Nuwa Version(2.2.2.0) Release

January 13, 2021

Overview

Tersus GNSS Inc. ("Tersus") is glad to release the Nuwa for GNSS receiver. Nuwa version

(2.2.2.0) is available to download at www.tersus-gnss.com/software/david-receiver

and support documents are available at www.tersus-gnss.com/document/software.

Features

➢ Assists with Bluetooth/USB connection

➢ Configure base/rover setup

➢ Visualized interface for receiver operations

➢ Data management (import/export)

Change from Previous Versions

Issue	Type	Version
Added length unit support of US feet.	Enhancement	2.2.2.0
When creating a new project, added the selection portal of plane grid and geoid.	Enhancement	
Added support for Ireland 35 parameter conversion model, add Ireland geoid of gri format.	Enhancement	
Added support for French geoid of MNT format.	Enhancement	
Added the predefined coordinate system of Philippines.	Enhancement	
During connecting with David, added the function of decoding and applying RTCM1021/1023/1025 when receiving CORS data through the controller network.	Enhancement	
Added function of getting the nearest point and its mileage on the design road when staking a road.	Enhancement	
Optimized the application after unit setting, effective for import and export and other functions.	Bug Fix	
Optimized the processing of the deviation between the device positioning and the central meridian of the project, it will no longer correct the central meridian automatically, but ask whether to jump to the project parameters interface for manual correct.	Bug Fix	

Optimized the interaction of the stakeout interface, it automatically obtains 5Hz position data refresh frequency when entering stakeout interface.	Bug Fix	
Solved the issue that David may crash when connected by USB in the previous version.	Bug Fix	
Added photo taking function after point measurement.	Enhancement	
Added QR code sharing function for survey point.	Enhancement	
Added display and export of ECEF-XYZ coordinate and BLH (Local) coordinate.	Enhancement	
Added NCN format import and export, KML/KMZ format import and export.	Enhancement	
Added base station point export.	Enhancement	
Added the display form of ENh coordinate.	Enhancement	
Added simulation connection function.	Enhancement	
Added the function of registration by scanning code.	Enhancement	2.2.1.0
Added function of setting satellite system.	Enhancement	
Added Oscar log download function and battery change mode setting.	Enhancement	
Added function of automatically connect Oscar when starting software.	Enhancement	
Added Oscar internal radio call sign setting function.	Enhancement	
Added differential delay threshold limit.	Enhancement	
Added display of 2D/3D error in the whole interface.	Enhancement	

Added earthwork calculation tool.	Enhancement	
Added anglular bisector calculation tool.	Enhancement	
Corrected Sweden predefined coordinate system.	Bug Fix	
Optimized GSF geoid support.	Bug Fix	
Optimized French resources.	Bug Fix	
Fixed the problem that the coordinates are not refreshed in time between start and stop.	Bug Fix	
Added David30 device support.	Enhancement	
Added Swedish predefined coordinate system.	Enhancement	
Added notice of installing the radio antenna when starting up the Oscar internal radio base mode.	Enhancement	2.2.0.0
Fixed the occasional delay in coordinates refreshing when connecting with Oscar.	Bug Fix	
Updated the display of modulation when setting the Oscar internal radio mode.	Bug Fix	
Fixed the issue that getting the central meridian by clicking the button and getting the central meridian automatically when connecting the device are logically different.	Bug Fix	
Added the predefined coordinate system of Tianjin 2000.	Enhancement	
Added the predefined coordinate system of Netherlands RDNAP2008, and support for the ASCII format horizontal grid and vertical grid under this coordinate system.	Enhancement	2.1.10.0
Added the projection parameter setting, the button that the central meridian is	Enhancement	

automatically obtained according to the current position.		
Added the function of survey point editing, allowing to modify the point name and antenna information of the measured point.	Enhancement	
Added the function of checking coordinates via road mileage.	Enhancement	
Added the display of modulation type and channel bandwidth when connecting to Oscar and using the internal radio.	Enhancement	
Added the network link of TCS protocol when connecting with David.	Enhancement	
Added the display of the distance from the previous survey point in the survey interface.	Enhancement	
Added the display of stakeout collection points in the stakeout interface.	Enhancement	
When staking out the line to the vertical point, if the vertical point is on the extension line, added the drawing display of the extension line.	Enhancement	
When staking out the line to the stake point, added the memory of stake number, and re-enter line stakeout will continue stakeout according to the stake number before exiting.	Enhancement	
Fixed the problem that the antenna type is empty in the survey configuration after Oscar is connected via NFC when the software is not started.	Bug Fix	
Fixed the problem that it will stuck in the	Bug Fix	

startup for a long time if there is a network problem when starting the PDA Network working mode.		
Added data editing for cross section, super elevation, and widening of road module and side stakeout function for road stakeout module.	Enhancement	2.1.9.0
Added the display of vertical point or stake point mileage during line stakeout.	Enhancement	
Added the distinguishing display of positive and negative offset during line stakeout.	Enhancement	
Added the predefined coordinate system of Xi'an 80.	Enhancement	
Fixed the crash problem after connecting to Oscar, turning on the static recording and quickly starting the rover radio mode.	Bug Fix	
Fixed the crash problem when importing illegal csv files.	Bug Fix	
Fixed the lagging problem when there are too many points in the Survey interface.	Bug Fix	
Fixed the problem that when the threshold of point stakeout is set too large, clicking the full image to display will lead a crash.	Bug Fix	
Fixed the problem that the software still displays the coordinate and solution status in the last second of the search when the satellite is not searching suddenly.	Bug Fix	
Fixed the problem that the offset may be calculated incorrectly during the line stakeout.	Bug Fix	

Fixed the problem that the central meridian is reset to 0 in Spanish mode.	Bug Fix	
Fixed the problem that garbled characters are displayed when opening the exported csv file in Office Excel by default in Chinese mode.	Bug Fix	
Added support for Stations Equation, Vertical Profiles and Start Mileage in the road function, and road stakeout performs three-dimensional stakeout of center stake.	Enhancement	2.1.8.0
Added support for export in DXF format whose name or code contains Chinese characters.	Enhancement	
Modified the predefined coordinate system of Turkey.	Bug Fix	
Road management and road stakeout are added to the software. The current version supports the editing of Alignment by intersection method and element method, conversion of intersection method to element method, and road stake out function. Other functions will be implemented in subsequent versions.	Enhancement	2.1.7.0
Added Survey with confirmation button to the survey configuration. After turning if off, the survey point data will be saved directly without confirmation box.	Enhancement	
Added the display of QZSS satellites in the sky map and satellite table.	Enhancement	
Software optimization: retain the user's common configuration habits; SNR is adjusted	Enhancement	

to CN0; Portuguese pre-defined coordinate system name adjustment.		
Fixed the crash issue of clicking the offset point tool to enter the point library to select the point when the project is not opened.	Bug Fix	
Fixed the crash issue of switching to Turkish to perform point survey.	Bug Fix	
The Chinese version of the software is renamed to "Tianshuo Measurement", and the Chinese display is optimized in the software.	Enhancement	2.1.6.0
Added the function of rotating the map view when staking out, check this function in the display config interface of staking out.	Enhancement	
Added the function of importing points to the survey point library from coordinate files; add the function of importing points to the control point library or the stakeout point library from DXF, SHP, SIMA files.	Enhancement	
Added the L value negative input and calculation in the offset point from line tool.	Enhancement	
Optimized Bulgarian display.	Enhancement	
Fixed the problem that the software automatic calculates the UTM number incorrectly when it is located in the Western Hemisphere.	Bug Fix	
Fixed the problem that mtext is not displayed when importing some DXF basemaps.	Bug Fix	
Fixed the problem that prompy might not be correct when selecting forward and backward stakeout prompt type.	Bug Fix	

Fixed the problem that when the tilt function is turned on, the rover mode is stopped and the coordinates are no longer refreshed.	Bug Fix	
Support DXF import as the base map, and add function of selecting points on the DXF base map to the staking point library.	Enhancement	2.1.5.0
Add the export of the collected line when exporting DXF.	Enhancement	
Support SIMA format import with empty elevation data, add the encoding setting when selecting SIMA import and export, to avoid the situation of garble code.	Enhancement	
When connecting with Oscar, it can be chosen to shut down the Oscar receiver at the same time when exiting Nuwa app.	Enhancement	
When configuring David at base mode, add the 'save config' statement.	Enhancement	
When performing point stakeout and line stakeout, add the search function for staking point and staking line.	Enhancement	
Add the checkbox 'Display All Staking Point' in the display config of the point stakeout interface.	Enhancement	
Adjust part of the statement display for English, Chinese, Japanese, and Greek.	Enhancement	
Add predefined Mexican coordinate system.	Enhancement	
Solve the crash of selecting empty project as the source project if there is no project in the app.	Bug Fix	

Added Bulgarian displayed.	Enhancement	
Added Irish pre-defined coordinate systems.	Enhancement	
Fixed the problem of low success rate of David connection.	Bug Fix	
Fixed a crash of the tilt enable button when connecting with Oscar Ultimate, if the Android phones do not support GIF view.	Bug Fix	2.1.4.0
Fixed the problem that when connecting Oscar Ultimate and turning on the tilt enable, and then switching to connect David, the tilt button was still on.	Bug Fix	
Fixed the crash of clicking the confirm button on ths soft keyboard on TC20 after modifying the point name in stakeout.	Bug Fix	
Added tilting initialization instructions, optimize tilting interaction, and add tilting initialization, measurement and lofting instructions in user manual.	Enhancement	
Added Malaysia RSO projection.	Enhancement	
Added Offset Point From Line in the Offset Point tool, to determine the Point on the extension Line or the Point after Offset on the extension Line.	Enhancement	2.1.3.0
Added the elevation difference, slope ratio and so on the calculation results in the Azimuth Distance tool.	Enhancement	
Added the Greek display in Nuwa.	Enhancement	
Added Slovenia predefined coordinate system.	Enhancement	
Added Morocco predefined coordinate system.	Enhancement	

Added Belgium predefined coordinate system.	Enhancement	
Added Netherlands predefined coordinate system.	Enhancement	
Added Guatemala predefined coordinate system.	Enhancement	
Added Columbia predefined coordinate system.	Enhancement	
Added Austria predefined coordinate system.	Enhancement	
Solved the problem that when connecting with David, the parameters of compass could not be read, and the stakeout indicating arrow was invalid.	Bug Fix	
Solved the problem that the DXF file exported by Nuwa may can't be imported into autocad.	Bug Fix	
Solved the problem that coordinates may not be refreshed after tilt off.	Bug Fix	
Fixed the problem of parameter calculation or point correction, in which the error details of each pair of points cannot be seen.	Bug Fix	
Optimized Japanese display.	Bug Fix	
Optimized Spanish display.	Bug Fix	
The input control is optimized. A one-click clear button is added to the input box. The latitude and longitude input box supports intelligent input and real-time format switching.	Enhancement	2.1.0.9
Added CGCS2000 predefined default coordinate system.	Enhancement	
In the connection interface the Bluetooth	Enhancement	

name and MAC address display in newline.		
When connecting Oscar receiver and setting the base station mode, added CMR and RTD differential formats.	Enhancement	
When connecting Oscar receiver and setting static, added configuration record duration, and add recorded duration display.	Enhancement	
When connecting Oscar receiver and setting the built-in network base station mode, added Ntrip protocol support.	Enhancement	
When connecting Oscar receiver, added NMEA serial output configuration.	Enhancement	
When connecting Oscar receiver, added disk usage display and remaining capacity display.	Enhancement	
Added heading display when connected to David plus.	Enhancement	
Adjusted the size of the point name on the Survey interface.	Enhancement	
Added SHP basemap import function.	Enhancement	
Added satellite map display on the online map of Survey interface.	Enhancement	
Added the function of stakeout to the vertical point on the line for Line stakeout.	Enhancement	
Modified the point type of the collection point during stakeout to "Stakeout collection point" to distinguish it from general Detail points and added the property of distance from the target point.	Enhancement	
Fixed the problem of using the layer name as	Bug Fix	

the point name in other import - DXF import.		
Fixed other import - SHP import failure issues.	Bug Fix	
Fixed the problem of low success rate of NFC connection.	Bug Fix	
Fixed the problem of displaying registration information error when connecting unregistered Oscar receivers.	Bug Fix	
Fixed the problem that the base coordinates of the collection point are incorrect when switching between network 1 + 1 mode and VRS mode.	Bug Fix	
Organized Chinese and Japanese translations in the app.	Bug Fix	
Added the function of the plane grid.	Enhancement	
Added the support of GRD, GSF, OSGB plane grid or geoid.	Enhancement	
Added the function of online download plane grid or geoid.	Enhancement	
Added the import and export of SIMA format files.	Enhancement	
When inputting the repeated line name to continue the Linework measurement, it is supported to choose from the start point or the end point.	Enhancement	2.1.0.8
Redo the line stakeout function. Stakeout to the point on the line according to the interval and the offset.	Enhancement	
Added the report file function in detail point survey, turn on the function and the	Enhancement	

coordinate of every epoch will be saved into a .txt file.		
Added the display of L5 SNR.	Enhancement	
Added button to cancel the display of electronic bubble.	Enhancement	
Added the stakeout pointing arrow text description.	Enhancement	
Solved the crash problem when opening the Survey interface on some phones with higher display resolution.	Bug Fix	
The height value in the location share function is calculated to the coordinates of ground points according to the antenna settings in Nuwa.	Bug Fix	
Added Molodensky Badekas datum transform model.	Enhancement	
Added Singapore predifined coordinate system SVY21.	Enhancement	
Added Australia predifined coordinate system GDA2020.	Enhancement	2.1.0.6
Optimized the Survey interface, the survey button will change automatically and the survey configuration will change according to the selection of Survey Mode(Detail or Continous).	Enhancement	
Optimized the Survey Config interface, the HRMS limited value and VRMS limited value will change according to the Solution Limited.	Enhancement	
Display optimization of the Survey Config	Enhancement	

interface. The Config in the Survey and the Stakeout function module only displays relevant items; all configuration items are retained in the Survey Config.		
Adjusted the longitude and latitude coordinates display, put N, S, E, W after the number.	Enhancement	
Opened to use TCS through PDA Network in Oscar base configuration.	Enhancement	
Added the function of Oscar registration by Nuwa.	Enhancement	
Added the limit to 5 survey points when connecting to general instruments of NMEA mode.	Enhancement	
Corrected some translation errors in English language.	Bug Fix	
Solved the problem that sometimes the number of satellites used is larger than the number of visible satellites.	Bug Fix	
Solved the problem of software exception if click Device Info during NFC connection.	Bug Fix	
Solved the problem of Nuwa software crash when connecting Oscar via NFC, if Nuwa is not provided system permission.	Bug Fix	
Solved the problem in XML export that the solution state of all survey points are fixed.	Bug Fix	
Solved the problem when repeated using the baseshift, the value of Base shift and the actual coordinate shift are not the same.	Bug Fix	

Solved the problem that the survey points in the Survey interface may not be displayed when the Survey Style is Detail.	Bug Fix	
Solved the problem that the point cannot be selected to stakeout when importing NE points to the Stakeout point library.	Bug Fix	
Solved the problem of Nuwa crash for some android 9.0 models.	Bug Fix	
Adjusted the display of Tilt Angle quality, Tilt direction quality and Heading quality in tilt measurement.	Bug Fix	
Adjusted the algorithm for calculating the Distance to base, the incorrect result can be avoided by calculating according to the XYZ coordinate in the case of projection unselected.	Bug Fix	
Changed the tone frequency of stakeout prompt distance(long) from 5s to 2s at a time.	Bug Fix	
Fixed the crash when connecting devices using Android 9 caused by the API level change.	Bug Fix	
Fixed the problems that Nuwa is unable to obtain HTTP permissions using Android 9 caused by the API level change, including inablity to perform software automatic update and online map display.	Bug Fix	2.1.0.5
Added moving direction indicator arrow in stakeout interface.	Enhancement	
Added the circle display whose radius is equal to the prompt tone distance in stakeout	Enhancement	2.1.0.3

interface.		
The prompt tone in different grades in stakeout interface. When the surveyor is approaching to the point to stake out, Nuwa beeps every 5 seconds. When the surveyor arrives at the point to stake out, Nuwa beeps every 1 second.	Enhancement	
Added the XML format export which supports being imported to EZSurv to post process Stop&Go data.	Enhancement	
Adjusted DXF export, add height coordinate and height annotation. Distinguish layers according to different kinds of annotations and point feature property.	Enhancement	
Added GNSS Linework function. The survey line will be displayed in survey interface. The survey line allows operations such as delete point, insert point, and continue surveying.	Enhancement	
Change the API level to 28 and re-launch on Google Play.	Bug Fix	
Fixed the issue that the point coordinate saved to the Point database may be wrong in the case of the Base Shift.	Bug Fix	
Fixed incomplete import Stakeout Point selecting all from Survey Point.	Bug Fix	
Fixed the crash issue when turning on location share function for some android devices.	Bug Fix	
Tilt compensation function is available for Oscar Ultimate model.	Enhancement	2.0.1.6

Added elevation stakeout for point stakeout and line stakeout.	Enhancement	
Opened the TCP Client function for the receiver network.	Enhancement	
Solved the problem that conversion from NEh to BLH may be incorrect when there are seven parameters.	Bug Fix	
Solved the problem that selecting the coordinate system from the Coord System List is not effective when editing the project parameters.	Bug Fix	
Solved the crash problem caused by the name containing illegal characters when creating a new project.	Bug Fix	
After setting the latitude and longitude format to DD:MM.MMM, the number of decimal places is changed to 7 digits.	Bug Fix	
Solved the problem that the link and differential delay are not displayed on the survey interface when Oscar is set as the receiver network rover mode.	Bug Fix	
Solved the problem that the debug button in the device info interface sometimes is opened illegally when switching from connecting David to connecting Oscar.	Bug Fix	
Corrected the English expression of the altitude and geodetic height on the survey interface.	Bug Fix	
Corrected the English expression of long press	Bug Fix	

to cancel the Bluetooth match on the connection interface.		
The display of base point coordinates is changed to ground when base antenna height is obtained.	Enhancement	2.0.1.4
The display of north / east direction STD is added to the survey point attribute which is allowed to be exported.	Enhancement	
During the point survey process, it is allowed to stop the survey by pressing the stop button.	Enhancement	
Fixed the issue that after configuring David by Nuwa to stop the base mode, restarting David it still displays as Base.	Bug Fix	
Fixed the probabilistic crash issue of returning to the main interface after completing the point staking.	Bug Fix	
Open Oscar Reset function	Enhancement	2.0.1.2
The Collection End time of points in the point library will change with the software time zone setting	Enhancement	
The project list is arranged in reverse chronological order by edit time	Enhancement	
Fixed crash caused by choosing an empty coordinate system	Bug Fix	
Fixed the probabilistic crash in NFC connection	Bug Fix	
Fixed the probabilistic crash of setting Ntrip server after Oscar connection	Bug Fix	
Fixed failure of setting up TCPClient in connecting David	Bug Fix	

Solved the problem that modifying antenna parameters does not take effect after the survey of smooth points is completed	Bug Fix	
Solved the problem that Base points would not increase after reaching 9	Bug Fix	
Fixed HTML export crash when there are stakepoints	Bug Fix	
Solved the problem that the export Collection End time property has no hour, minute, or second, when the separator is a space in custom export	Bug Fix	
Solved the problem that the searched results for the point library based on time is empty	Bug Fix	
Fix the severe problem that modification of Ant Height is not effective in the Survey Config	Bug Fix	2.0.0.9
Supports new model Oscar	Enhancement	
Added display of base shift, datum transition, plane adjustment and height fitting in the interface of Satellite Info - Position	Enhancement	
For data import, it supports data preview before importing data	Enhancement	
For data export, it added HTML export	Enhancement	
Custom import and export format support editing, viewing and deleting	Enhancement	2.0.0.8
Added related tips in the Bluetooth pairing and device connection interface	Enhancement	
The base supports RTCM3.0 format	Enhancement	
The logic of Detailed Point acquisition is modified to pop up confirmation dialogue after	Enhancement	

the acquisition is completed		
Added threshold distance setting for stakeout tone	Enhancement	
In the survey configuration - Display configuration interface, added the check box of displaying all stake out points	Enhancement	
Solve the flashback problem of Nuwa in landscape orientation display	Bug Fix	
Unify NEh coordinates and RMS data, retain 4 decimal places	Bug Fix	
Solve the application crash caused by the special registration date in the Demo Key	Bug Fix	
Solve the problem of incomplete display of part of the Spanish interfaces	Bug Fix	
Solve the problem that the seven parameters and the correction parameters are not imported into the project parameters in the newly created project	Bug Fix	
Solve the problem of search failure according to time in point library search	Bug Fix	
Solve the problem that exporting the custom interface cannot slide	Bug Fix	
Solve the problem that in the survey interface the speed is not refreshed	Bug Fix	
Adjust default antenna	Bug Fix	
Added Japanese JGD2011 coordinate system	Enhancement	1.0.9.7
Optimized the stakeout prompt message	Enhancement	
Fixed the problem of wrong name for the Portugal coordinate system	Bug Fix	1.0.9.5

Fixed the problem of inaccurate acquisition time during the point collection	Bug Fix	
Optimized the SHP export coordinate format	Enhancement	
Optimized online upgrade information prompts	Enhancement	
Optimized Tools Offset Point calculation	Enhancement	
Optimized Tools Azimuth and Intersection Angle calculation	Enhancement	
Optimized OSM online map loading	Enhancement	
Optimized the seven parameters calculation	Enhancement	
Optimized Survey Config options	Enhancement	
Optimized the function of adding stakeout points and control points	Enhancement	
Added Ghana's predefined coordinate system	Enhancement	
Added Portuguese predefined coordinate system	Enhancement	1.0.8.0
Optimized static storage	Enhancement	
Optimized elevation fitting calculation	Enhancement	
Fixed elevation problems caused by geoid model during data inverse calculation	Bug Fix	
Fixed the flashback issue caused in certain situations	Bug Fix	
Optimize DXF export	Enhancement	
Fixed the problem that the default is the control point library when importing points for stakeout point library	Bug Fix	
Fixed the problem that the interface has no prompt when the stakeout point is approaching the stakeout point library	Bug Fix	

Support collecting points with physical collection button in TC20 controller	Enhancement	1.0.4.1
Support quick points collecting in 'point stakeout' and 'line stakeout' with physical collection button	Enhancement	
Add 'survey hotkey' in point survey configuration page	Enhancement	
Fix average collection problem if the solution can't meet the requirements	Bug Fix	
Change the display of coordinate axis in projection parameters as X->North Y->East	Enhancement	
Optimized the calculation of parameters and the secondary calculation process of point correction	Enhancement	1.0.3.3
Optimized the device connection experience	Enhancement	
Optimized the device registration experience	Enhancement	
Optimized antenna management	Enhancement	
In the survey configuration, the survey epoch is changed to be editable by users	Enhancement	
Added Oscar preview in Device Connection, so stay tuned!!	Enhancement	
Added support for common NMEA devices	Enhancement	1.0.3.2
Added the function of automatically zooming the scale when approaching the stakeout point during point stakeout/line stakeout	Enhancement	
Added multi-point selection function when importing stakeout points	Enhancement	
Solved the connection stability of NtripClient function under Spanish and other languages	Enhancement	

Added the functions of Device Debug and static mutual exclusion	Enhancement	
Fixed the display problem when NtripClient and TCPClient are connected	Bug Fix	
Modified the GNSS point coordinates displayed in the base shift as BLH	Enhancement	
Optimized static record Station ID setting function	Enhancement	
Fixed crash when switching languages in Spanish and other languages	Bug Fix	
Combined the mount point and rover configuration to solve the problem of the display of the mount point history data	Enhancement	
Fixed the problem that the collection time epoch does not take effect in the survey configuration	Bug Fix	
Fixed the problem of not displaying NEh coordinates when manually starting the base station	Bug Fix	
Fixed the problem that the base point cannot be selected in the base shift	Bug Fix	
Fix the stakeout point error on the map and coordinates error after the base shift	Bug Fix	
Fixed the error of multiple repetitive calculations in the base shift	Bug Fix	
Added support for north-south/east-west hemisphere	Enhancement	
Optimize continuous point survey by distance	Enhancement	1.0.2.9
Optimize continuous point survey by time	Enhancement	

Add the predefined coordinate systems of Malaysia and Romania	Enhancement	
Add the function of station-id setting during static measurement	Enhancement	
Add the function of Inner RTK control	Enhancement	
Add the function of importing projects	Enhancement	
Add preview function for predefined coordinate system	Enhancement	
Optimize the arrangement and display of countries or regions in the predefined coordinate systems	Enhancement	
Optimize the display of satellite quantity	Enhancement	
Optimize the display of antenna height interface	Enhancement	
'Connected' at the top of the main interface is changed to 'Connected'	Enhancement	
The position status of satellite interface for base station is changed to 'Base Manual' and 'Base Auto'	Enhancement	
Fix the problem of not displaying NEh coordinates when manually starting the base station	Bug Fix	
Add new projections: Cassini, Oblique Stereographic Alternative, Stereographic, and Transverse Cylindrical Equal Area	Enhancement	
Fix the problem of imported line files are not identified	Bug Fix	
Fix the problem of crashing when creating new projects and point survey under Spanish	Bug Fix	

language		Tersus GNSS Inc.
Optimize database upgrade	Enhancement	
Add predefined coordinate system	Enhancement	1.0.2.8
Modify the satellite quantity display as 'satellite tracked / satellite used'	Bug Fix	
Optimize the export format of dxf file	Enhancement	
Fix the problem that the elevation increases when manually starting the base station	Bug Fix	
Optimize base shift experience	Enhancement	
Change shp/dxf export coordinates to local coordinates	Enhancement	
Fix the problem that satellites on the Sat Tab interface has always shown true	Bug Fix	
Add differential data format display when using Ntrip to obtain source list	Enhancement	
Optimize system stability	Enhancement	
System compatibility is improved, compatible with upgrades on older software	Enhancement	
Fixed the problem that the antenna height disappeared in the device connection interface after reloading the software	Bug Fix	1.0.2.6
Fixed the problem of the invalidity of static survey after canceling auto-start	Bug Fix	
Fixed the problem of the Ntrip Client set up failure for the rover	Bug Fix	
Fixed the problem of the antenna height configuration failure for the rover	Bug Fix	
Optimize the software automatic update experience	Enhancement	

Optimize the device connections	Enhancement	
Optimize continuous acquisition by time	Enhancement	
Add Geoid Model: (1) support EGM96 and EGM08 at the same time; (2) optimize data loading and reduce waiting time for different devices; (3) simplify algorithm calculation process and save system resources	Enhancement	
Add UTM projection support for the southern hemisphere	Enhancement	
Optimize the rules for point acquisition automatic naming	Enhancement	
Optimize the base shift function: (1) support multiple times of base shift; (2) support real-time modification of the shift parameters; (3) reorganize the base shift logic; (4) redesign the base shift UI	Enhancement	
Optimize the solution state of the data export, which is the same as the board definition	Enhancement	
Optimize the display of the antenna height when manual-starting the base station	Enhancement	
Repair of other problems	Enhancement	
Antenna height display optimization	Enhancement	1.0.2.4
Survey configuration: display configuration optimization	Enhancement	
Re-enter static storage, status optimization	Enhancement	
Static storage antenna optimization when self-starting the base station	Enhancement	
Line stakeout 'distance' distinguishes between positive and negative	Enhancement	

Add column name for coordinate export	Enhancement	
Remove the 'Acquisition Status' of the 'Text Acquisition' interface	Enhancement	
'Smoothing' and 'Acquisition' are combined	Enhancement	
Ntrip site management: IP address display is incomplete	Bug Fix	
Click base/rover configuration without changing order	Enhancement	
Support for name modification of base/rover configuration User-defined name can be changed, the system default name cannot be changed	Enhancement	
Add reminder when creating a new project	Enhancement	
Change the logic of antenna type choosing, the antenna type must be choosing before connection	Enhancement	1.0.2.3
Change the default antenna height as pole height in surveying, change the default antenna height as slant height in static surveying	Enhancement	
Support choosing file type in import file	Enhancement	
Add GPS mock location	Enhancement	
Fixed the error of configuration when build a new project	Bug Fix	
Optimized the interface freeze if there are too many points in point survey interface	Enhancement	
Optimized the display of export interface	Enhancement	
Optimized the display of the result in two point intersection	Enhancement	

Optimized the display of title bar	Enhancement	
Optimized the option logic in import interface	Enhancement	
Change the voice output frequency in point stakeout	Enhancement	
Add RTCM1230 message in base model	Enhancement	
Fixed software crashed when sharing project	Bug Fix	
Optimized the logic to register David	Enhancement	
Optimized the device connection	Enhancement	
Support auto start static mode	Enhancement	
Add xyz apporoximate in rinex file	Enhancement	
Optimized the speed to log in CORS.	Enhancement	
Add point name and code in dxf format	Enhancement	1.0.2.2
Fix the abnormity H value if the antenna slant height is zero	Bug Fix	
Change the 'Projection' to 'CRS'	Enhancement	
Change the threshold value in collect points by distance	Enhancement	
Optimized auto collect function by distance	Enhancement	1.0.2.1
Optimized software access authority (it need location information authority at the same time when using Bluetooth if your android version is higher than Android 6.0)	Enhancement	
Optimized auto update function	Enhancement	
Optimized the display of system language	Enhancement	
Optimized many default value	Enhancement	
Optimized the pop-up message when getting the first fixed solution	Enhancement	
Optimized the language of pop-up messages	Enhancement	
Fixed the display error in height fitting title	Bug Fix	1.0.2.0

panel		
Default to open update auto test function	Enhancement	
Fixed software crash due to the display of decimal point in some language	Bug Fix	
Optimized the display of project information	Enhancement	
Fixed the bug that the QR code can't refresh when project parameters changed	Bug Fix	
Fixed the title can't be changed with system language changed	Bug Fix	
Fixed numeric keypad have no decimal point problem in some cellphone	Bug Fix	
Fixed the unusual local coordinate value under some ellipsoid	Bug Fix	