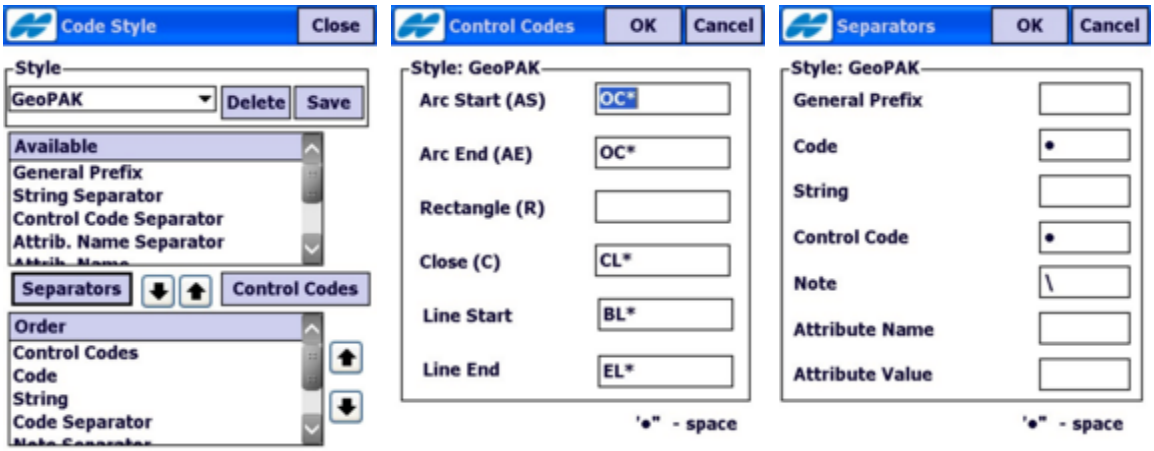
Import/Export

- Export to Sokkia SDR33 OBS view.
    - GPS Raw data
    - Level data
    - TS Sets collection
    - Resection
    - Stakeout data
    - Topography
- Localization to Sokkia *.loc files.
- SDR33 POS view.

- SHP file export – idx file extension changed to clf.
- Software version was added to all raw data files that support it.
- GeoPAK Cross Section files are now supported for import. GeoPAK has the ability to export LandXML alignment and profiles; therefore, the best appraoch for importing an entire GeoPAK road is to import their LandXML file for the alignments and profiles, and the GeoPAK (*.gen) cross section files. After import, simply attach the imported cross section set to the alignments using *Edit Roads - Road*.

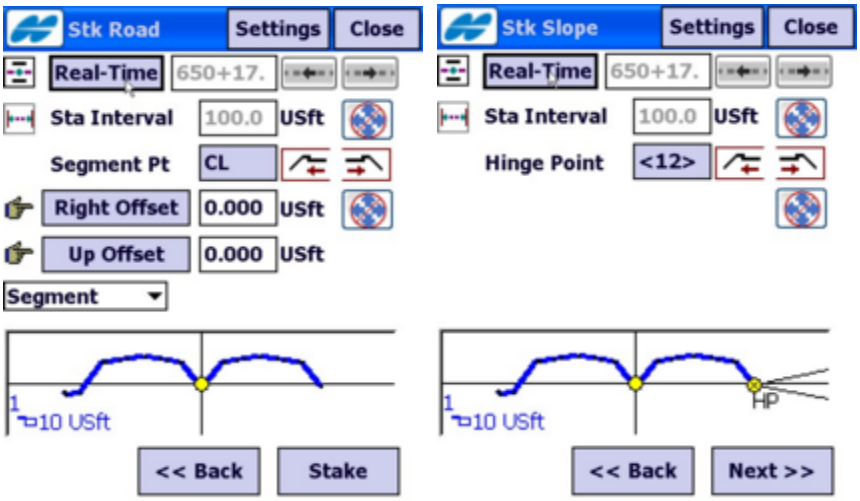


- LandXML: Support for parcels added.
- Attributes have been added for FBK export.
- Code Styles updated to allow for more control code aliases. Most CAD feature coding formats can now be custom built for export from.



Roads

- *Stakeout - Road* and *Stakeout - Slope* now support station-less staking using the *Real-Time* button next to the station entry field.



- *Stakeout - Slope* now has the ability to select from staking out per the pre-defined template slopes, or user defined slopes. The template slope information will be displayed for reference in the dialog.

7.3

Features and Changes

SRX Robot (P0)

- Add support for the Sokkia SRX robot. SRX-P & SRX-T could be different comms.

SRX

Standard Total Stations (P0)

- Perform verification and testing to make sure direct total stations connections work with Bluetooth and Cable connections.

- Make sure all the instrument models are listed in Config.

Series 30R

Series 30RK

Series 030R

SCT6

Series 130R

Series 10

Set X

Motorized Total Stations

- Add support for direct connections via Bluetooth or a cable to Motorized Total Stations. Investigate the RMC.

SRX

SDL30/50

- Add support for the Sokkia levels.

GRS-1 Robot Arrows

- New graphical arrow keys for Robotic for driving the motors.

GPS General

- IP names – ability to enter IP/Port into list of IP names
- GLONASS satellite slot numbers are reported in Status screen instead of Slot + 32 number.

New Job

- Added an icon called New Jobs to the Configure menu.
- Added a New Job configuration dialog that includes options for importing a localization from the previous job, and the entire feature code library from the global library during job creation.

Import/Export

SDR Raw Data (P0)

- Added the ability to import the Sokkia SDR 3x (POS) file.

Default Units

- When importing or exporting, the default units will be set to match the current job.

Custom Code Styles for Carlson Format

- Ability to export codes to Carlson RW5 format by custom style

GRS-1 WiFi

- Support I/E of files between GRS-1 controllers using WiFi

Backsight

- Added a prompt for a backsight point ID whenever a backsight by azimuth is defined and the user also measures a distance to the prism. This feature will store the measured backsight point along the defined azimuth.

Angle Sets

- Improved angle sets and added the ability to do radial angle set collection.

Vertical Alignments

- Add the ability to display High/Low statistics for vertical alignments in Edit Roads - Vertical.

7.2.3

Important Notes!

GPS Firmware
Firmware version 3.3p6 or higher is recommended. When connecting to a GPS network using GLONASS and RTCM 3.1, firmware version 3.4 is required for detection of the base station manufacturer and for MAC correction support.

FC Operating Systems and Bluetooth
There is a field-fix update for the FC-2500 that enhances the operation of the Bluetooth connection while taking photos (BTEnhancerInstaller.exe). The field-fix installation file is available through support. Please contact support if you are experiencing any problems of this nature.

The GMS2 Pro will need the updated OS v1.05E or higher to improve the magnetic declination calculations for laser offset functions. Please contact support for the new OS.

Upgrading TopSURV
Make sure you backup your jobs, configuration styles, and personal files!

To save your instrument configuration styles, backup a copy of your “Styles.tsstyles” file located in the \TPS\TopSURV folder. Replace this file to its original location after upgrading.

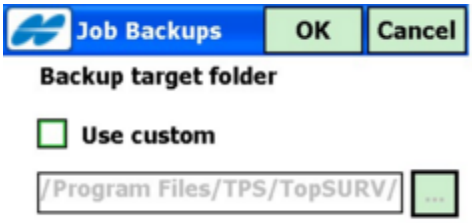
It is important to make sure that you do not have two installs of TopSURV on your field computer. You can detect this by looking at the Storage Card folders. If you have one called TPS TopSURV and another called TPS, it is recommended that you delete both installations and re-install.

Features and Changes

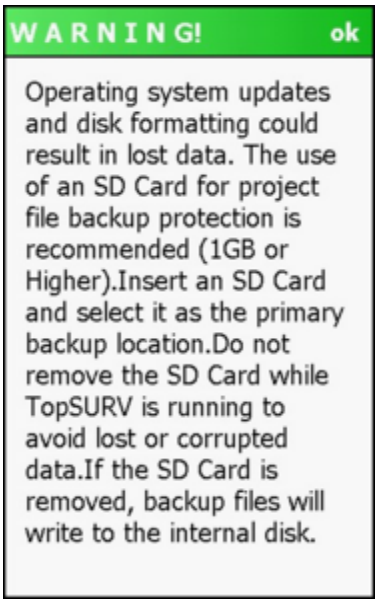
Backup

- Added the ability to define where the backup files will be stored. In the case that a removable memory card is defined, but not in the device, TopSURV will write to the current job location.

- Select *Configure - Backup* to adjust the settings. It is recommended that GRS-1 users put an SD card in the device, configure the backup routine to write to the card, and leave the card in while TopSURV is running. If you want to remove the SD card and this is the current backup drive location, exit TopSURV first.



- When using the GRS-1, a warning has been added to notify the user of the recommended backup method. It is recommended that an SD card be used for backups, and that the card is not removed while TopSURV is running. To set the location to the SD card, insert the card and use the "Set custom" option to set the path.



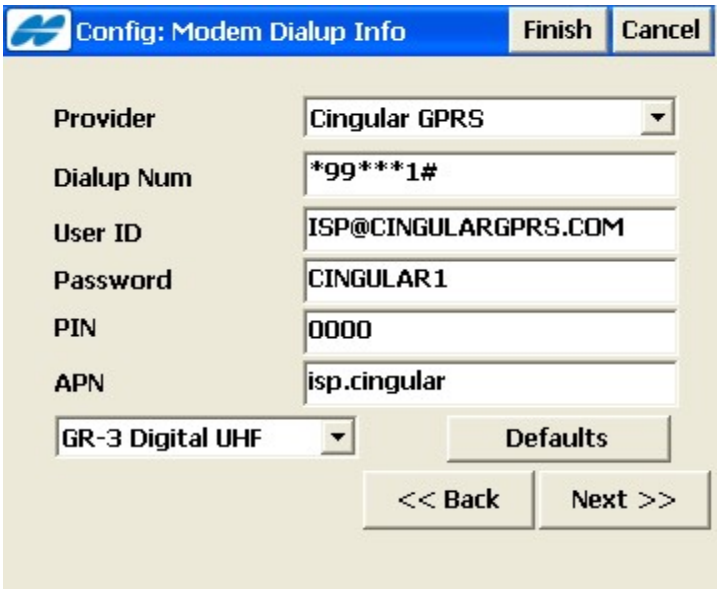
GMS2 Pro

- Laser offset BS measurement support
- Magnetic Declination support – OS needs to be updated to be 1.05 or later
- Cross hair adjustment support added.

GR-3

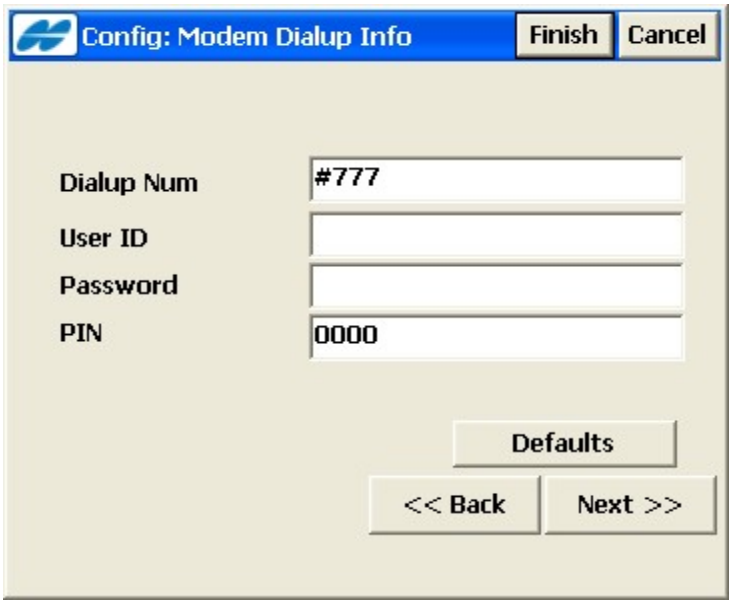
- The common settings for connecting a GR-3 with Internal GRPS on the AT&T Network are as follows:

Modem Connect:	Receiver
Baud:	115200
Virtual Port:	B



- The common settings for connecting a GR-3 with Internal CDMA on the Verizon Network are as follows:

Modem Connect: Receiver
Baud: 115200
Virtual Port: B



GRS-1

- Added support for the GRS-1 and RH-1 products. Please use the TopSURV_TC executable to install.

- Prior to configuring TopSURV for the network, "Create a new connection entry" using the TPS Connection Manager icon on the GRS-1 desktop. The common settings for AT&T and TMobile in the US are shown below.

Modem Connect: Controller
Baud: 115200
Virtual Port: D

AT&T

T-Mobile

- When TopSURV is running, hold ESC for 3 seconds and release to access the Windows Start button.

- Post Process Logging: When logging to the controller, GRS-1, GMS2 Pro, etc, the logging rate is restricted to 2Hz.

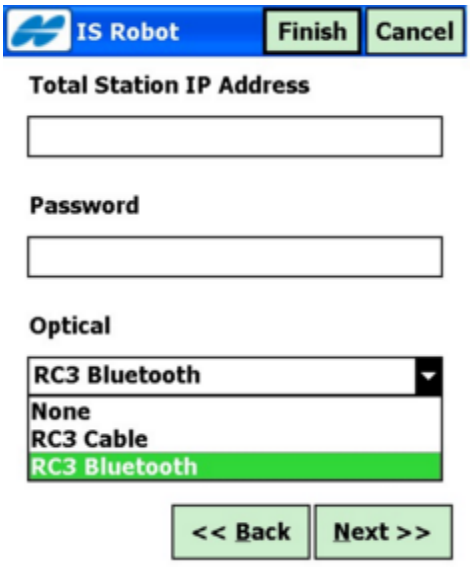
Import/Export

- When importing data into TopSURV, if there is a conflict, the Skip All button will now skip all conflicts, but will still import the data that is not in conflict with the Job data.

- Add support of CODE, ATTRIBUTES, STRING, NOTE, CONTROL CODE, PHOTO NAME, CONTROL FLAG for export to LandXML.
- Line and Area shape files are now being imported into the Line and Area layers.
- Added the ability to export manually entered, or COGO, points to raw data.

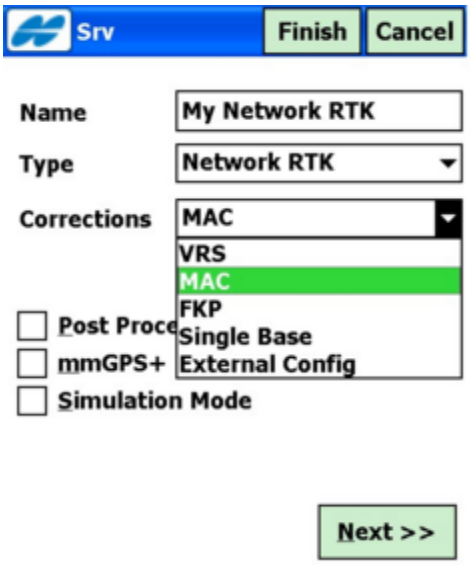
IS Robot Live Video

- Added support for the IS Robot, while running Live Video, that allows a simultaneous Bluetooth connection to the RC-3 for doing Quicklock.



MAC

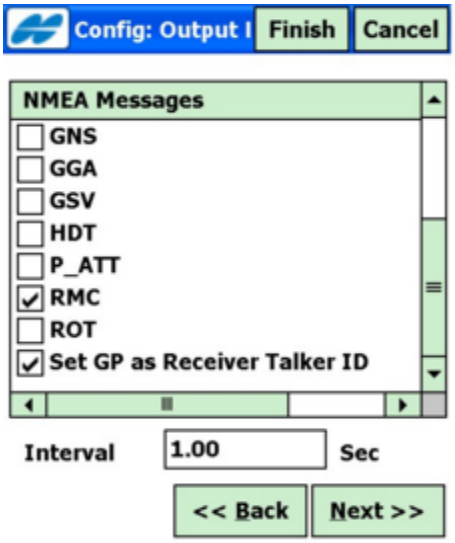
- Added support for MAC corrections. This feature requires GPS FW 3.4 or higher.



NMEA

- Added the ability to Set GP as Receiver Talker ID for NMEA output. Selecting this option, along with the RMC message type, allows the user to send the appropriate messages to programs such as Google Maps.

- Activate a Peripheral NMEA port in configuration.

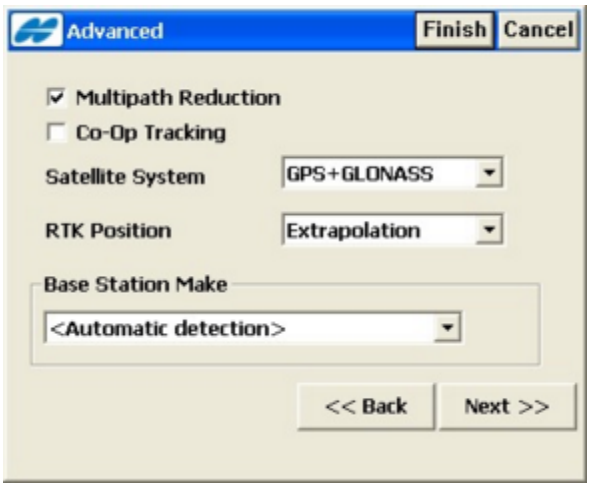


Projections & Geoids

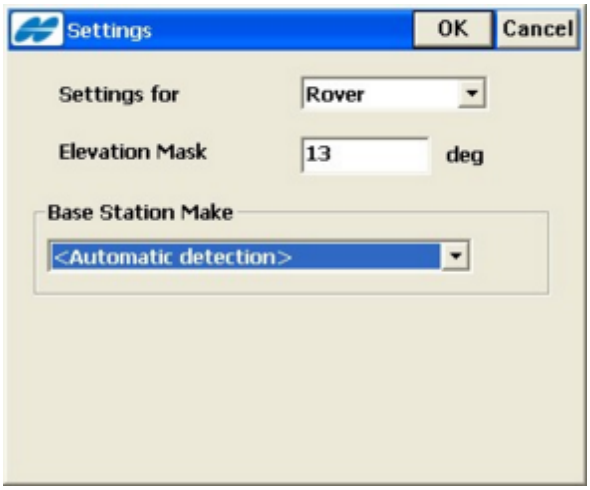
- M25 UK Projections
- Denmark (Datum ETRS89 was allowed for selection with DENMARK-UTM33 and DENMARK-UTM32 projections)
- Sweden (SWERef99 System) Projections.

RTCM 3.x

- TopSURV 7.2.3. and GPS FW 3.4 now support RTCM 3.1 and Automatic Base Make detection when using this format.
- Base Station Make is now selectable in the GPS configuration Advanced dialog, and in Setup - Status - Settings dialog.



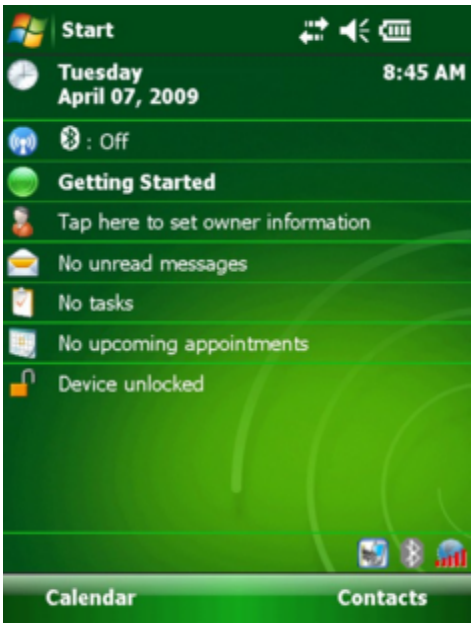
Configure - Advanced



Status - Settings

Windows Mobile 6

- TopSURV now supports Windows Mobile 6 and 6.1.
- Use the TopSURV_TC install for the GRS-1. For this device, the Bluetooth Manager and TPS Connection Manager are included in the OS and accessible from the small icons in the lower right corner of the desktop.



- For all devices, other than the GRS-1 that use Windows Mobile 6, please use the TopSURV_PPC executable to install.

7.2

Important Notes!

GPS Firmware
Firmware version 3.3.3p4 or higher is recommended. CDMA users should not upgrade to 7.2 until the next FW update.

Robot Firmware
The X-TRAC 7 upgrades for the 900/9000 and IS series instruments are recommended for this version of TopSURV. These upgrades are free of charge and can be obtained from your local Topcon distributor.

FC Operating Systems and Bluetooth
There is a new operating system available for the FC-200, version 1.10 that also includes an updated Bluetooth Manager, version 2.21. This free upgrade is available from you local Topcon distributor.

The Bluetooth Manager for the FC-2200 was updated to version 2.22.1. This updated manager is automatically upgraded with TopSURV 7.2; however, please see instructions below to ensure proper installation.

Upgrading TopSURV

Make sure you backup your jobs and files!

To save your instrument configurations, backup a copy of your “Styles.tsstyles” file located in the \TPS\TopSURV folder. Replace this file to its original location after upgrading.

It is important to make sure that you do not have two installs of TopSURV on your field computer. You can detect this by looking at the Storage Card folders. If you have one called TPS TopSURV and another called TPS, it is recommended that you delete both installations and re-install using the instructions below.

The following is for FC-100 and FC-200 Users Only:

1. Adjust Memory Slider Right, leaving approximately 20,000KB free.
2. Install TopSURV
3. Adjust Memory Slider Left, leaving approximately 20,000KB free.
4. Power off the FC-200 to save a backup.
5. Power back on the FC-200.

The following is for FC-2200 and FC-2500 Users Only:

Please follow the quick instructions listed below. For detailed instructions see 7.1 section of this document.

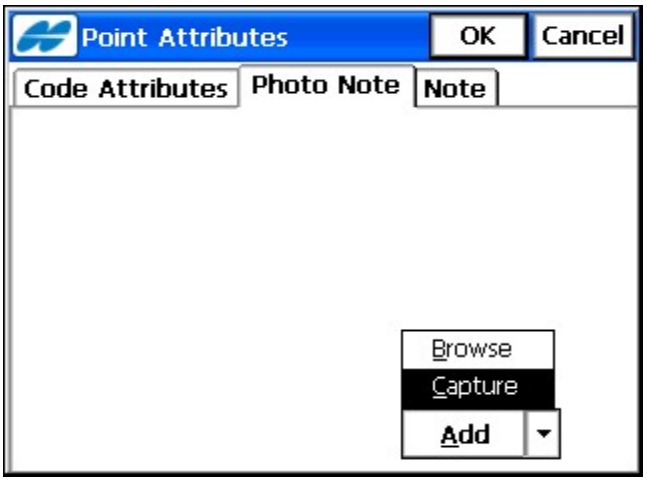
1. Adjust Memory Slider Right, leaving approximately 20,000KB free.
2. Install TopSURV
3. Adjust Memory Slider Left, leaving approximately 20,000KB free.
4. Save Registry
5. Hold Power Button for 10 Seconds
6. Power Back On
7. Turn on Bluetooth
8. Launch TopSURV

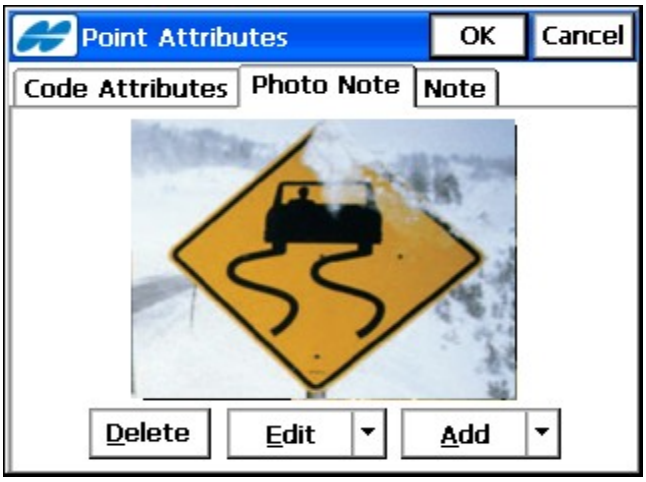
Features and Changes

The following changes have been made in TopSURV 7.2.

FC-2200 / FC-2500 Photo Notes

- Added the ability to capture the FC-2200 and FC-2500 photo notes, from within TopSURV, using the integrated cameras that these controllers employ.



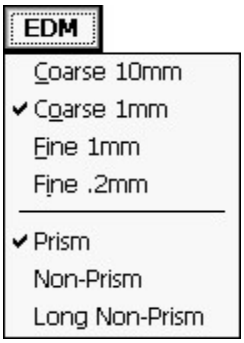


GMS2 Pro

- Image Capture
- Laser measurement

Total Stations

- The EDM button has been added to all survey screens.



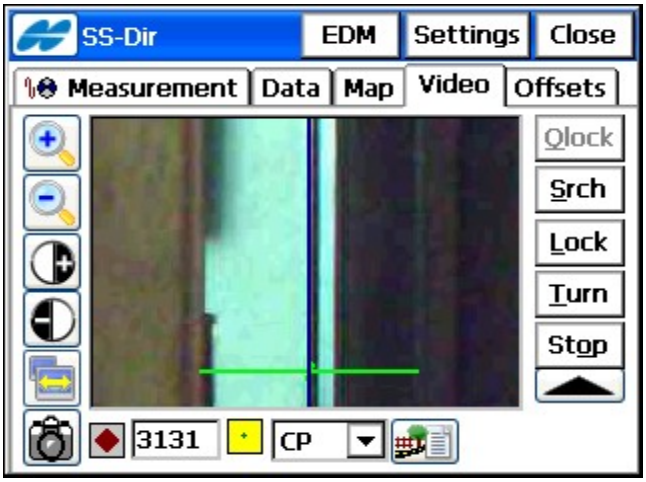
- Backsight Survey screen has been updated so the Fixed HR at BS will refer to the HR entered in

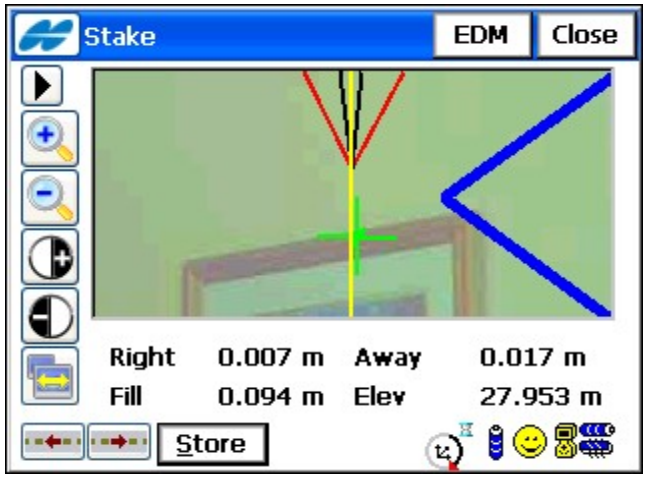
the BS Survey screen. This eliminated the additional field.

Support for the following instruments has been added:

- GTS100N
- GPT 3100W
- CTS 3000

IS Robot

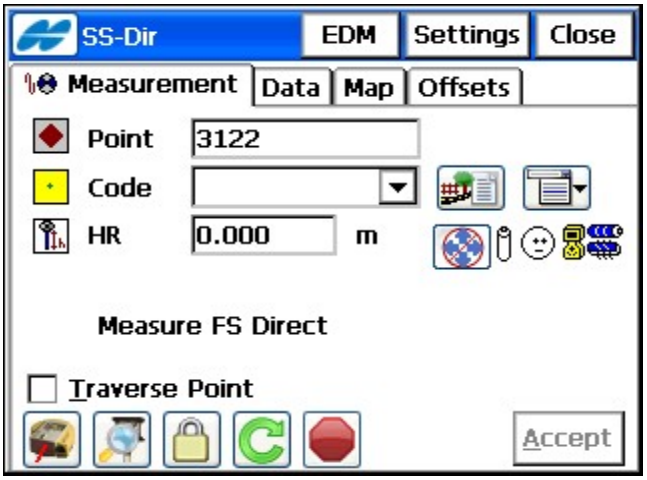




- Touch Drive - This allows the user to touch the screen and have the instrument drive to that location.
- WiFi and Ad-hoc network connection between IS Robot and FC-2200, FC-2500 and FC-200 is now supported.
- Image Capture in Topo
- Image Control (contrast, zoom)
- Grid Scan
- Topo with Graphic Overlay on Live Image
- Stake with Graphic Overlay on Live Video
- Mirror Image View

Robotic Search Icons

- Standardized the search buttons with icons.



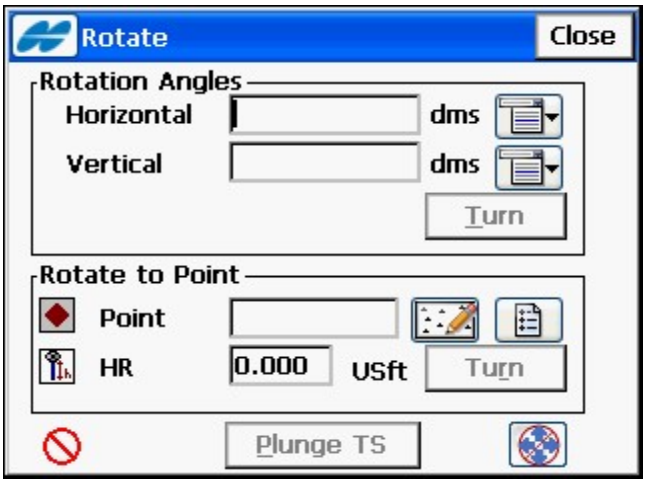
Quicklock - *This icon will trigger the RC-3 unit to perform a Quicklock.*

Search - *This icon will perform a standard search.*

Lock - *This icon will lock onto a prism that is in the field of view without searching.*

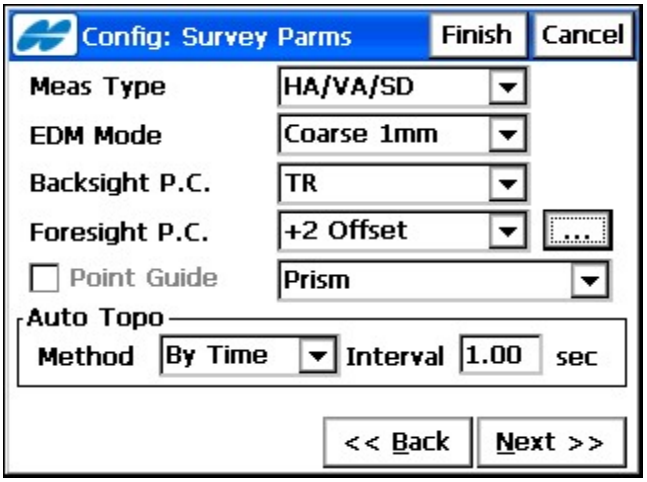
Rotate - *This icon will display (shown below) the Rotate dialog (a.k.a. Turn To).*

Stop - *This icon will interrupt the instrument and stop it from searching or turning.*

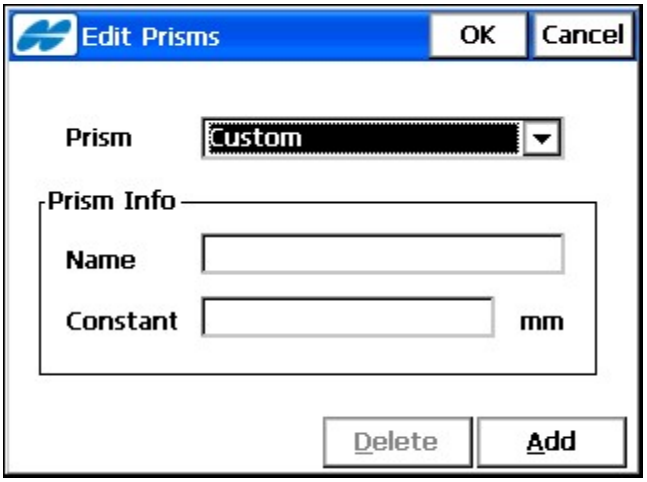


Prism Constants (Robotic Only)

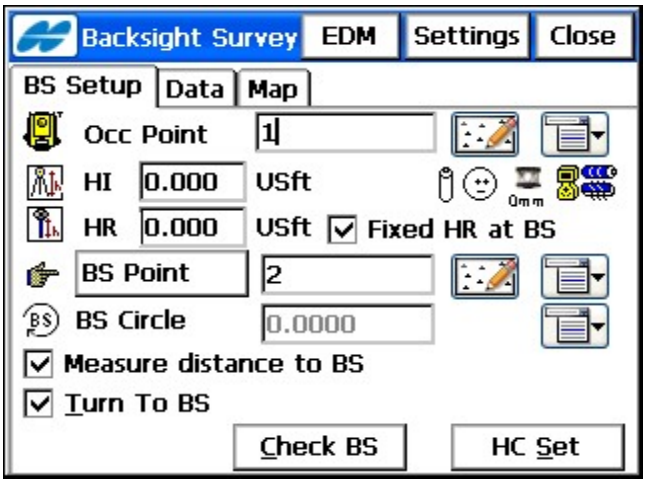
- Added the ability to define separate backsight and foresight prism constants.



- Added the ability to define custom prisms with user defined names and offsets. This option is accesed by the  button shown above.

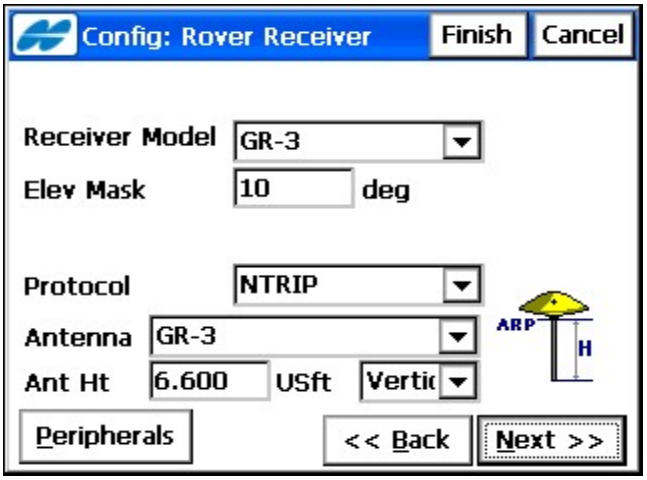


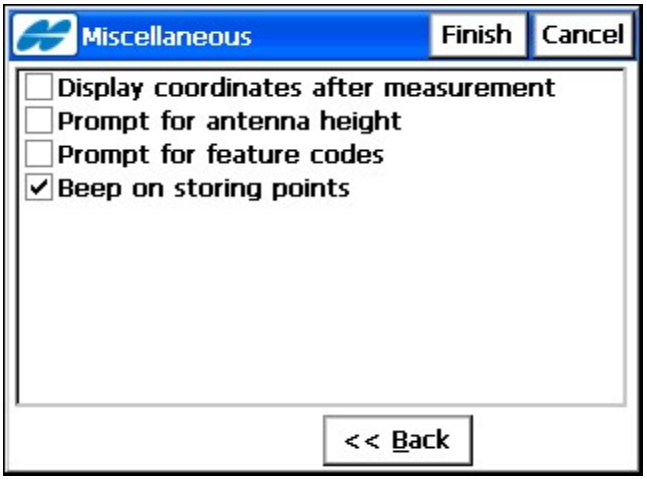
- Added a status icon that displays the current prism offset in use.



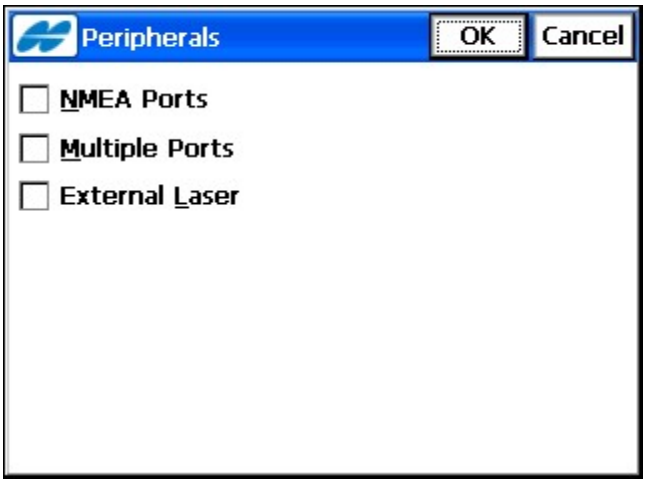
GPS

- Simplified and consolidated the GPS configuration wizard. Added a miscellaneous page similar to that of Total Stations.





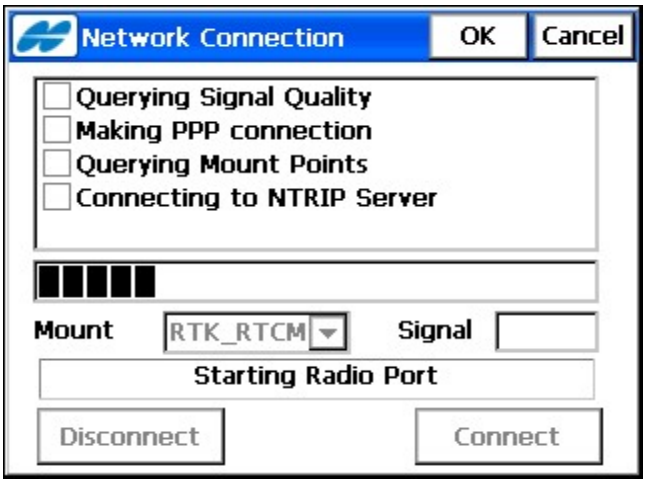
- Separated Peripherals into their own options dialog. These settings determine the remaining pages of the wizard.



- GR-3 Direct IP now supported with CDMA modems. This requires a pending FW update.
- Updates for SBAS setup (EGNOS/MSAS/WAAS) for GR-3/NET-G3/GMS-2 receivers.
- Live coordinates for Topo Dialog.

Network GPS Connections

- Added the auto-connect dialog. Once the bluetooth connection is established, the dialog shown below will be provided when using Network RTK configurations. There is a approximately 1-2 second delay before the dialog comes up after selecting the Bluetooth connection.



- The top window provides a checklist of the items remaining in the process. Additionally, there is a progress bar.
- The mount points will be listed in the Mount Point drop list.
- The Signal status shown is a check on the current cellular signal strength.
- The dialog will auto-connect to the last mount point and wait for the user to either press OK to

accept, or press disconnect to change to a different mount point.

- If the user presses disconnect, once the mount point selection is made, they will need to press Connect followed by OK.

Geoids

- Slovenia Geoid.

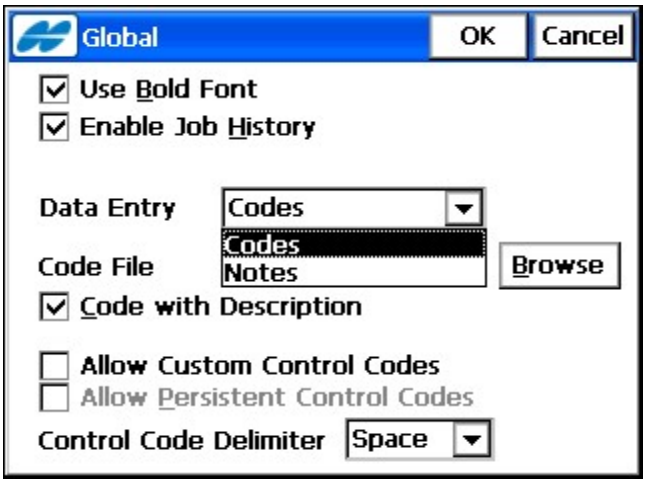
Import/Export

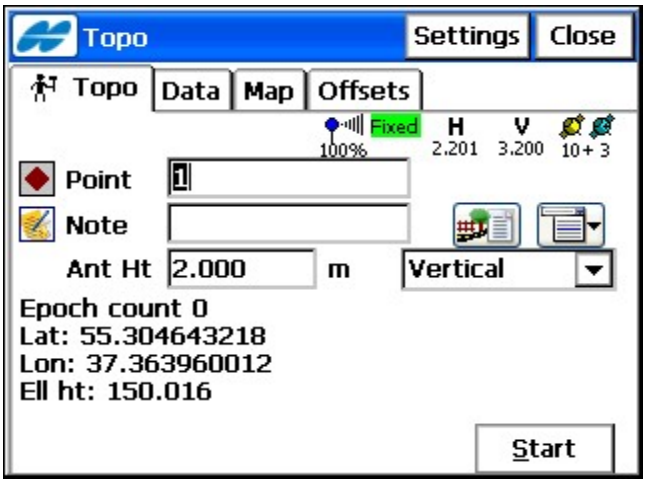
- Distance units/angle units can be selected for all data types on export.
- Fractal length (precision) for plane coordinates and height during export is now available.
- Topcon Vector Format - Export GPS Raw data with Custom Code style selection.
- Topcon 3D Points Format (PT3) - Import and export this file type now.
- Topcon Code Library (XML Format) - Import/export layers without codes and max fractal length.
- TopSURV Road Format – New version 1.3, distance/angle units are stored in the header record.
- Topcon FC6/GTS7 – Ability to automatically replace all alphanumeric names with numeric ones during GPS Raw data export.
- Topcon FC5/GTS6/GTS7 Raw Formats – modified to write block records.
- SurvCE Raw Data Format (RW5) – GPS points can optionally be stored as manually entered points during export of raw data.
- SHP Format - Now supports Photo Notes with the points, PRJ file export/import, and DBF Code library (support for boolean attributes and max fractal length). Note, the SHP support libraries are optional installation files, available for selection during install. They require 4MB of storage and should not be used where memory is limited. Make sure you leave the collector connected and follow all of the on-screen prompts during installation. The additional support files will be installed as a separate process after the initial install of the program is completed.
- Autodesk DWG Format - AutoCAD 2008 is now supported for import and all distance units are now detected on import. Note, the AutoCAD 2008 support libraries are optional installation files, available for selection during install. They require 10MB of storage and should not be used where memory is limited. Make sure you leave the collector connected and follow all of the on-screen prompts during installation. The additional support files will be installed as a separate process after the initial install of the program is completed.

Feature Coding

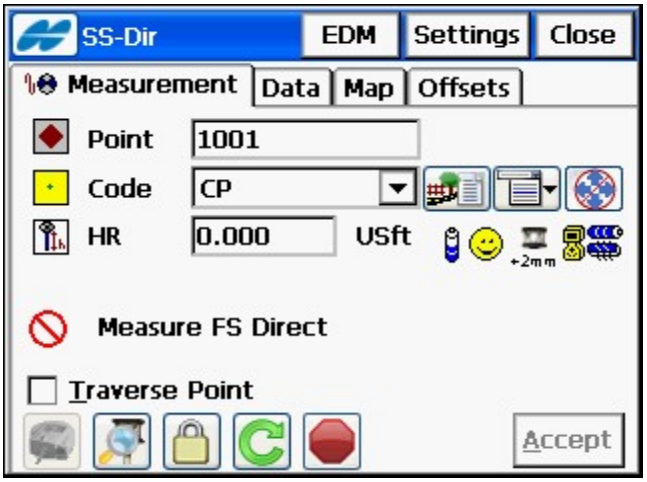
- Consolidated the three previous coding methods in Global into one method that achieves all of the features.

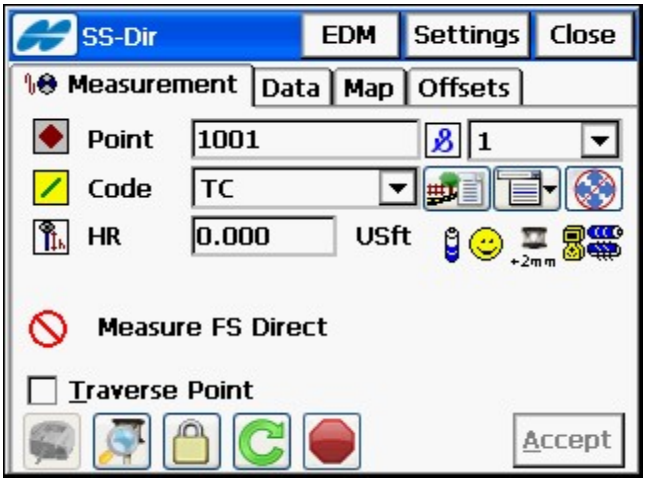
- Added the ability to enter Notes in the main topo dialog instead of Codes. This option is set in Configure - Global. The user also toggle on the prompt for Feature Code in configure if they want to use codes and strings, but like having notes in the main topo dialog.



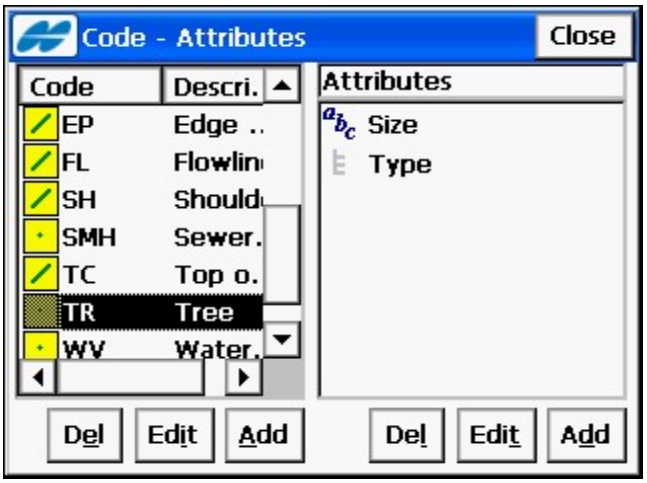


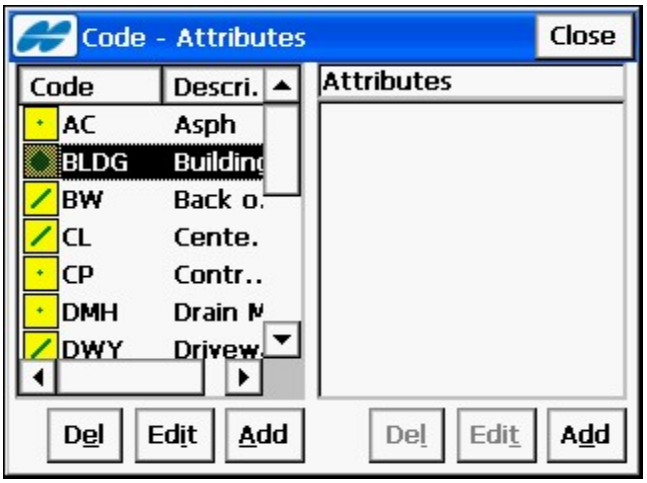
- Topo will auto-hide and show the string input box based on the code type. All line and area codes will display the string field while all point codes will hide the string field.



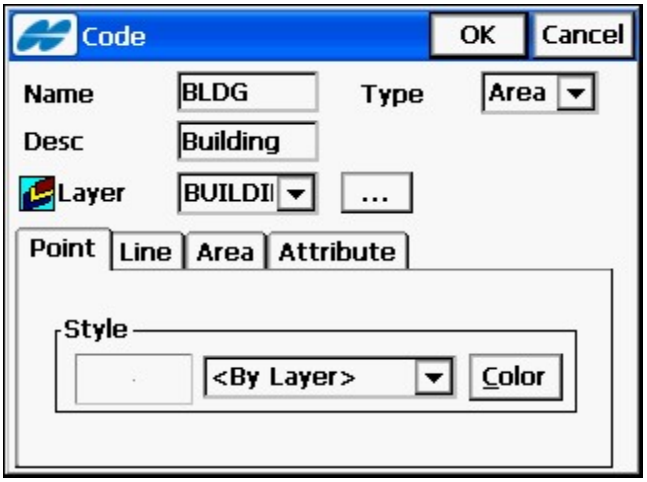


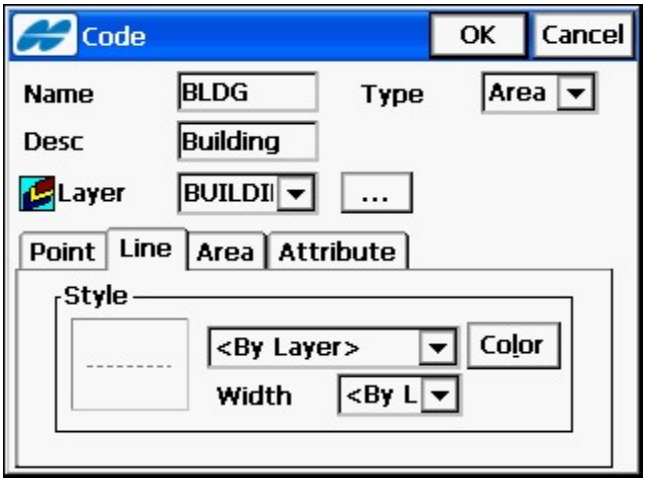
- Added symbols that show the code entity type (Point, Line or Area).

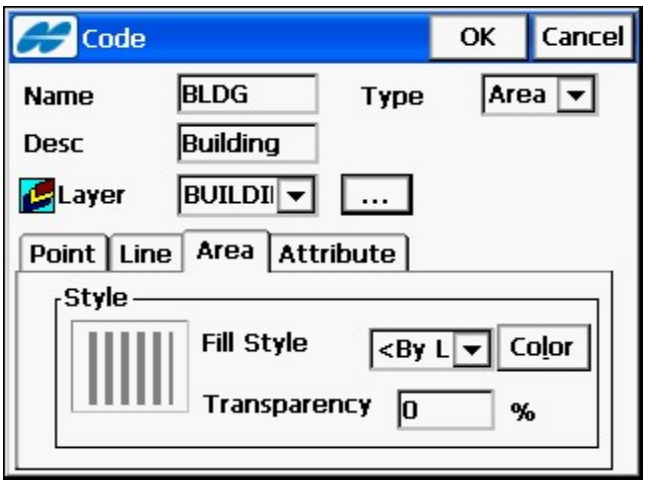


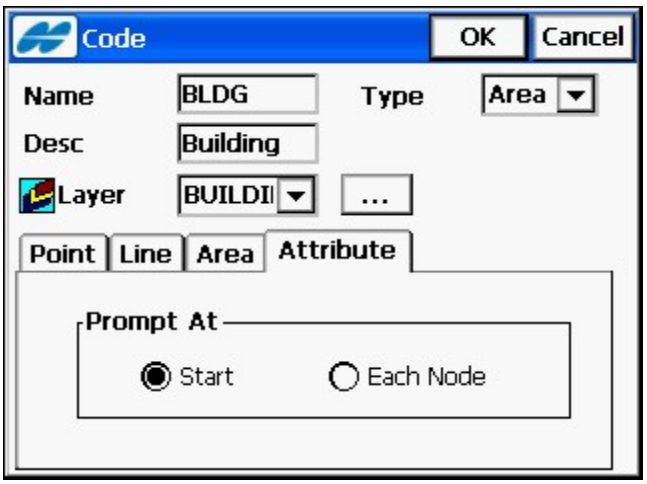


- Each style has an associated plotting attribute and color.
    - Point (Color and symbol for point)
    - Line (Color, symbol for node, style and thickness (weight) for Line)
    - Area (Color, symbol for node, style and thickness (weight) for boundary, fill color, fill style and transparency for Area)
    - Prompt for Attributes (Line and area styles only)

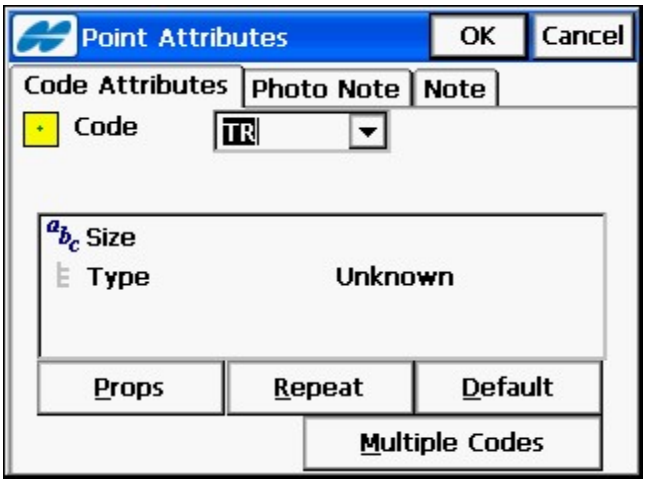




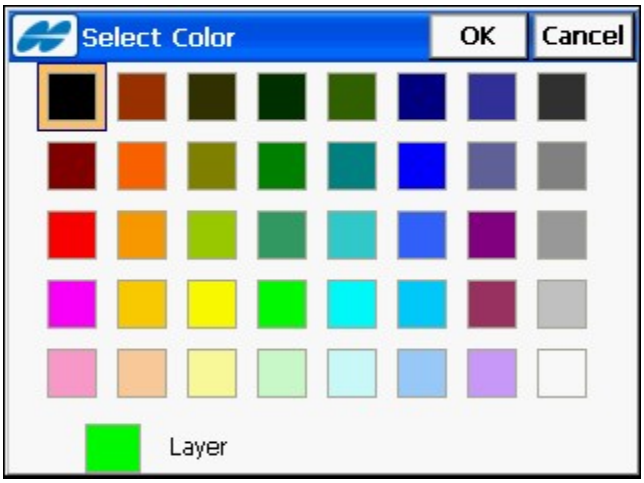




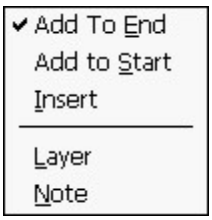
- True/False (Bool) attribute now supported.
- Default and Repeat Attribute options added to the prompt for Feature Code dialog.



- Notes and Photo Notes are all available in the prompt for Feature Code dialog and accessible using this icon  in topo.
- The color selection dialog has been simplified.



Data Collection updated to include considerations for the code type.



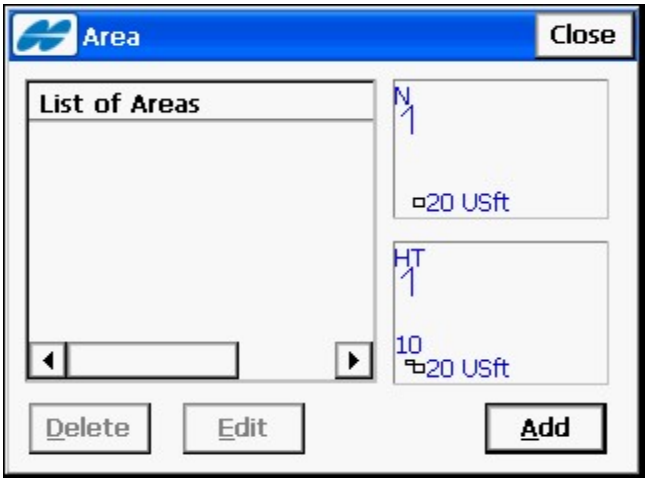
  - Add to End/Start for line and area codes.
  - Insert for line and area codes. This allows the user to insert a point to a line out of sequence.

- Code needs to be defined at the time it is entered if it is not a code that exists in the codes dialog.

Editing of Areas
Layer Objects

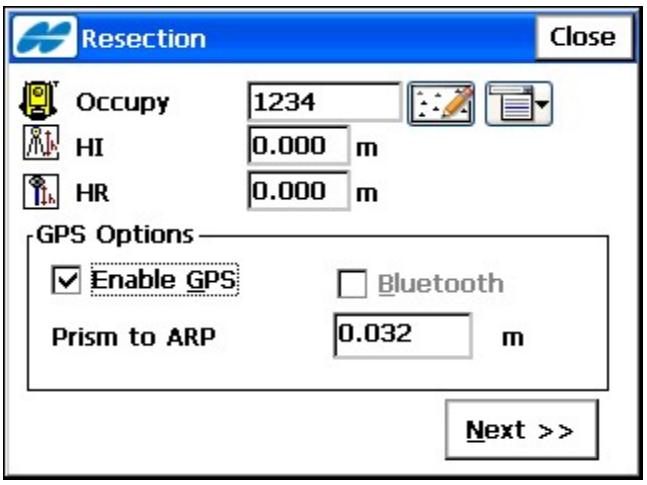
Edit Area

- TopSURV now tracks area features as a new entity type.
- Areas can be edited similar to the way that lines can be edited.

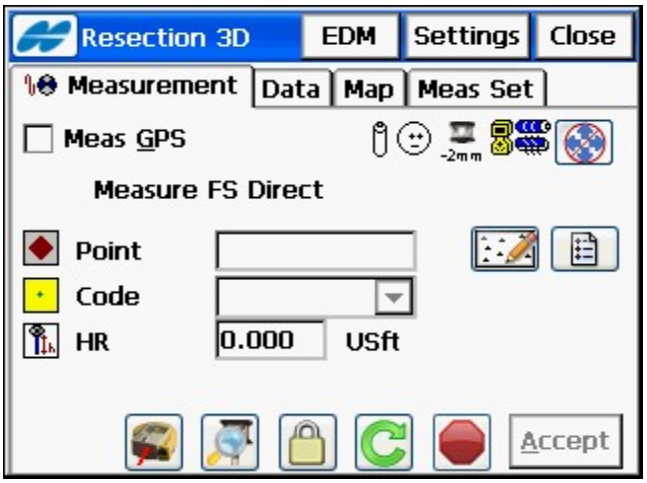


Resection

- Added the ability to define the prism to GPS Antenna Reference Point (ARP) offset.



- Added support to get GPS positions in lieu of pre-defined control points in Robotic mode. This is only available if the user has defined a project using grid to ground or localization. Simply press the Meas GPS toggle and if using Bluetooth, select the receiver name.



Monitor

- Direct/Reverse Measurements
- Non Prism Measurements
- Ability to output GGA positions from robotic TS.

Stakeout

- All screens made consistent to display information
- EDM button moved to the title bar.
- Icons updated.
- Renamed Cur Pos to Meas for TS.
- Allow 10Hz data with GPS.
- Added a Previous Point/Station button

COGO

- Traverse Adjustment - Added a basic Traverse Adjustment routine for Total Station traverses.
- Area - Updates to the results to now display Tolerance Interval. Added the ability to export the results to a text file.

7.1

Important Notes!

- Please back up all jobs prior to upgrading.

- TopSURV 7.1 will now correctly display the base antenna height in jobs upgraded from 6.11.03. This only pertains to 7.0 jobs, or 6.11.03 jobs upgraded to 7.0, where the user has entered the base using mark coordinates and selected the slant antenna height option. Therefore, upgrading jobs from 7.0 to 7.1 might require you to manually edit the base heights of existing 7.0 jobs after upgrading to 7.1. Use Edit - Raw Data to make the corrections.

- It is recommended that you export ASCII points, DXF linework and GC-3 localizations for archiving the surveyed data in generic formats.

- Notes on the Base Antenna Height Setup. User will have to change slant antenna height manually to correct value when he edits Mark Coords. If user does not do this the coordinates of points associated with this base during re-computation will have height discrepancies.
    - TopSURV 7.0 will incorrectly display base antenna height in mark coords in jobs upgraded from 6.11.03
    - TopSURV 7.1 will incorrectly display base antenna height in mark coords in jobs upgraded from 7.0
    - TopSURV 7.1 will correctly display base antenna height in mark coords in jobs upgraded from 6.11.03

FC-2200 Bluetooth Manager Update

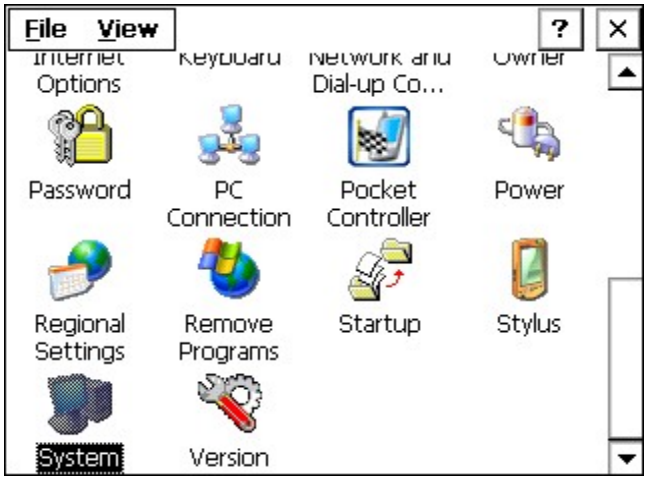
The Bluetooth Manager for the FC-2200 was updated. Please following the instructions listed below to correctly install both TopSURV and the Bluetooth Manager.

Connect FC-2200 to PC

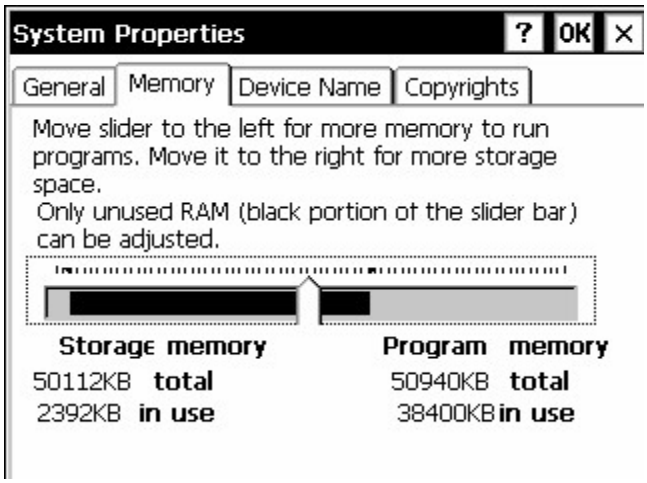
- Power on the FC-2200
- Connect the FC-2200 to the PC using the USB cable & Microsoft ActiveSync.

Install TopSURV

- Adjust the FC-2200 Memory Slider
    - Select the System icon from Control Panel (Control Panel should still be open after adjusting the display settings – If not, Start → Settings → Control Panel)

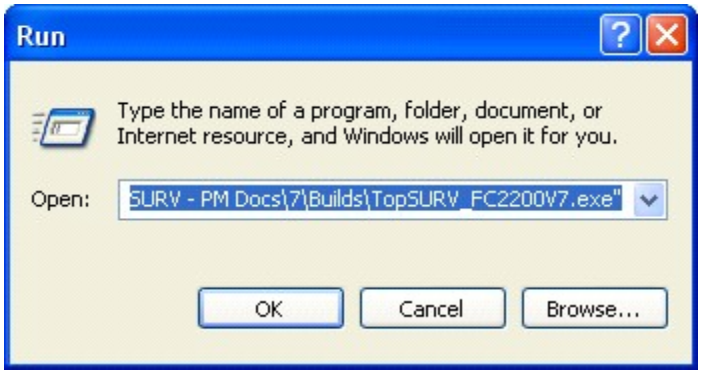


    - Set the Slider to +/- 50000KB Storage Memory (As Shown Below)

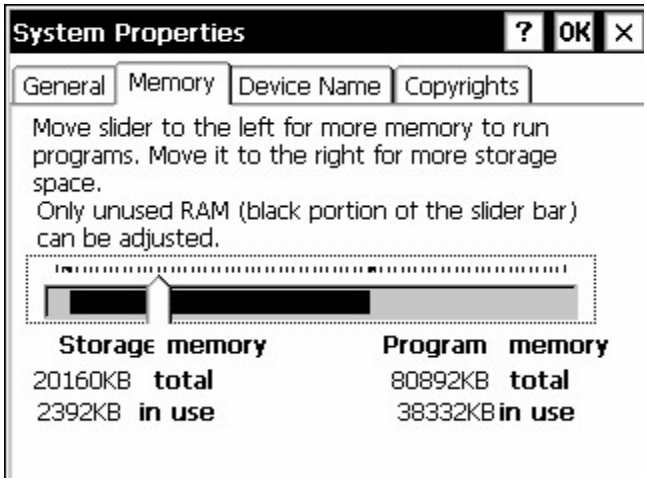


- Close Control Panel

- Install TopSURV by running the install routine on the PC.
  - Start → Run
  - Select "TopSURV_FC2200V7" (or latest install)
  - Select OK

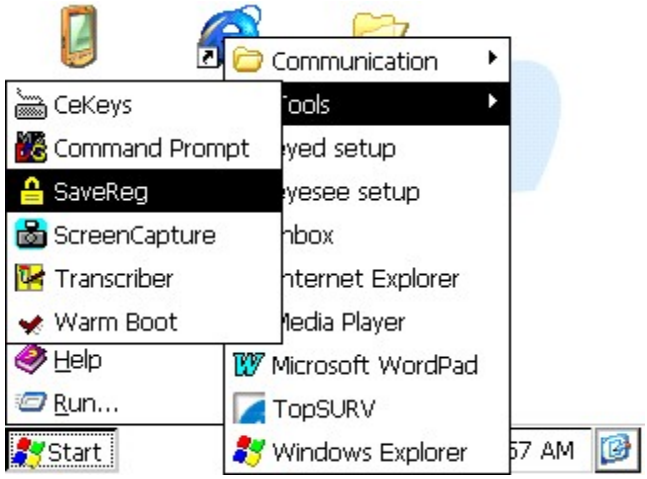


- When the installation is complete, using the method shown above, reset the memory slider to +/- 20000KB Storage memory.



Save & Restart

- Save the FC-2200 Registry
    - Start → Programs → Tools → SaveReg



- Cold Boot the FC-2200
    - Hold down the Power key for 10 Seconds (no less).
    - Release the Power Key
    - Turn on the device.
- Turn on the Bluetooth by clicking on the icon in the task bar.
    - Select “Turn Transmitter On”.
- Check the Bluetooth version by clicking on the icon in the task bar.
    - Select “About…”.
    - The current version is 2.21.

Features and Changes

Features

- Support added for Hiper Digital UHF w/GSM
- Support added for Internal TCP/IP for Internal GR-3 CDMA
- IS Robot has been added to the list of Robotic instruments in the TS configurations - to be handled similar to the 9000 instruments.
- Speed improvement - especially noticed in import, export
- Ability to enter feet and inches in the following formats:
    - Feet.inches.fracNumerator.fracDenominator (we will default to displaying this)
    - Feet'inches"fracNumerator/fracDenominator where the fracDenominator can be either 2, 4, 8, or 16
- Feet and inches updated to display number as 5'4"3/8 instead of 5.4.3.8
- Stake slope routine updated to take out the Calc CP button and show the information in real time.
- Stake slope routine updated to compute Cut/Fill from Cut/Fill Slope, while other offsets are still computed using the Catch Point.
- Added Dialup Parameters for AT&T.
- Robotic remote control arrows enhanced.
- Robotic remote control improved so the Stop command also stops Quicklock.
- Canadian projection file updated to allow more datums.
- The Topcon Bluetooth Manager files for the FC-2200 were updated to version 2.21. After installation, select Start - Programs - Tools - SaveReg. Then press and hold the power button for 10 seconds to cold boot the FC-2200. This will finalize the Bluetooth Manager installation.
- Support for Hiper Lite+(HEGGDT) board added. This corrects the flickering in the Stake screens when using a 1hz unit.
- New command added for Satel to improve switching from UHF to GPRS.
- New radio type Internal Satel GR3(GSM) added.
- Hungarian datum added.

Changes

- Rod Height controls disabled for reflectorless Offset measurements.
- Vertical Alignment Start Point was not set correctly on import in some cases.
- GR3 with internal CDMA, VRS Ntrip updated to support f/w version 3.2 Nov 30, 2007 b6.
- Power on/off when in main menus stopped navigation using the arrow keys.
- COGO Area
    - Known Area – Interface updated.
    - 2D Transform – Next/Back did not update the point pairs.
    - Hinge/Line – Point list was not remembered.
- PP Static
    - For GMS2 – When the configuration is selected, the controller should connect to the selected receiver at all times.
    - Static Occupation – Logged point information is missing from raw data.
- Keyboard Update – Upper case mode shows # in the lower left corner of keyboard and @ for lower case.
- UI Update – Bold font text was getting cut off in several locations.
- DTM map after move was not updated.
- Power selection added for Base using Internal FH915Plus Modem.
- Display scanned points check box was missing from Map Properties.
- Editing of a point without strings, displayed an erroneous string.
- It is now possible to rename an existing point list.
- The note was not being saved when doing a Weighted Avg.
- Added a check for a valid start point (not hidden) when converting a line to a Road.
- BR1 connection was failing when using a GMS2 with the old BT manager.
- Fixed an issue with TopSURV PC trying to import/export jobs from the controllers.
- Weighted average computed with DL points was incorrect.
- Prompt for Pt Code in GPS Survey was missing.
- TTools jobs containing linework was not imported correctly.

- Export of TopSURV X-sect survey (.xss) was failing.
- Export Roads - Some formats didn't always support the export of vertical alignments properly (last station was missed).
- Point logging doesn't work when RTCM2.3 base station sent 3 and 22 messages.
- X-Sect survey was failing when a Road was selected.
- Coop tracking option was missing – this is not available only for the GMS2 when used with internal receiver.
- Fixed an issue with missing base station information when switching from VRS transmitting 23/24 RTCM to 3/22 RTCM.
- Import of DXF file as a TIN failed when loading as background.
- Codes were getting repeated in jobs imported from TTools in the Point/Line/Area mode.
- Map HP Radio Baud rate was incorrect.
- Stakeout - Store next point was not storing next point.
- X-sect Templates – segment names were cluttering up the x-sect view.
- Survey styles were not getting upgraded from previous versions.
- Control codes persisted even though the option was turned off.
- Find Station/Chainage report was missing some information.
- Robotic auto-topo raw data was not getting stored.
- Import Point Lists (as Background) in the DXF/DWG format wasn't working properly.
- Find Station. Switching Road/Alignments was not working on the controllers.
- Layers were not imported from the Code Library.
- Controller did not show SVs, SNR, List Status with HGG receiver.
- Speed issues related to FC200 – topo offset points calculated slowly.
- Antenna calibration type was not required in pp kinematic mode.
- Connection with Robotic TS instruments improved.
- Photos captured with GMS2 had colors swapped.

- Code and control code with space was not saved correctly.
- Robotic Mode – It was possible to delete the Occ Pt.
- Images associated with onboard files V6.11 were not updated correctly.
- TS Mode. The program "forgets" the Backsight settings after closing the Edit Raw Data screen with the Cancel button.
- Help for PC version fixed.
- GR3 with Internal CDMA, VRS NTRIP from ODOT. Fixed in the firmware version 3.2.
- Direct TCP/IP connection to network server with Internal CDMA – incorrect dialog was displaying.
- Problem with Internal HiPer GSM (Wavecom) modem timeout command taken out.
- Log History is empty for rover in PP DGPS mode.
- Minnesota projection calculations corrected.
- When using NAD83_NO_TRANS datum with NAD83-based geoid, separation was calculated using NAD83 datum.
- Edited points were overwriting stations and associated data.
- Import road (LandXML) - Imported road was corrupted if the source road was created with intersection points.
- Arcs were not always imported correctly from LandXML format.
- Stakeout screen was being closed by the enter button.
- Tape Dimension - The Tape Dim screen is displayed incorrect on the vertical display.
- X-Section Survey - Interval value was changing when switching from HAlnt to Road.
- Zoom was not remembered in MAP.
- Hiper and GR3 GSM – Issues with status display corrected.
- Point/Line/Area Auto-Linework – Codes with required attributes were not generating linework correctly.
- Cogo - Road and offsets were not getting computed correctly.
- 6.11.xx jobs will be automatically upgraded to V7 during the "Import From Job" process. The original job will be copied to the archive folder prior to the upgrade.

7

Important Notes!

- TopSURV 7 has a completely new job database. It is strongly recommended that all jobs created in 6.11.03 and before are exported to ASCII points and GC-3 files prior to upgrading.
- We've expanded the SS Wireless radio channels to 1-20. In order to use a channel above 10, you must update the instrument operating system. Channels 11-20 should be used when more than one robot is on the same site.
- Help, About and Activation options are all now located in the Topcon logo button.

Equipment

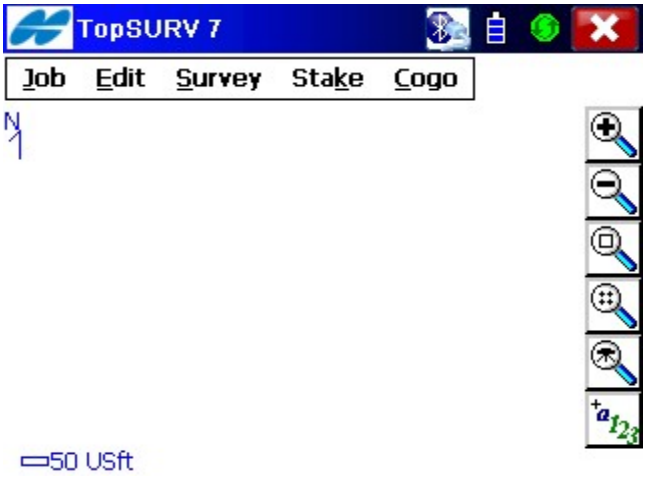
- Added support for the Digital UHF TRL-2 radio.
- Added the ability to change the protocol and modulation of any Digital UHF radio in the Config Radio screen.
- Added support for the GR3 with internal Satel radio.
- Added support for MapHP with HB_BULB f/w 1.5b0.
- Added support for the new FC-2200 field computer and RS-3 radio (SS Wireless) .
- Added GSM support for the GR3 with internal Satel radio and internal GSM/GPRS modem.
- Added functionality to switch between internal UHF and GSM modems when the baud rates of the two modems are different.
- Added Beacon status for BR1.
- Added dialup networking support.

Features and Changes

General

- TopSURV now uses a SQLite Database. Jobs extension have been changed to (*.tsj) and the same extension applies to jobs on the controller and the PC. The conversion from a (*.tsv) file to a (*.tslv) file is no longer required, therefore, jobs can now be transferred using a memory card or ActiveSync. TopSURV 7 will convert an old job to the new format and it will also make a copy of the old job and place it in an archive folder on the controller.
- TopSURV now has a new icon based menu interface. However, the ability to switch to the classic menu interface has been preserved using the Switch Menus item from the Topcon logo button (top left corner of the main menu).

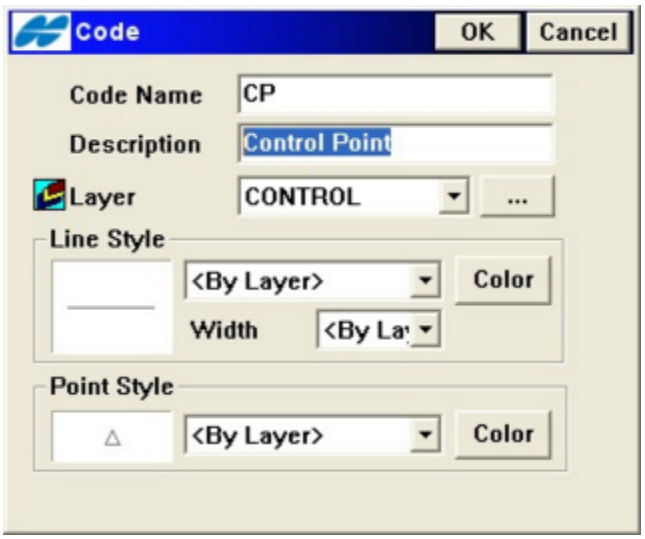
New Menu Interface



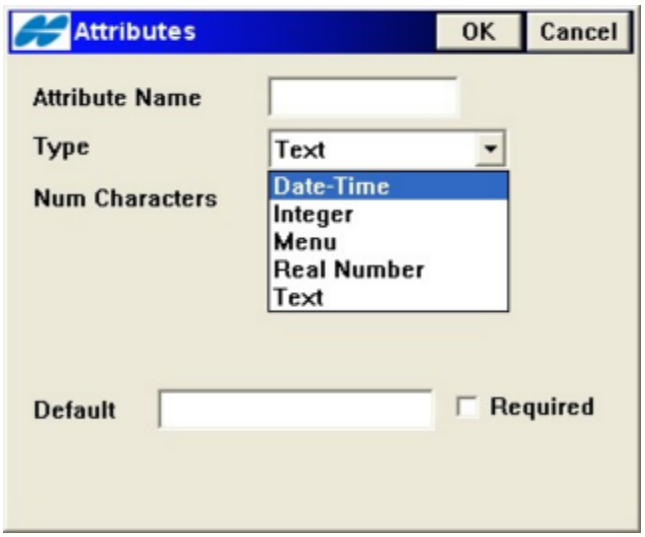
Classic Menu Interface

- A Port Data Logging feature was added to the Topcon logo button as well. This adds the ability to log data sent by the total station to a text file.
- TopSURV will now retain the last user specified file paths.
- TopSURV will now retain the last settings in the dialogs.

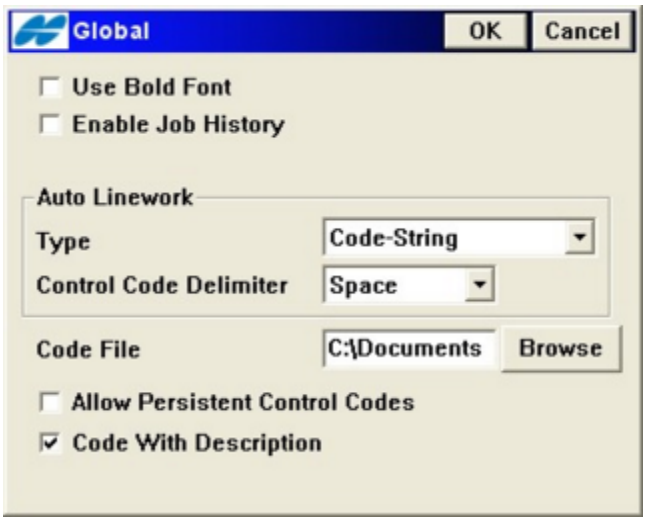
- Add the ability to define the full description of a code.



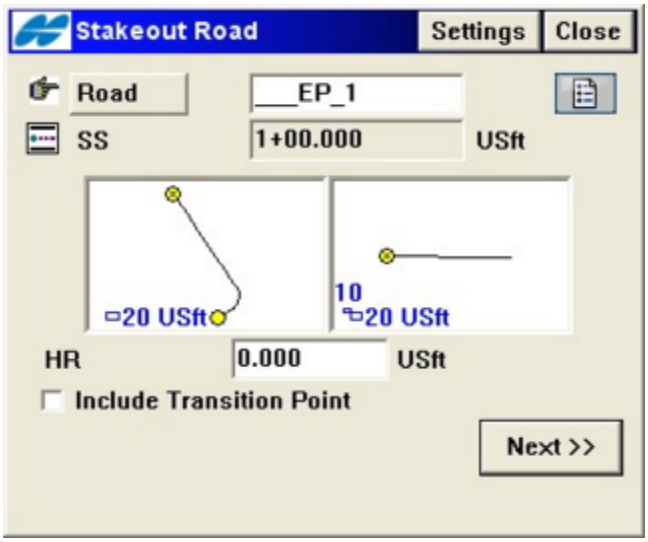
- Attributes can now be defined with additional features.

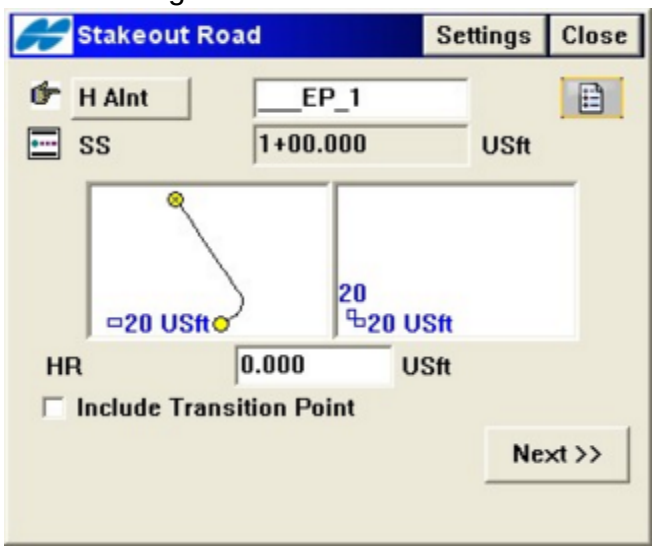


- Added an option to persist control codes between points to the Global Screen.



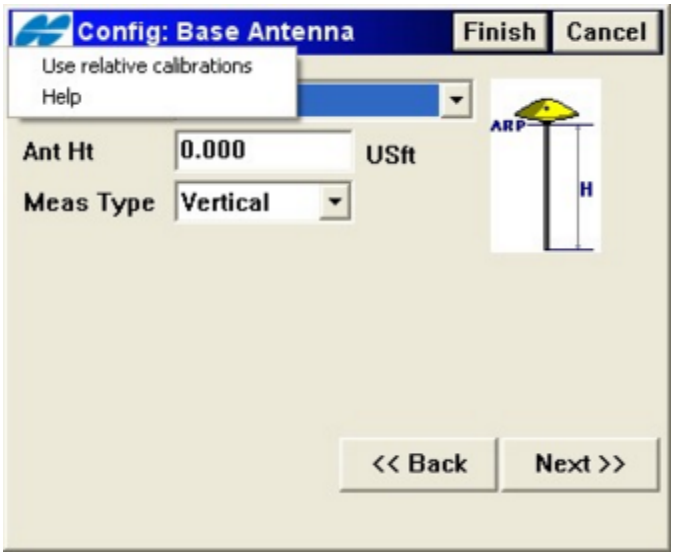
- Added the ability to select either Road or Horizontal Alignment in all Road routines.

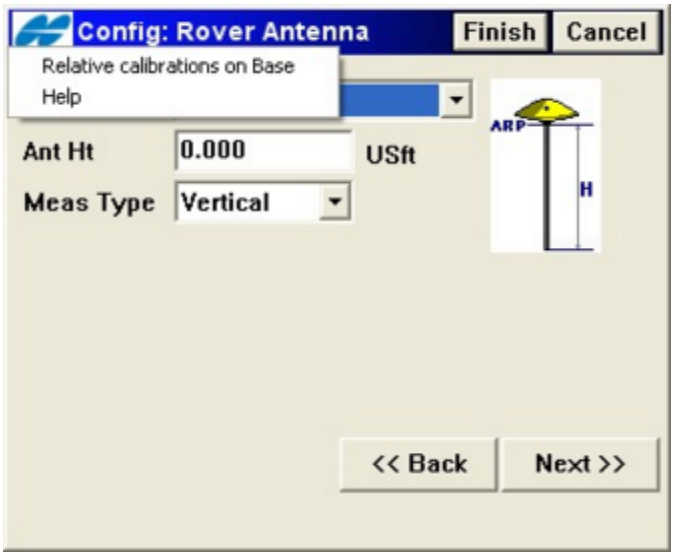




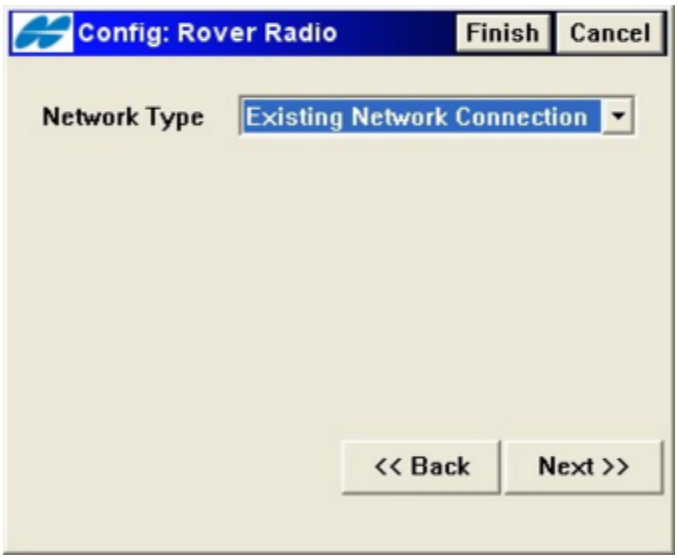
Configurations

- TopSURV will not attempt to reconnect after exiting the Styles dialog as long as the current style has not changed.
- TopSURV will not call up the Bluetooth dialog while editing styles if it is not connected to a receiver.
- If multiple Bluetooth COM ports are available and one is connected to a GPS receiver, TopSURV will use the other port to connect to the BR1 or a CSD devices and allow both connections simultaneously.
- Option to use relative antenna calibrations. Option is located in the Topcon logo button in the antenna selection dialog. This option should be used when it is known that the base antenna or network antennas use relative calibrations. By default, TopSURV 7 will use NGS absolute antenna calibrations.



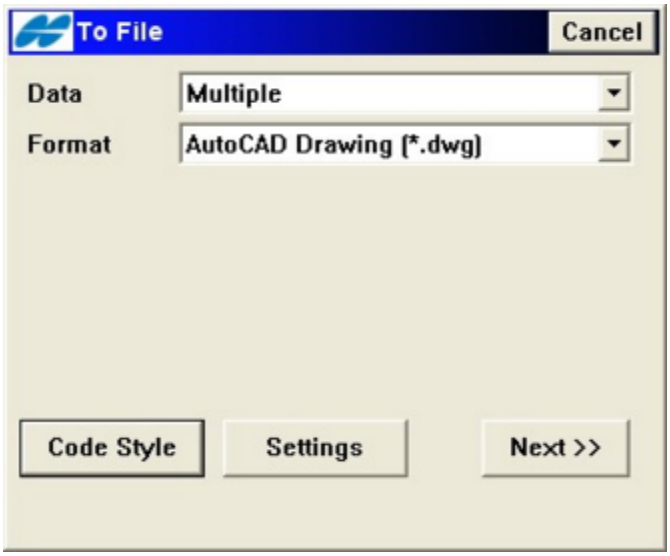


- Added "Existing Network Connection" when the user is using NTRIP or TCP/IP and has selected “ Modem Connected to Controller”.

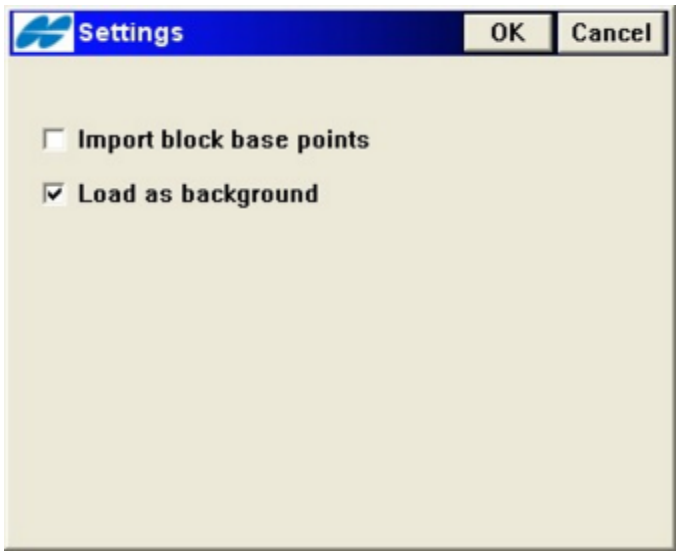

Config: Rover Radio
Finish
Cancel
Network Type
Existing Network Connection
<< Back
Next >>

Import/Export

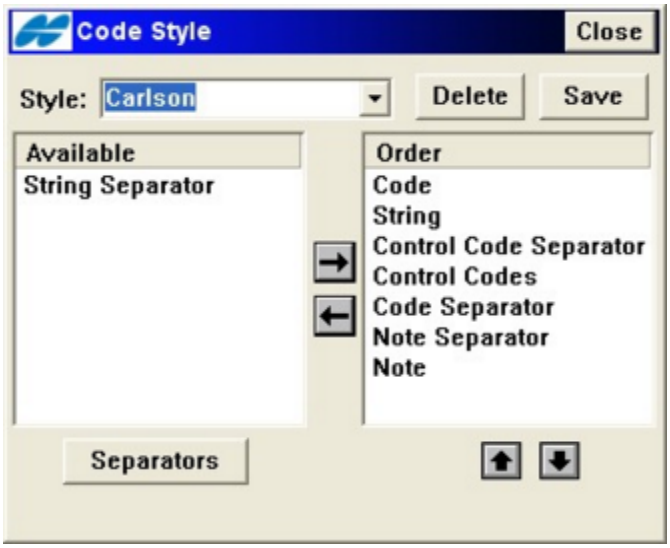
- AutoDesk (*.DXF/*.DWG) - Updated to include options for 3D linework, Carlson blocks, and ACAD points with plain text. Also added the ability to import a drawing as a background image for faster imports.



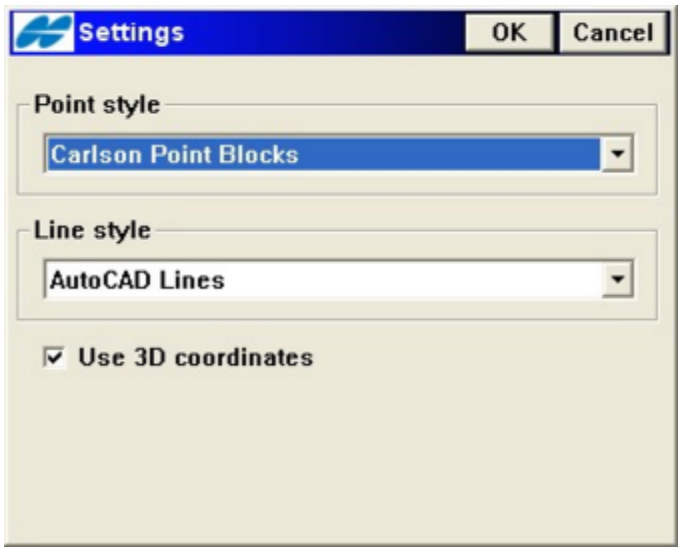
Export Multiple - DWG



Import Multiple - DWG - Settings



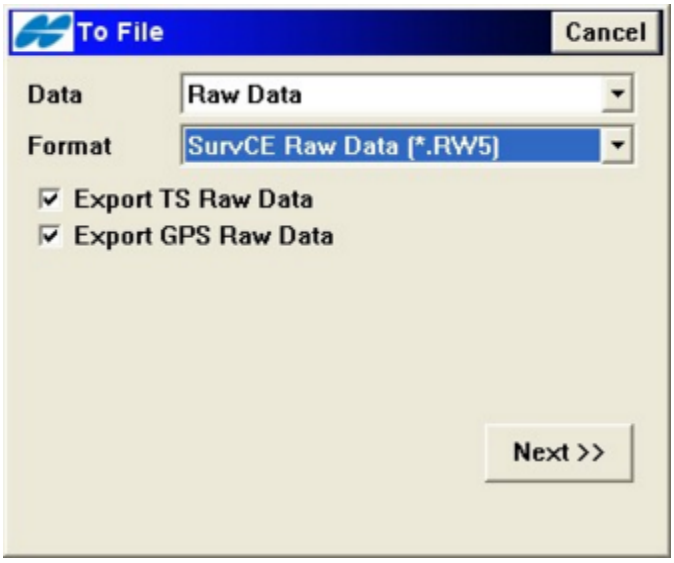
Export Multiple - DWG - Code Style



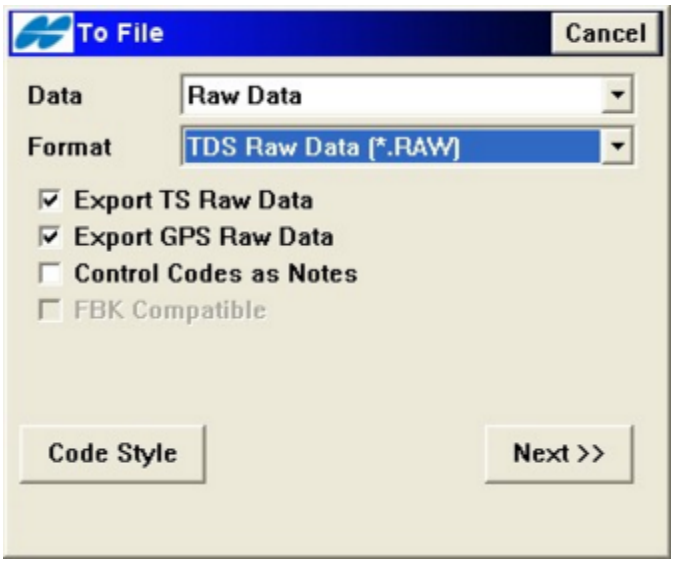
Export Multiple - DWG - Settings

- AutoDesk (*.FBK) - Added support for export of GPS points, offsets and linework.
- Bentley (*.DGN) - Added the ability to import a V8 file.

- Carlson (*.RW5) - SurvCE format now supported.

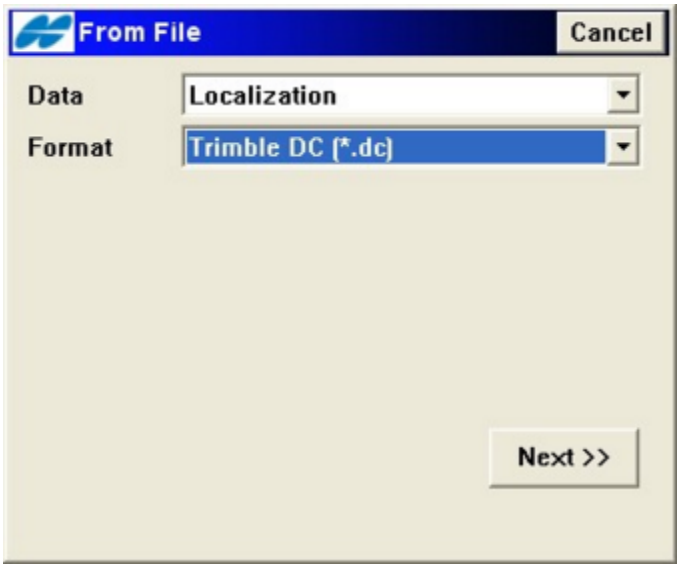


- ESRI (*.SHP) - Export of Code Description has been added to the format.
- TDS (*.RAW) - Added support for code styles, linework, control codes as notes and GPS offsets.



- Topcon (*.LN3) - Format now supported.

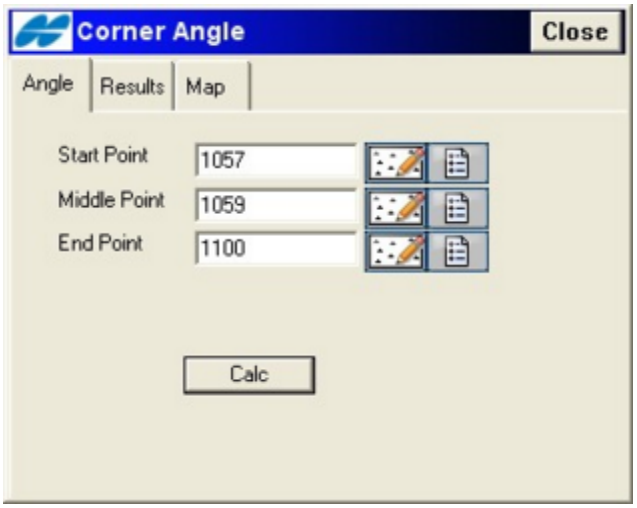
- Trimble (*.DC) - Added the ability to import the localization.

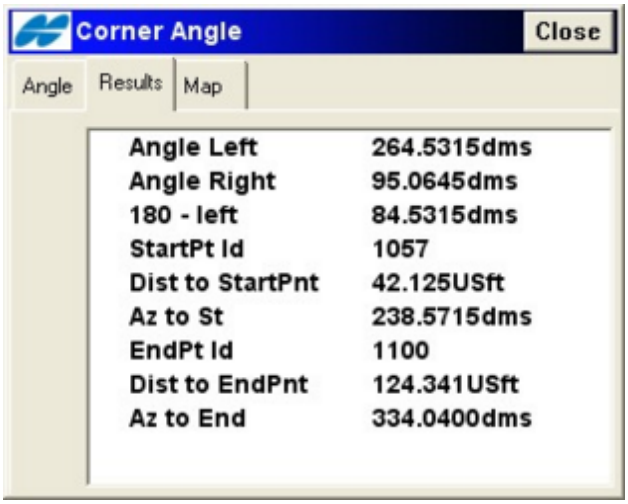


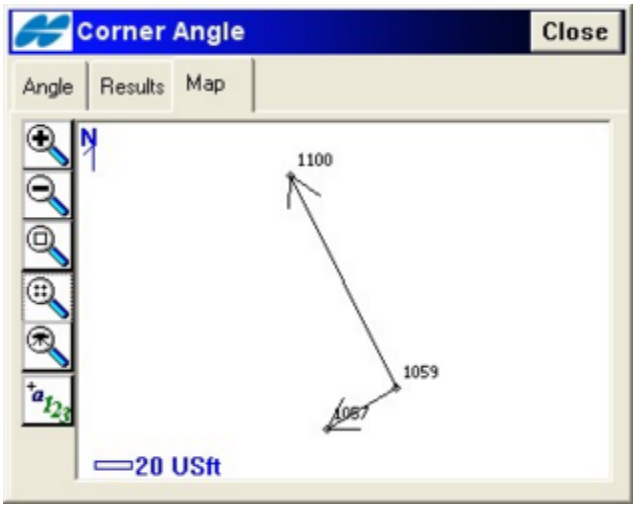
- Added the ability to export 3D arcs to all line formats which don't support 3D arcs by using piecewise-linear approximation.
- Added the ability to export reduced raw measurements to all formats that support it.
- Added the ability to export multiple shots for all formats that support it.
- Added the ability to save/delete format styles for Custom Text formats.
- Added the ability to define Code Styles - This provides the ability to define the order of the code, string, control code and their separators in Custom Text ASCII, Drawings and TDS raw data files.

COGO

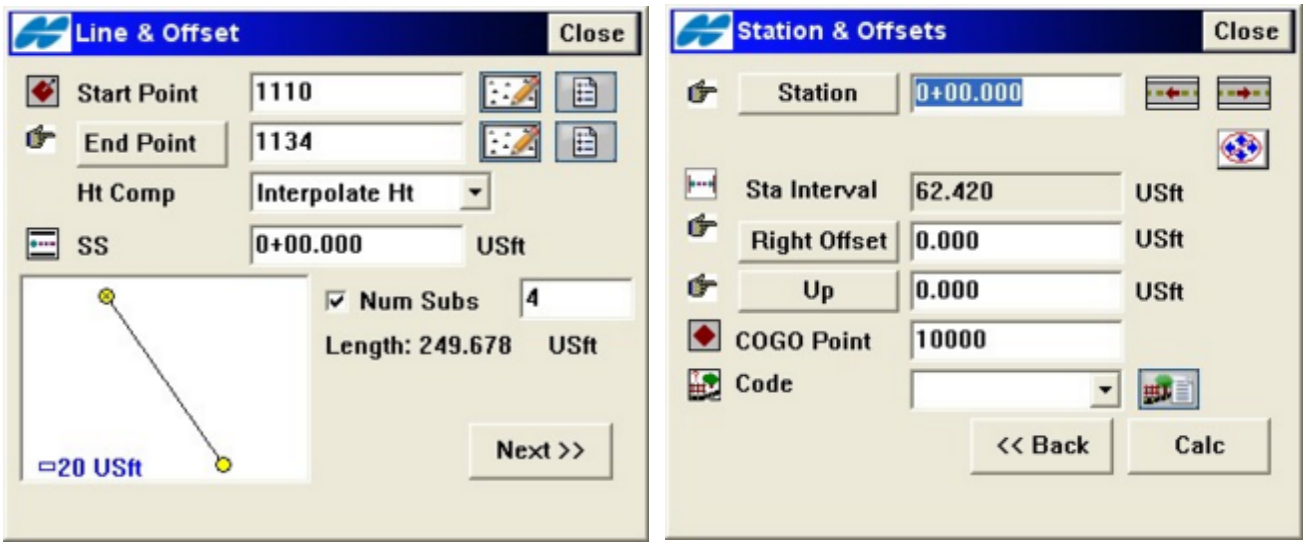
- Added Corner Angle



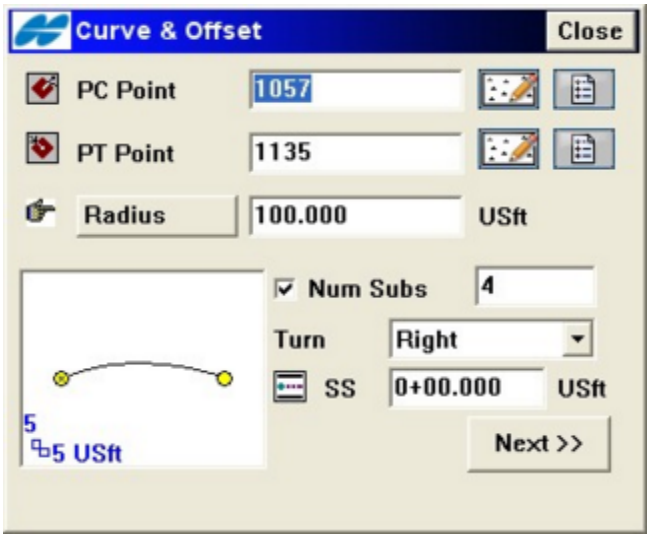




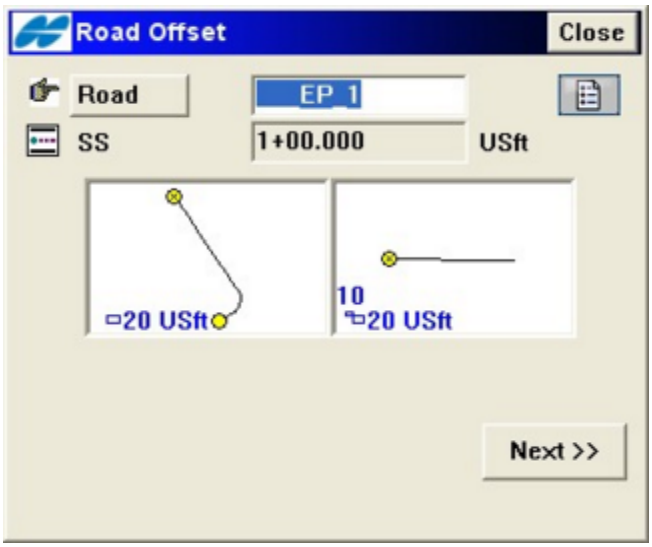
- Added Line Offset. Added the ability to subdivide the line.



- Added Curve Offset. Added the ability to subdivide the arc.



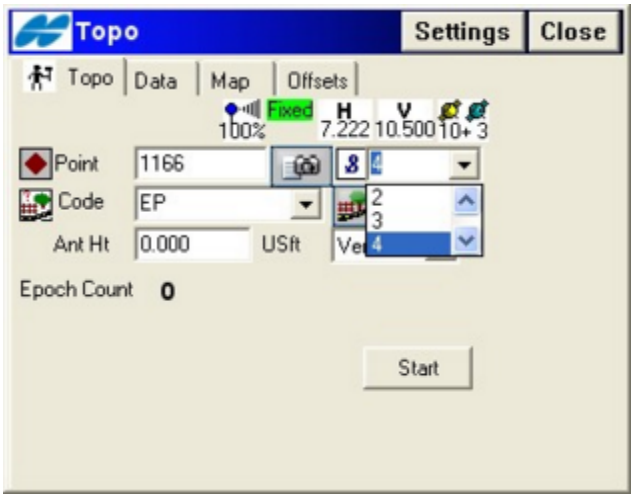
- Added Alignment Offset. User can now select Road, H Alnt or H & V Alnt.


Road Offset
Close
Road
EP_1
SS
1+00.000
USft
20 USft
10
20 USft
Next >>

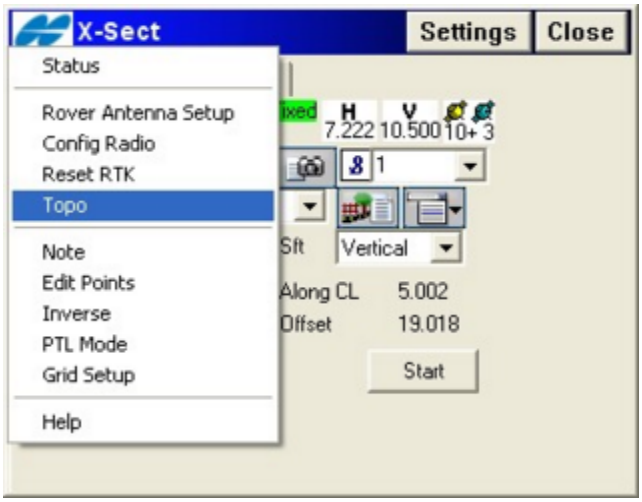

Road Offset
Close
H Alnt
EP_1
SS
1+00.000
USft
20 USft
20
20 USft
Next >>

Survey

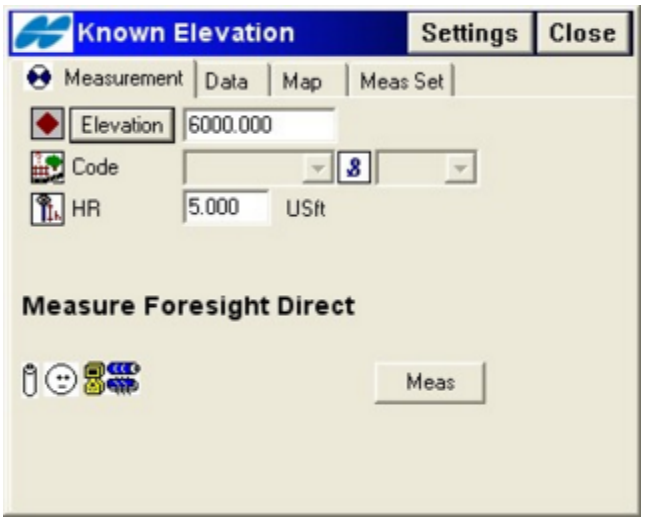
- Strings are now listed by code in a combo-box.

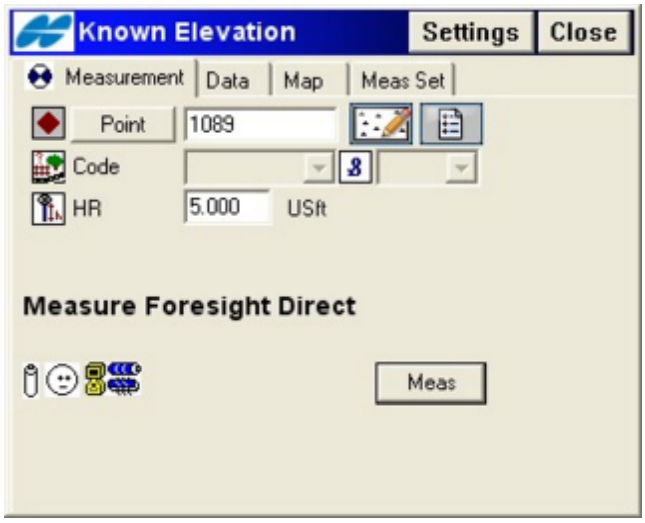


- Survey X-Sect – Menu item added to the Topcon logo button to go to Topo directly from this routine.



- Added option to enter elevation instead of point name for Remote BM (formerly Elevation).



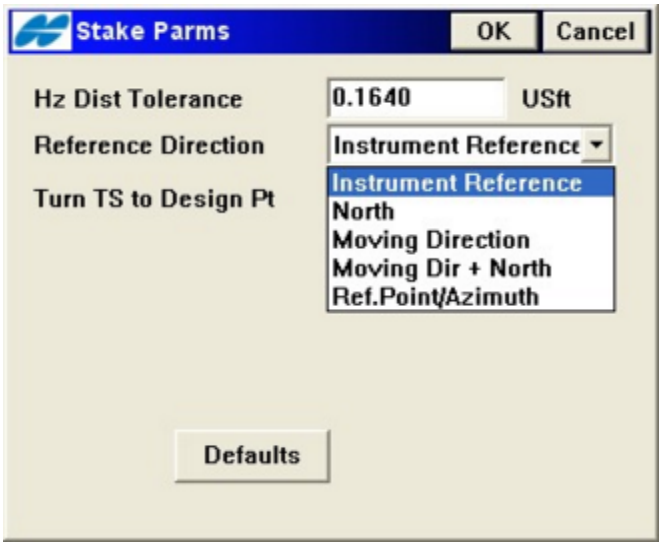


- 10Hz for AutoTopo now supported.

Stakeout

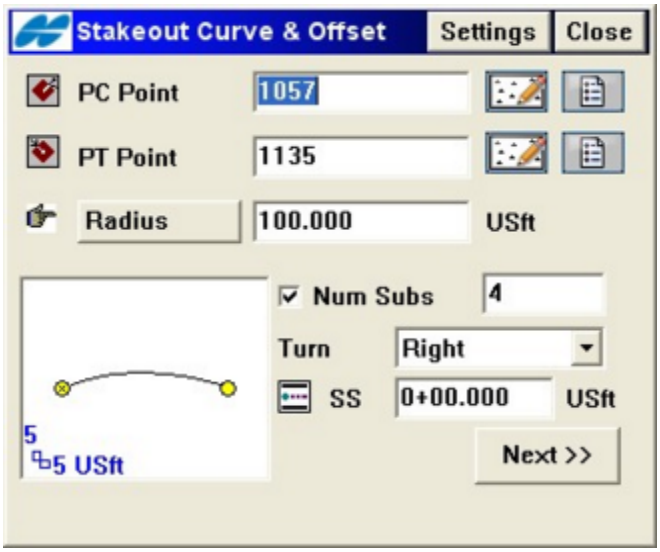
- Added the ability to stakeout using autonomous measurements. Only allows navigation and will not store a point.
- Road/Slope/Realtime Roads. If road has a vertical alignment, cut/fill will not be displayed or stored when not on the vertical alignment.
- More Reference Direction types added to Stakeout.

GPS



Total Station

- Subdivision option added to Curve and Offsets.



- Added menus to allow all staking functionality when we have DGPS survey styles selected if the GPS+ security is activated.

Projections and Geoids

- KKJ Finland updated.
- Spain Geoids for Catalonia renamed and updated.
- Portugal projection and datums added.
- SPC27(Lambert) projection – Somoa zone updated.
- NAD27 NADCON support added.
- Indication of unsuccessful Geoid calculations in Points dialog was added.