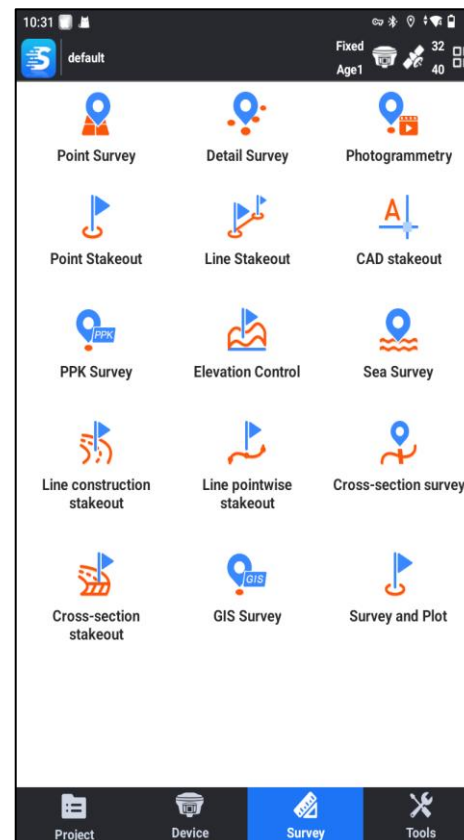
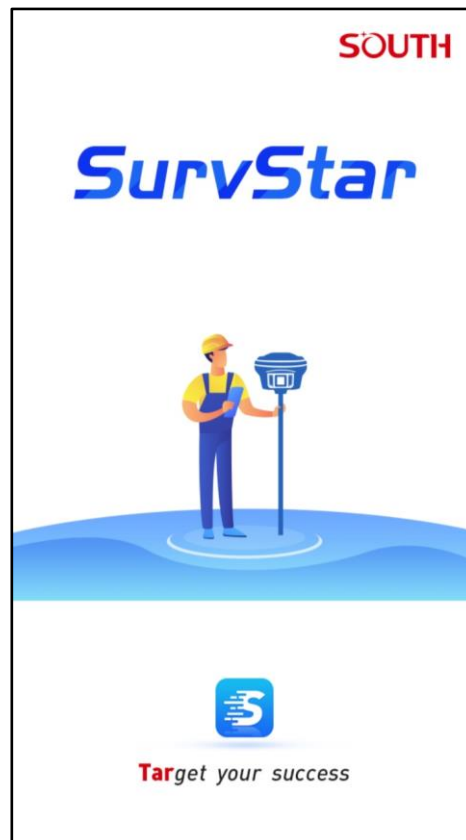


SurvStar: SOUTH Measurement App keeps continuous **EVOLUTION**



Photogrammetry

AR Live view Stakeout

Survey and Plot

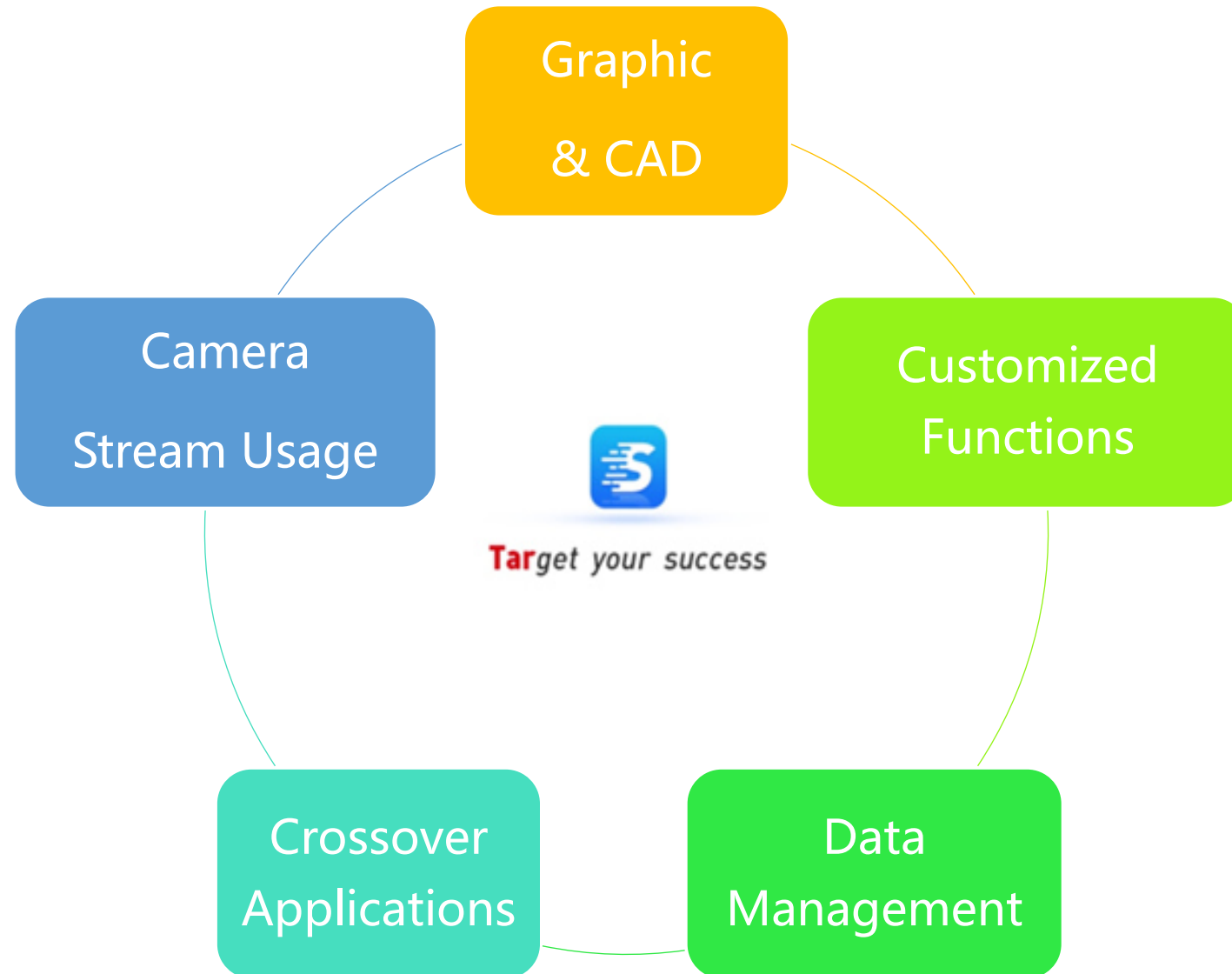
CAD Draw

GIS Survey

Sea Survey

Total Station Data Transfer

Five Sectors of Improvements for SurvStar in 2023

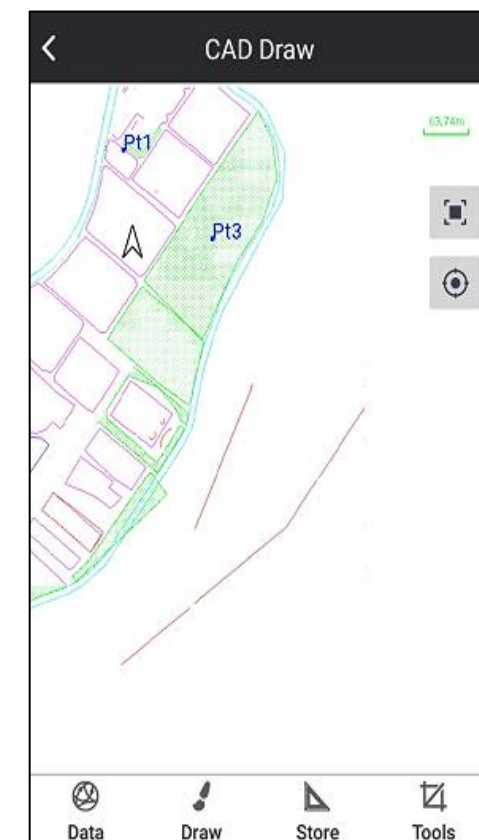
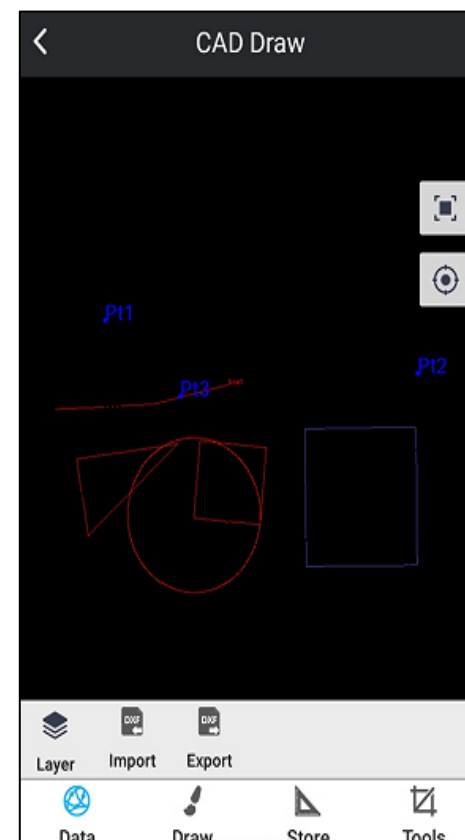
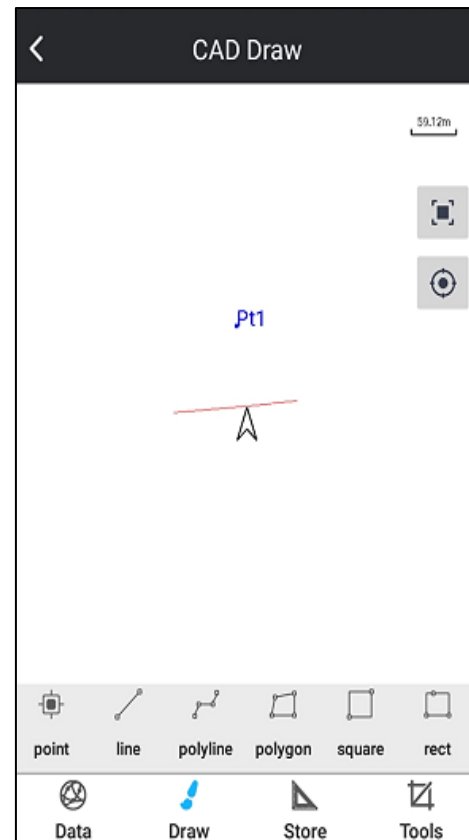
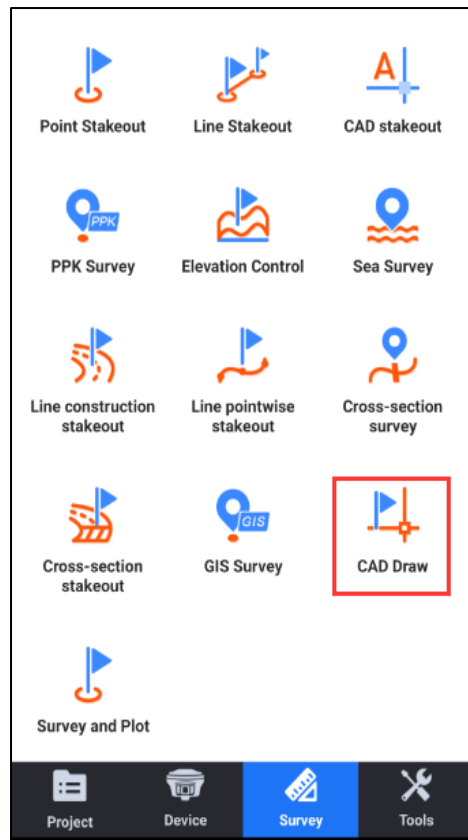


Five Sectors of Improvements for SurvStar in 2023

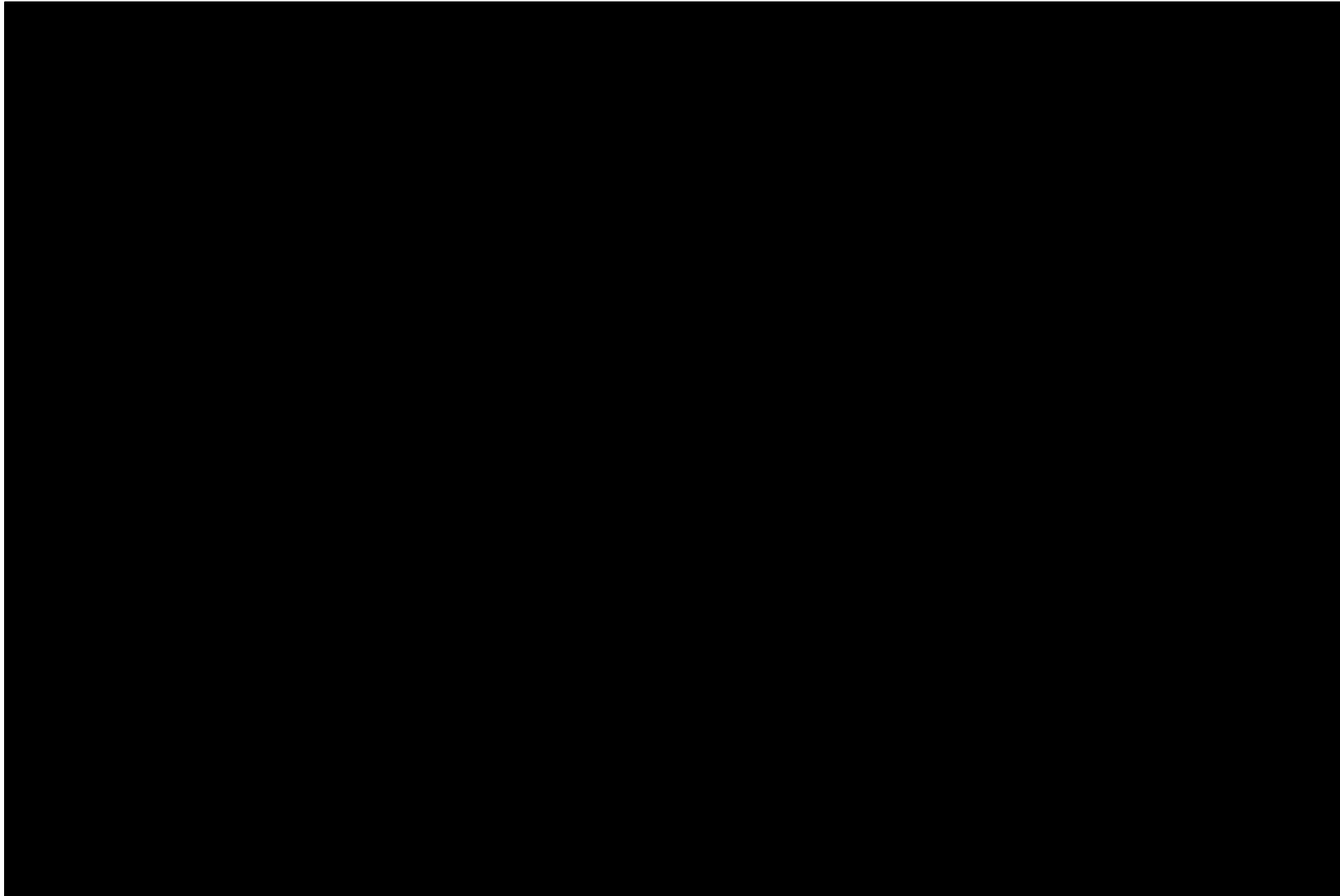
Graphic & CAD	Camera Stream Usage	Crossover Applications	Data Management	Customized Functions
CAD Draw	Photogrammetry	GIS Survey	Multi-Format Export	Cutting Area
Survey and Plot	AR Point Stakeout	Sea Survey	Data Back-up	WMS
CAD Stakeout	AR Line Stakeout	Total Station	STH Download	PPK RTK Check
	AR CAD Stakeout		Rinex Transformation	Coordinate System

Graphic&CAD-CAD Draw-Draw CAD Anywhere Any Time

- CAD functions in hand, surveyors can process dxf/dwg in field.

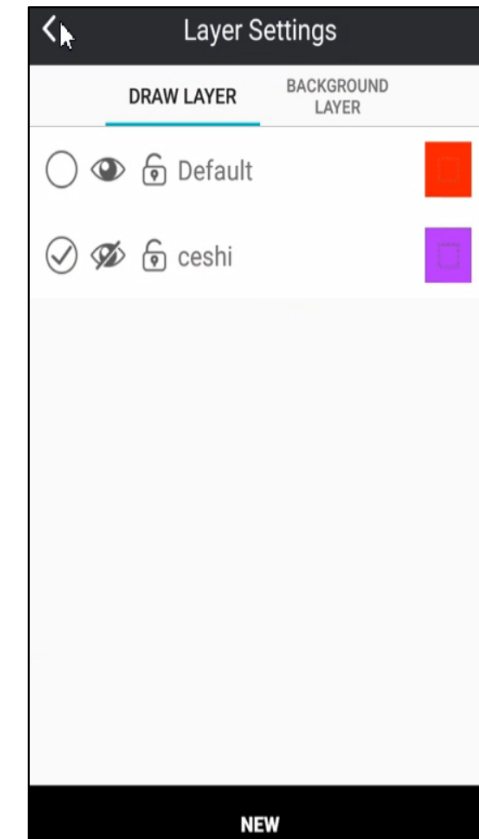
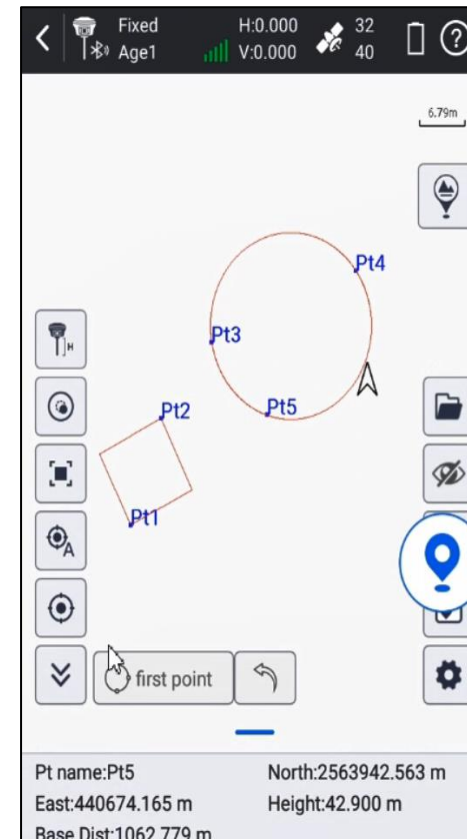
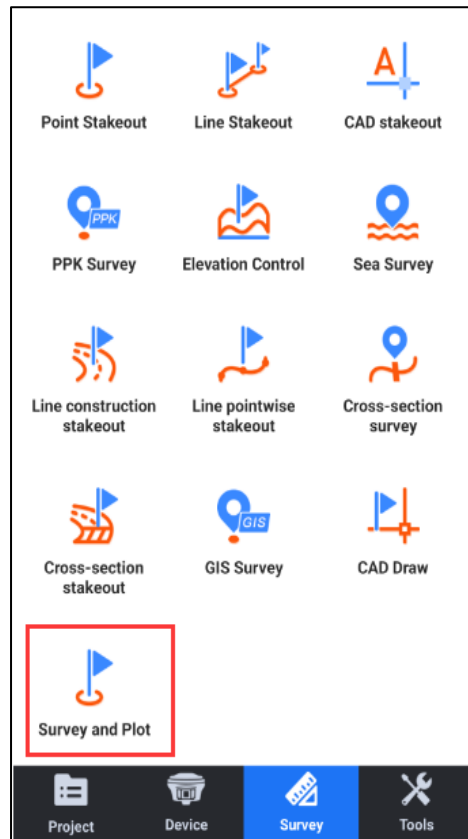


Graphic&CAD-CAD Draw-Draw CAD Anywhere Any Time (Video)

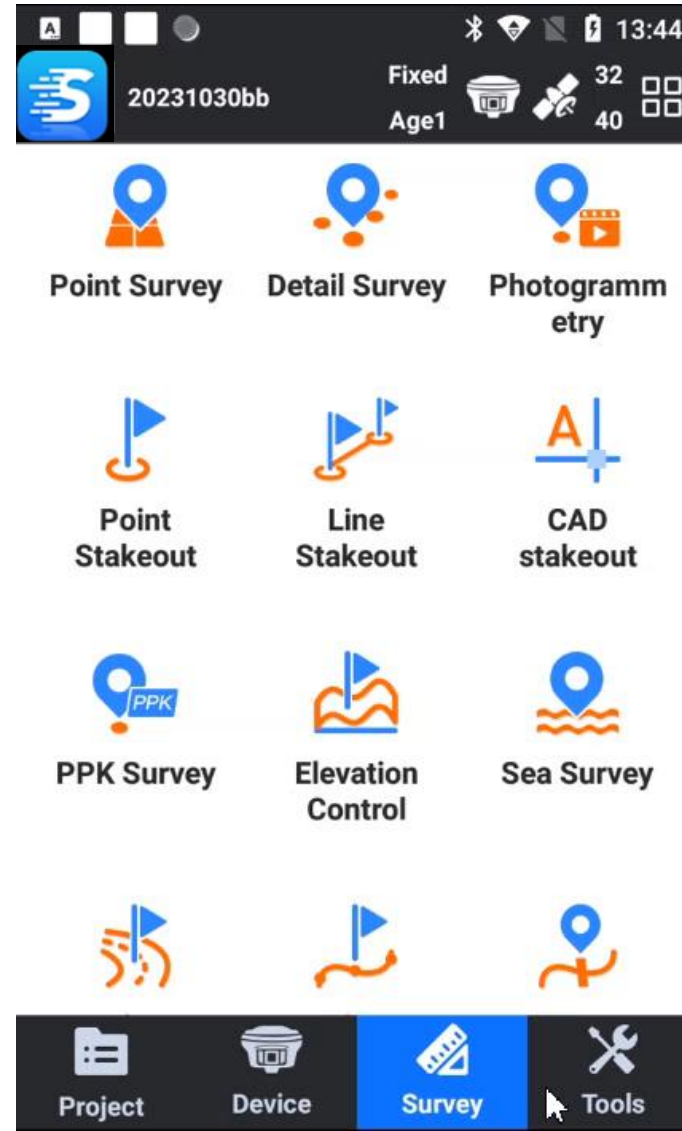


Graphic&CAD-Survey and Plot-Makes Survey Easier

- Surveyors can collect coordinates and draw the targets at the same time, **no need to draw sketch on paper.**

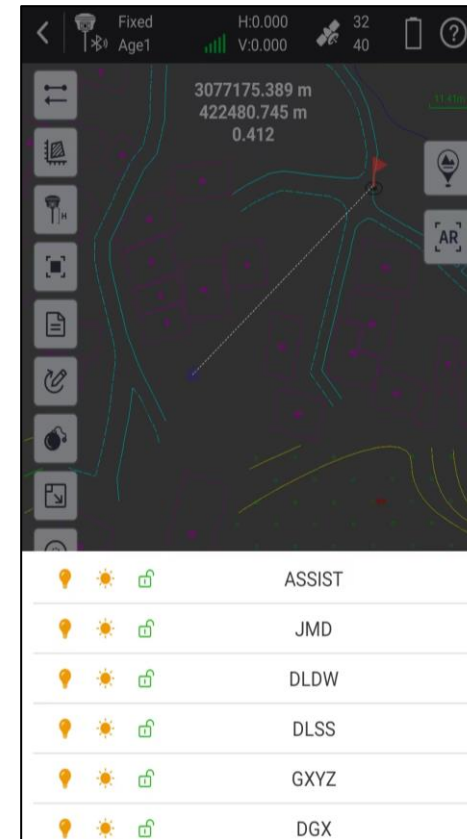
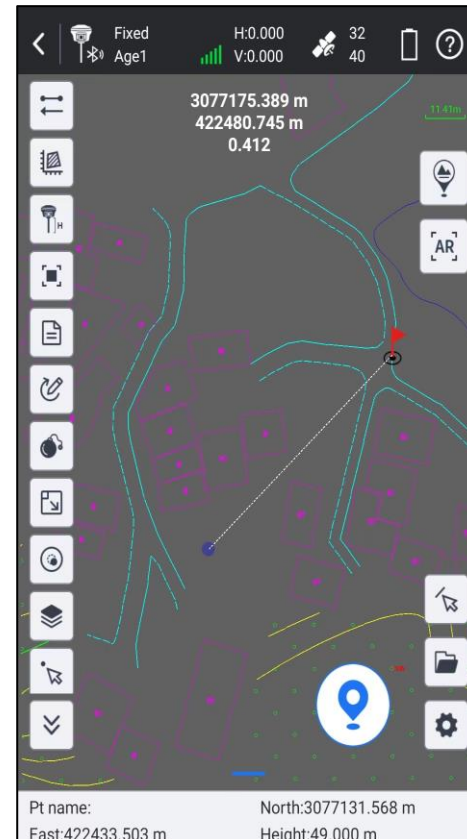
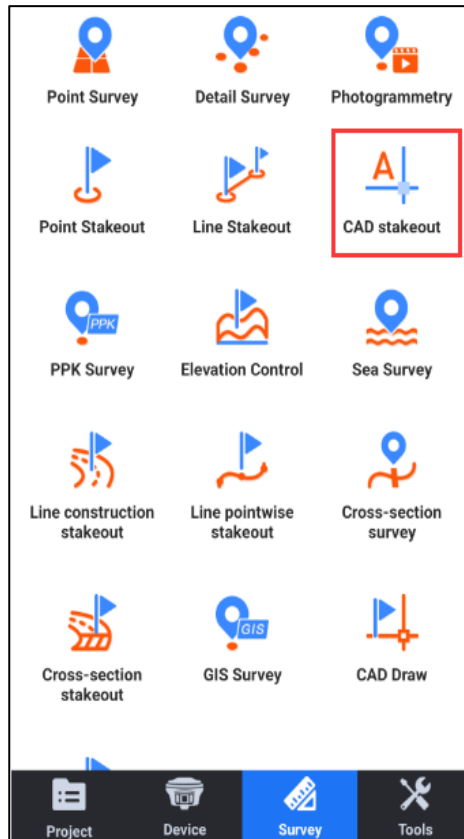


Graphic&CAD-Survey and Plot-Makes Survey Easier (Video)



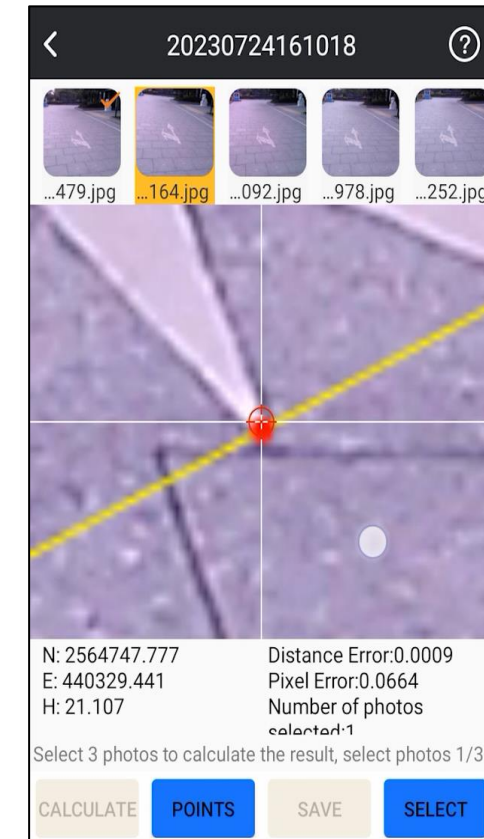
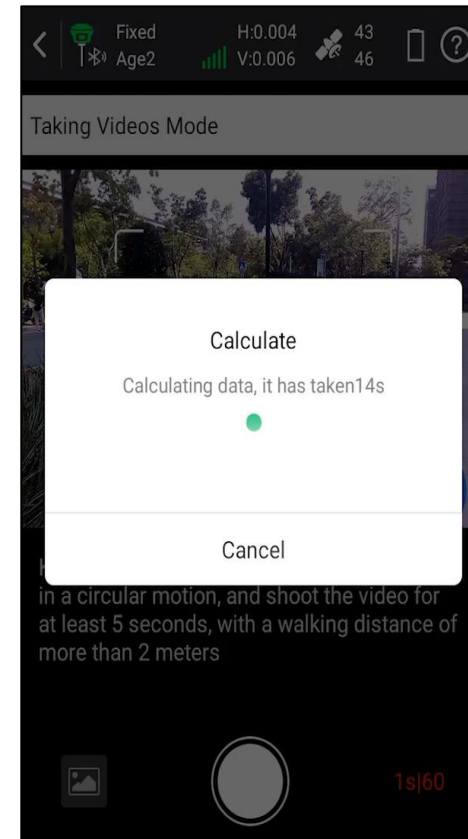
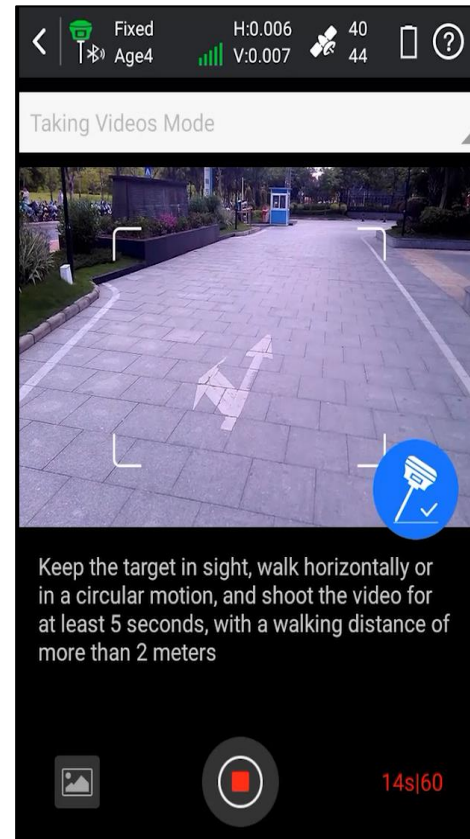
Graphic&CAD-CAD Stakeout-Improve efficiency

- Stakeout on loaded CAD file directly, **no need to convert CAD to targets 'coordinates.**

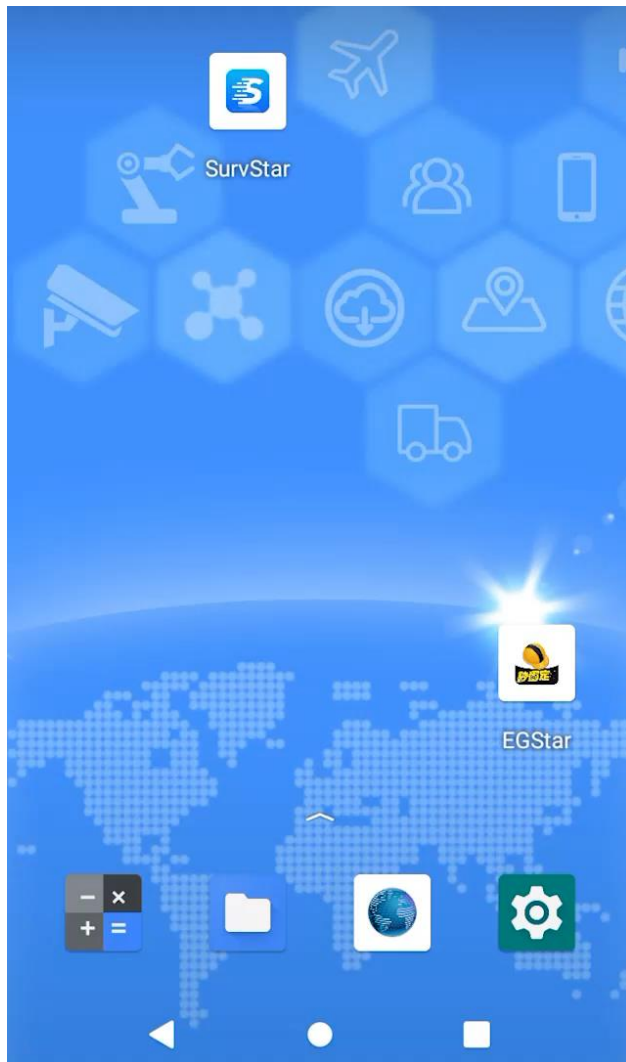


Camera Stream Usage-**Photogrammetry**-Makes Work Faster and Safer

- By taking photos or videos and processing, customers can survey areas **where cannot be reached, cannot get fixed, or too dangerous.**



Camera Stream Usage-**Photogrammetry**-Makes Work Faster and Safer (**video**)



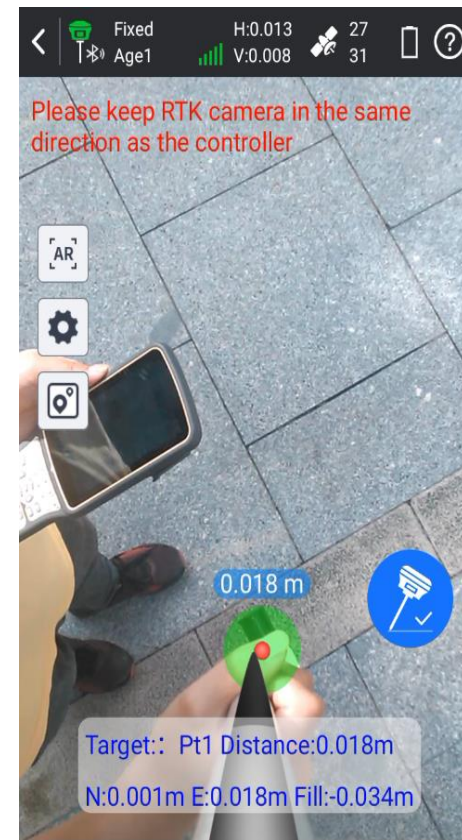
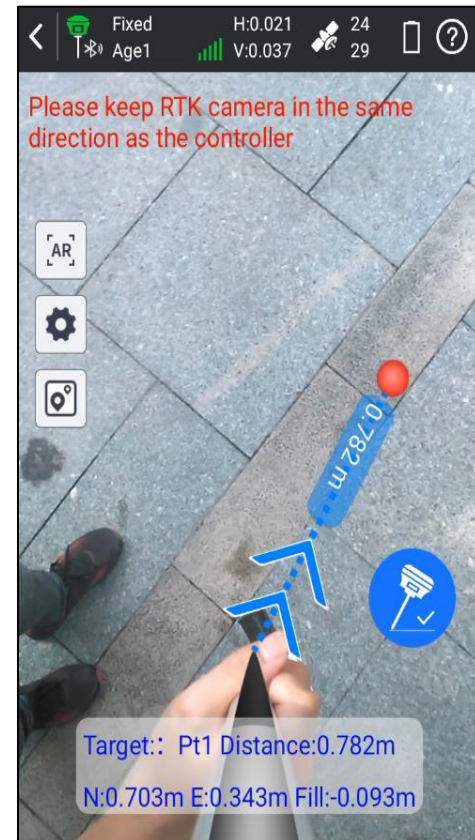
Camera Stream Usage-**Photogrammetry**-Makes Work Faster and Safer

- Photos can also be used for **3D modeling and complement** for UAV aerial survey.



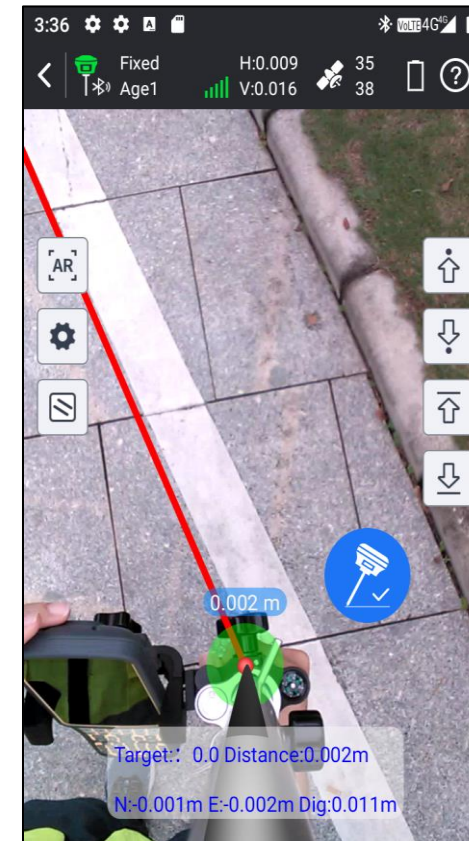
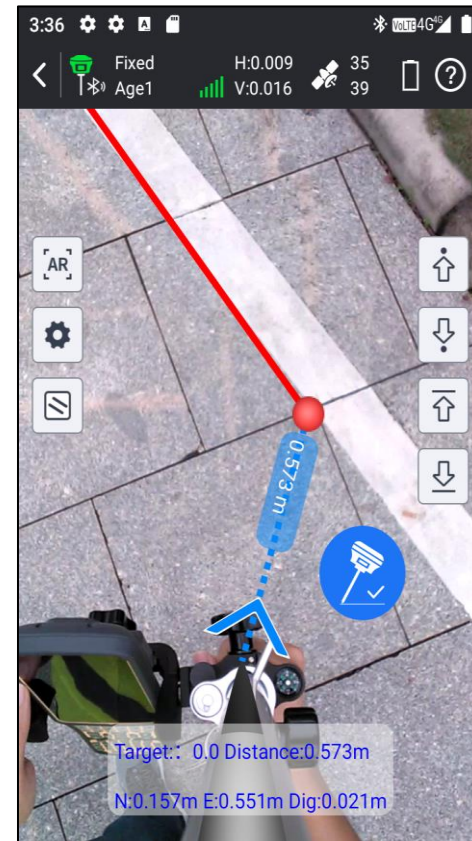
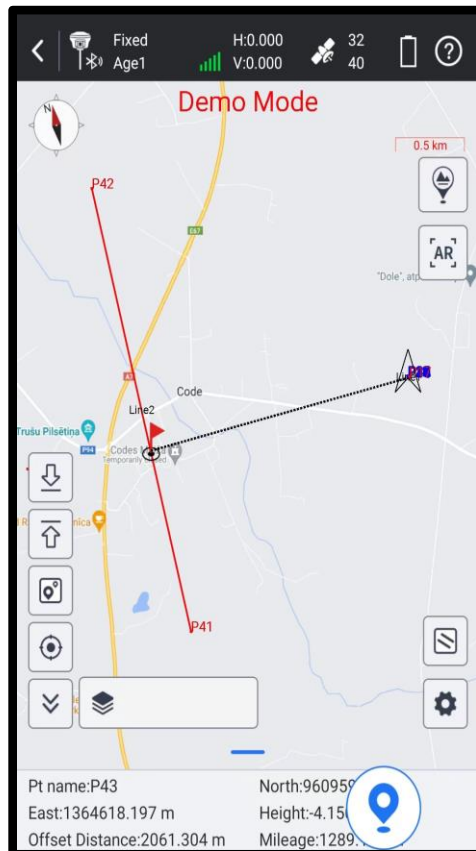
Camera Stream Usage-AR Point Stakeout-Easier to find target, improve efficiency

- One button to enable AR stakeout and use **live view stream** from bottom camera of receiver.



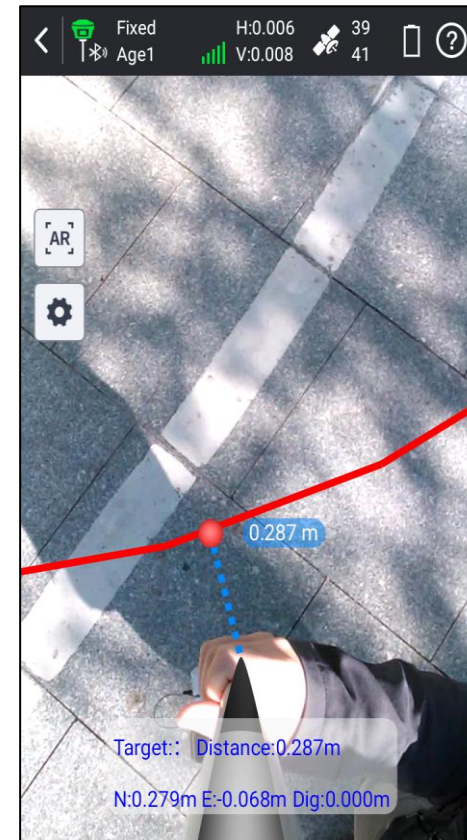
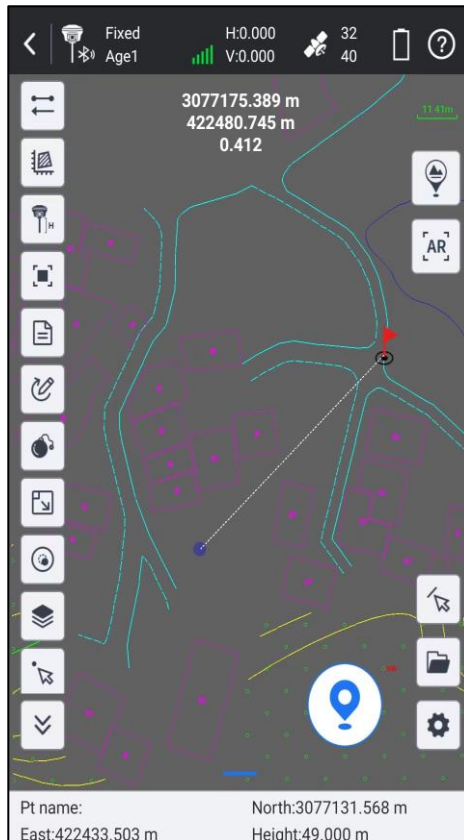
Camera Stream Usage-AR Line Stakeout-Easier to find target, improve efficiency

- One button to enable AR stakeout and use **live view stream** from bottom camera of receiver.

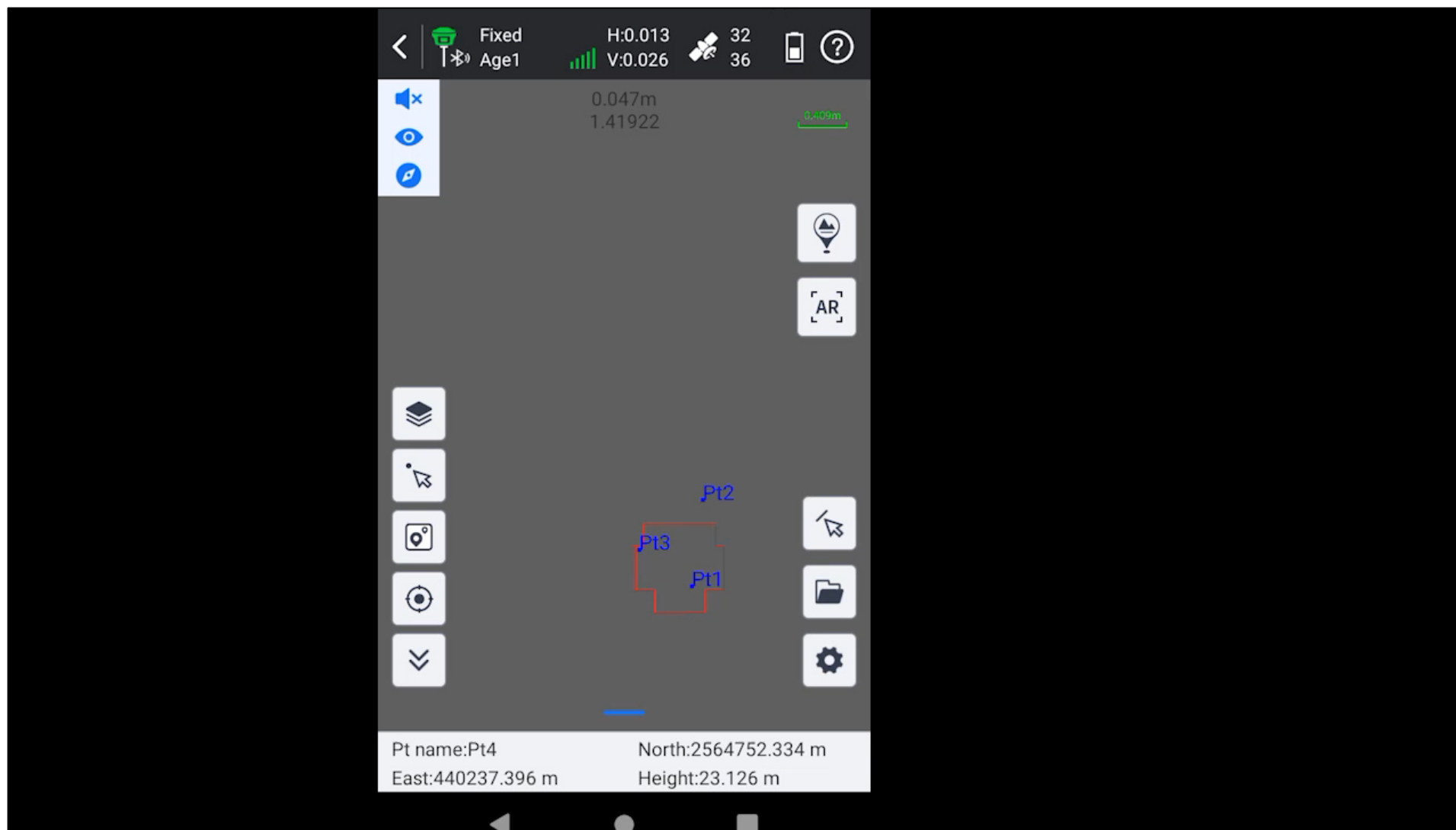


Camera Stream Usage-AR CAD Stakeout-Easier to find target, improve efficiency

- One button to enable AR stakeout and use **live view stream** from bottom camera of receiver.

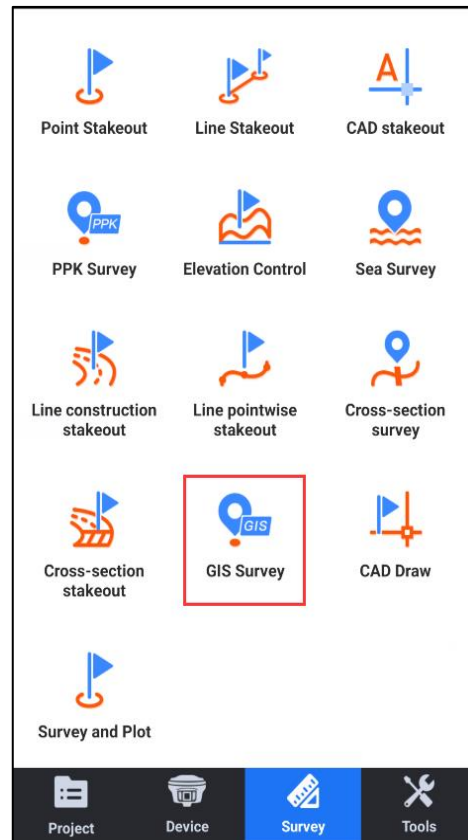


Camera Stream Usage-AR Stakeout-Easier to find target, improve efficiency (video)



Crossover Applications-**GIS Survey**-More scenarios help save money

- Crossover with **Tablet** for GIS Survey.



Feature manager

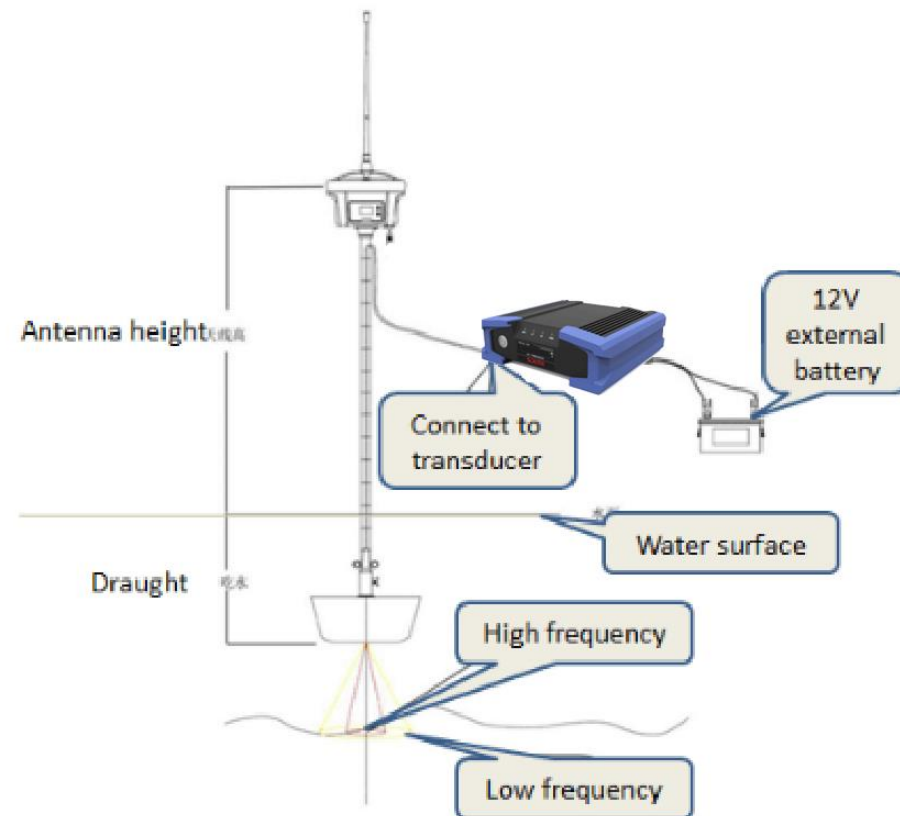
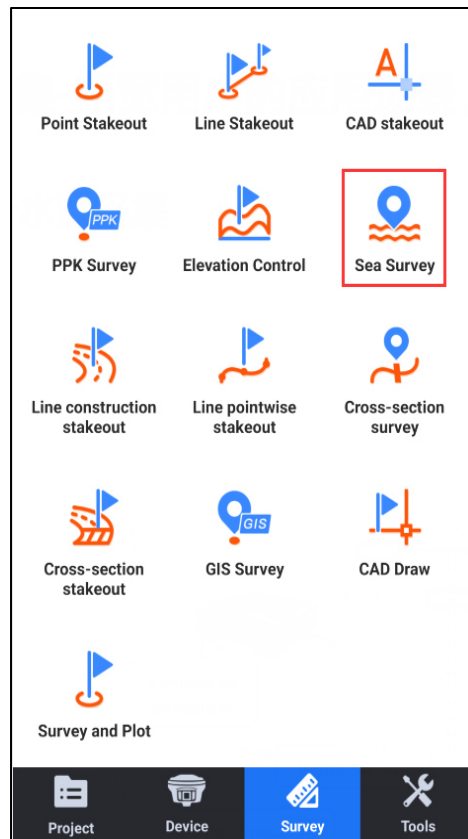
Total 3 Page 1/1

Name	Attrs. num.	Count
tree	2	14
grass	2	4
area	2	2



Crossover Applications-**Sea Survey**-More scenarios help save money

- Crossover with **Echosounder** for Sea Survey. (BT connecting to RTK and WIFI connecting to Echosounder)

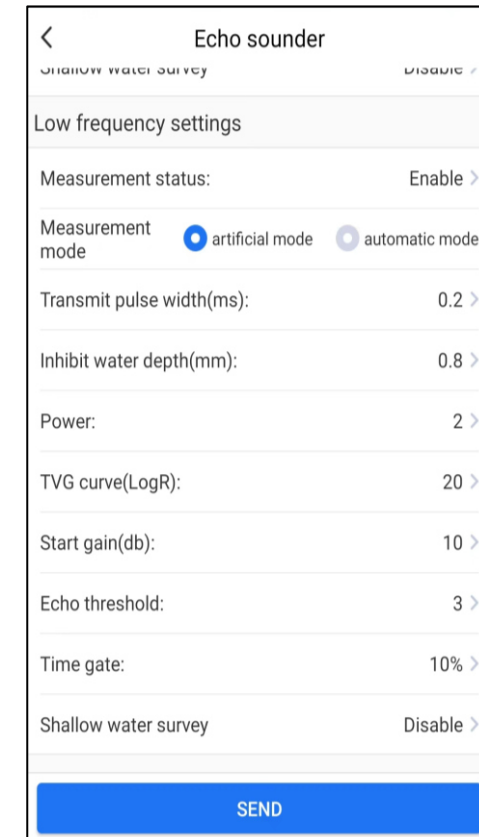
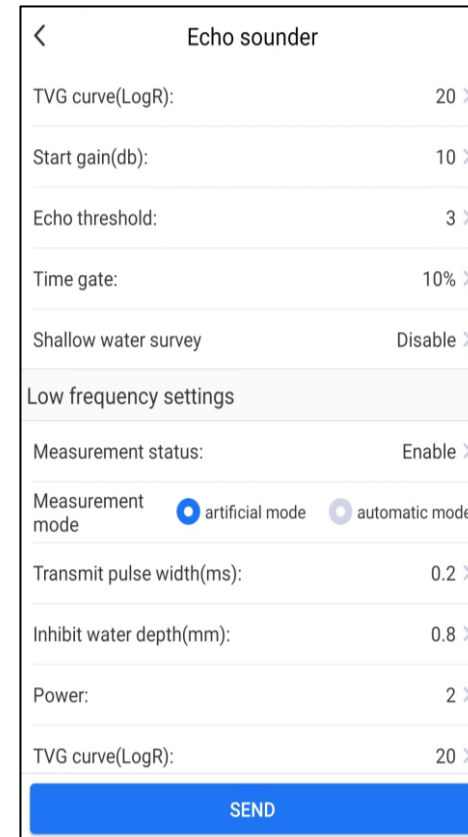
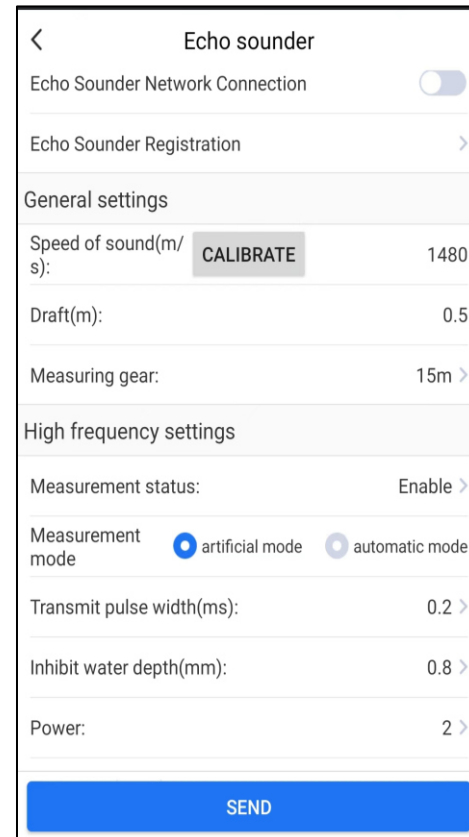
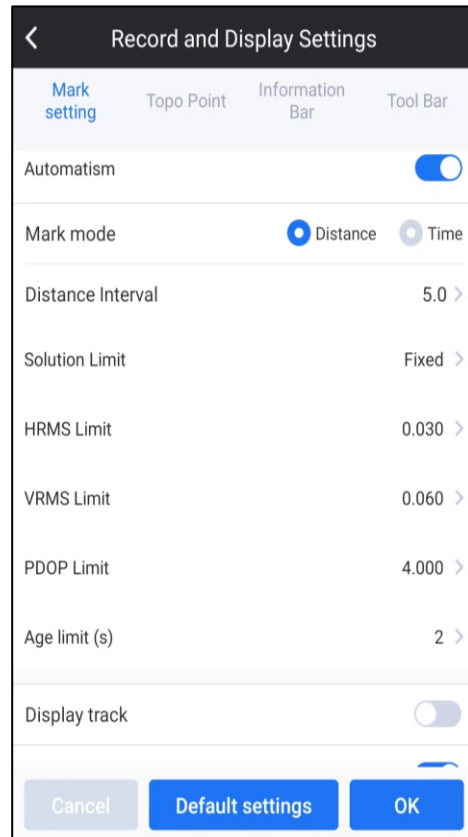


	A	B	C	D	E	F	G
1	Pt1	2544886.944	397473.9	41.94	Point name		
2	Pt2	2544887.027	397473.6132	41.94			
3	Pt3	2544886.939	397473.9361	41.94			
4	Pt4	2544886.945	397473.950	41.94	North		
5	Pt5	2544887.326	397473.6716	42.04			
6	Pt6	2544887.035	397473.5791	41.94			
7	Pt7	2544887.016	397473.6442	41.94	Easting		
8	Pt8	2544887.248	397473.8744	41.9			
9	Pt9	2544887.034	397473.5699	42.01			
10	Pt10	2544887.437	397473.7281	42.01	Water bottom elevation		
11	Pt11	2544887.122	397473.5904	41.91			
12	Pt12	2544887.097	397473.9827	42.01			
13	Pt13	2544887.249	397473.7502	41.91			
14	Pt14	2544887.415	397473.718	41.93			

Echosounder SDE-19S

Crossover Applications-Sea Survey-More scenarios help save money

- Echosounder Settings in survStar



Crossover Applications-**Total Station**-More scenarios help save money

- Crossover with **TS** for engineering survey.
- ❑ Current Status: **BT connection, acquire angle and distance values, transfer files;**
- ❑ Following Focus: **Set Station and Back sight, add survey program;**
- ❑ Final Goal: **TS and GPS seamless switching survey.**



Crossover Applications-**Total Station**-More scenarios help save money

- Total Station UI in survStar.

> 此电脑 > Pixel 3 > 内部共享存储空间 > SurvStar > Total station file > JOB1-20231116144219



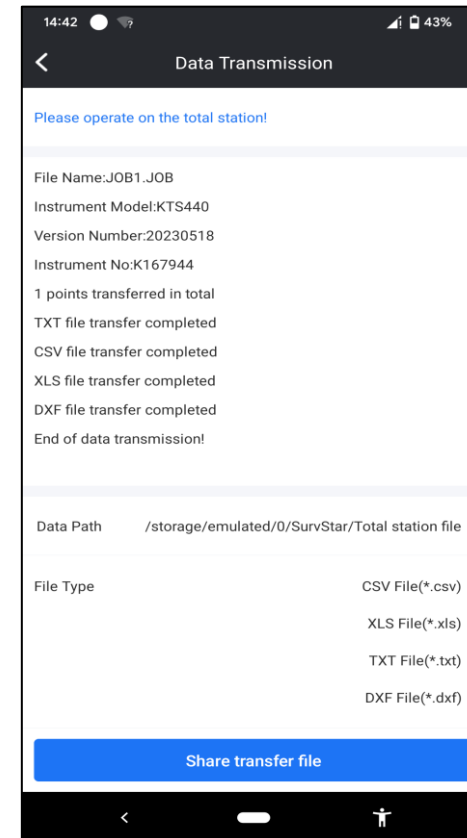
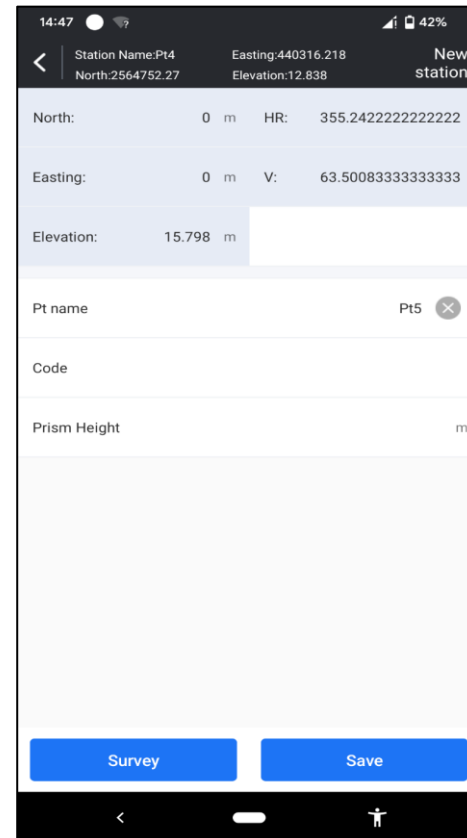
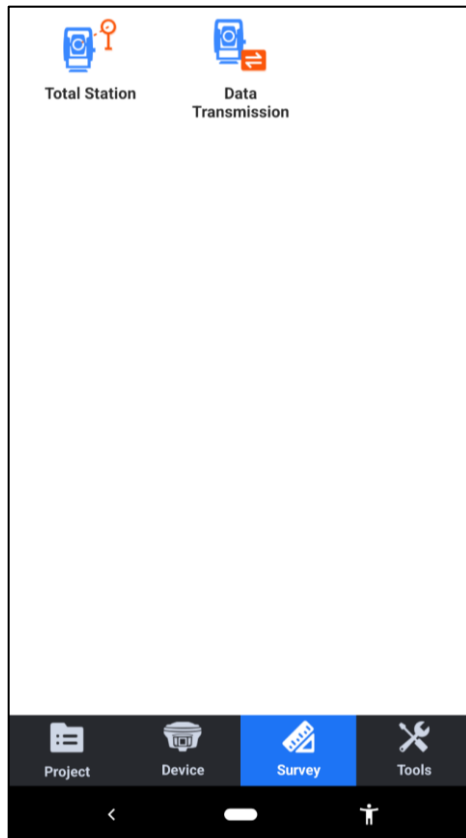
20231116144219
Microsoft Excel 逗号分隔值文件
22 字节



20231116144219
DXF 文件
25.0 KB



2023111614
文本文档
22 字节



Crossover Applications-**Total Station**-More scenarios help save money

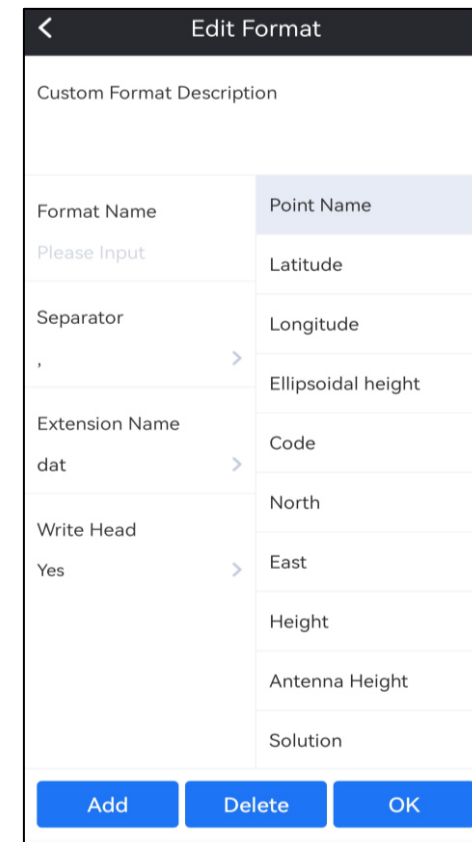
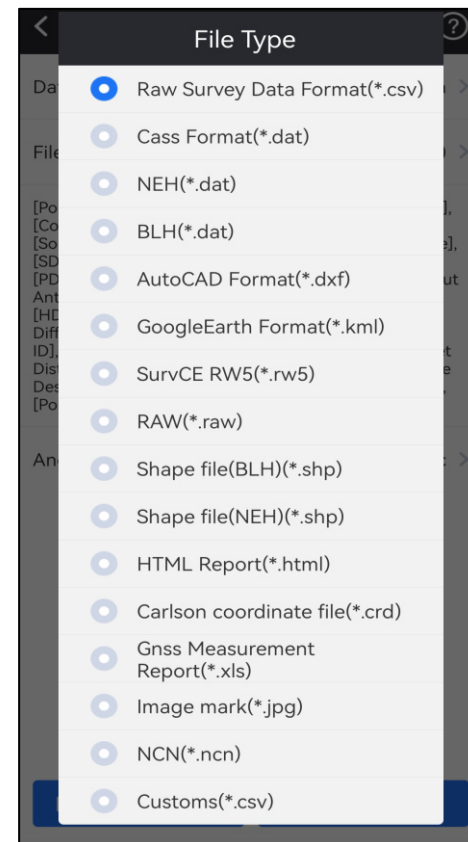
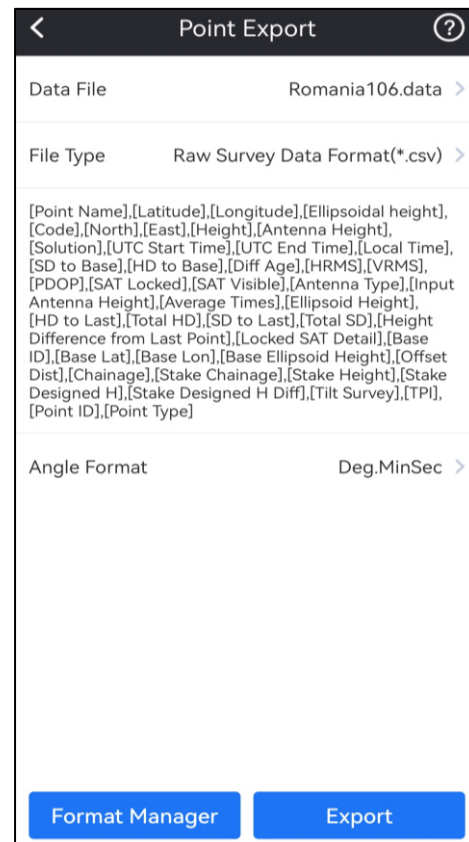
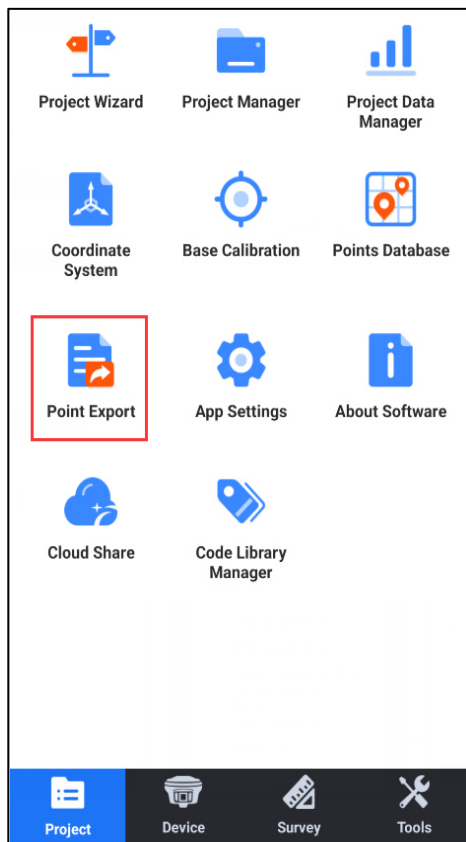
- Total Station UI in survStar.

The screenshots illustrate the following steps in the Total Station application:

- 已知点建站-后视点 (Known Point Station - Backsight):** The user sets up the station type as '已知点建站' (Known Point Station). Instrument height (仪器高) and target height (目标高) are both set to 0.000 m. The station type is selected as '后视点' (Backsight).
- 已知点建站-方位角 (Known Point Station - Azimuth):** The station type is '已知点建站'. The station type is selected as '方位角' (Azimuth). The angle (角度) is set to 000°00'00".
- 建站成功 (Station Setup Successful):** A confirmation message '建站成功' (Station Setup Successful) is displayed on the map. The station coordinates are: 北: 222214.1811m, 东: 1223334.1811m, 高程: 14.1811m, 高差: 4.1811m, 平距: 10.1811m, 斜距: 15.1811m.
- 点测量 (Point Measurement):** The user is in the '点测量' (Point Measurement) mode. The station coordinates are the same as in the previous steps. The target height is 0.0000 m.
- 点放样 (Point Layout):** The user is in the '点放样' (Point Layout) mode. The horizontal angle is 1°08'52". The target height is 0.0000 m. The target coordinates are: 北坐标: 111212.1234 m, 东坐标: 111212.1234 m, 高程: 0.0000 m.
- 点放样 (Point Layout):** The user is in the '点放样' (Point Layout) mode. The target point is labeled '放样点: PT1'. The target coordinates are: 北坐标: 111212.1234 m, 东坐标: 111212.1234 m, 高程: 0.0000 m.

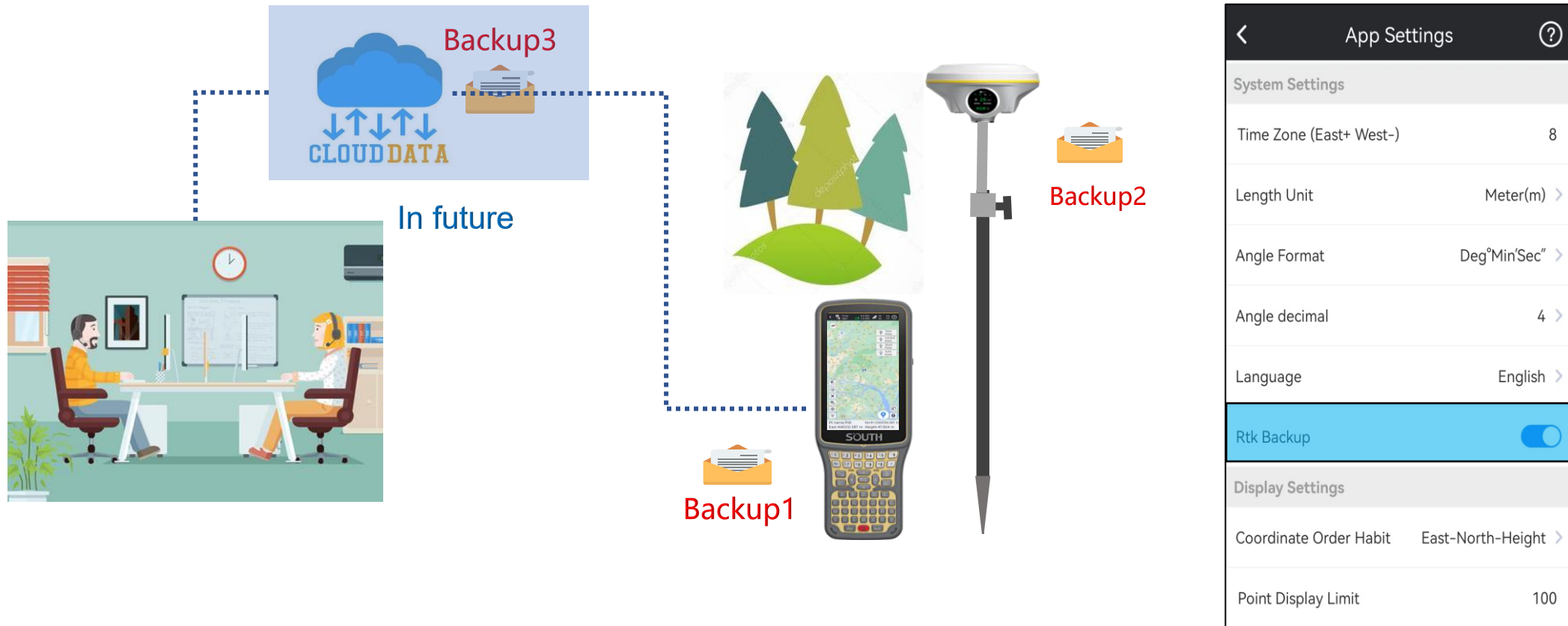
Data Management-**Multi-Format Export**-Take full advantage of Survey Result

- Common used formats and **customized format** export.



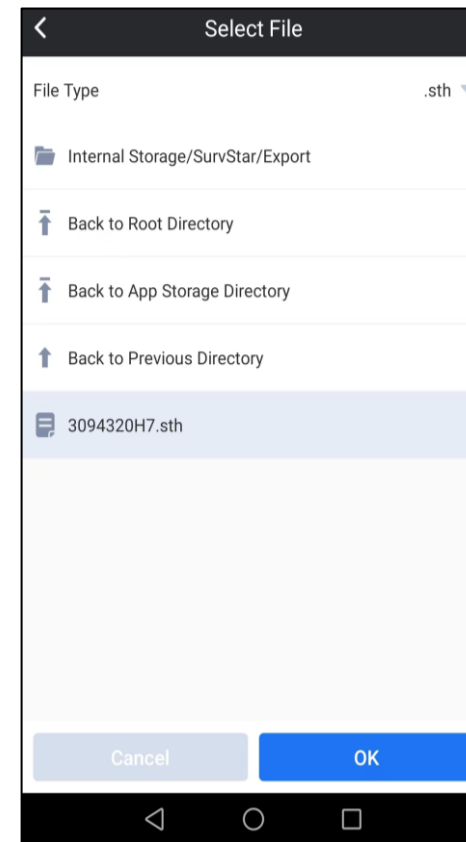
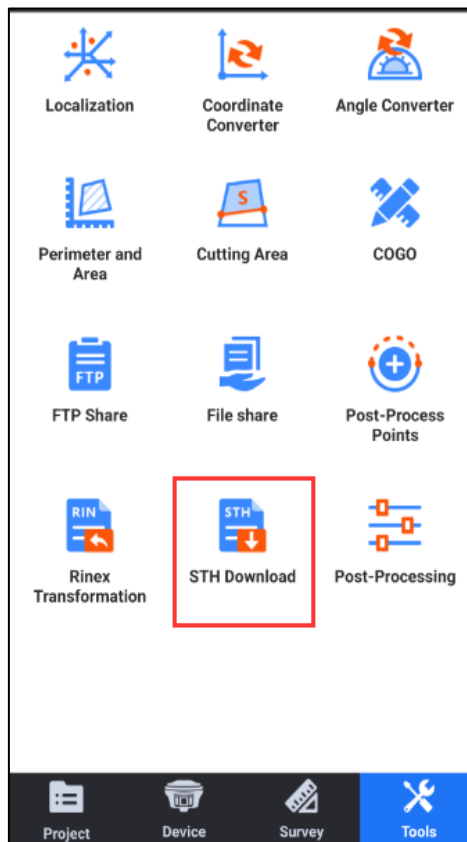
Data Management-Data Back-Up-Secure data and avoid loss

- After enabling RTK Backup, survey data in survStar will be **backed up in receiver internal memory.**



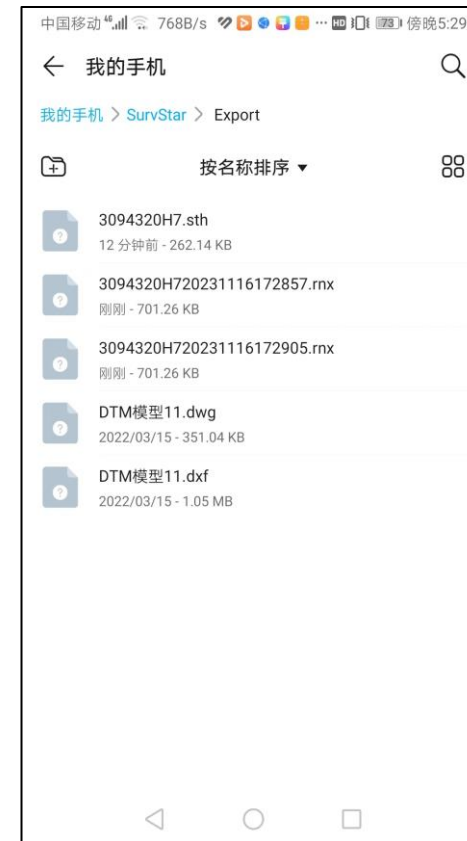
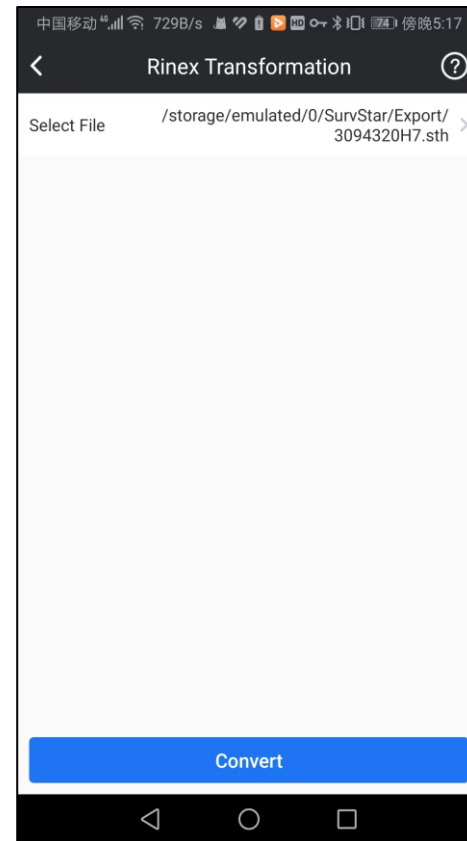
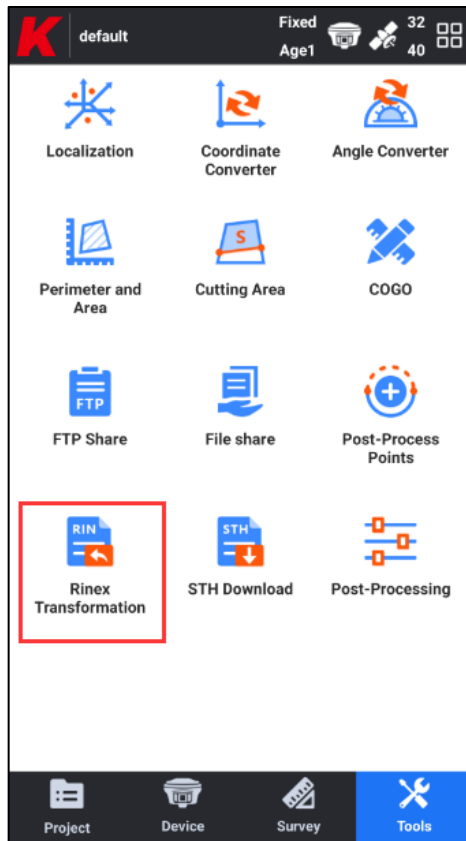
Data Management-**STH Download**-Easier to get static data, improve efficiency

- Users can get static data from receiver to survStar (receiver WIFI) and share the data, **no need to go back to data center to download.**



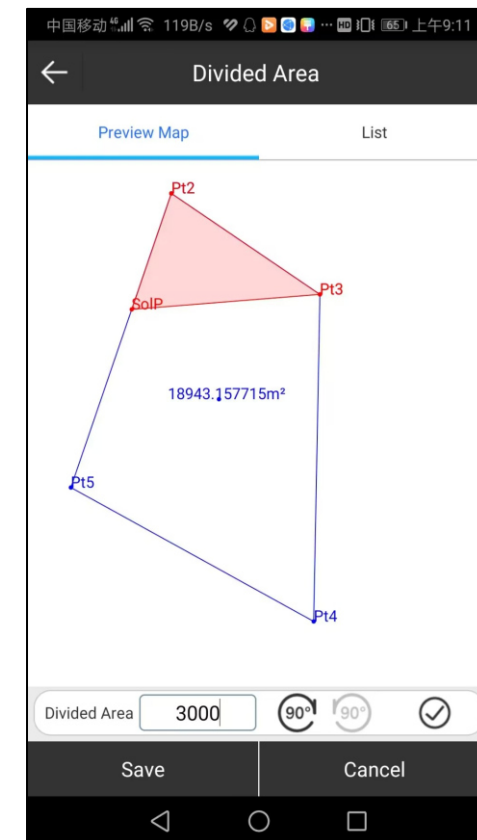
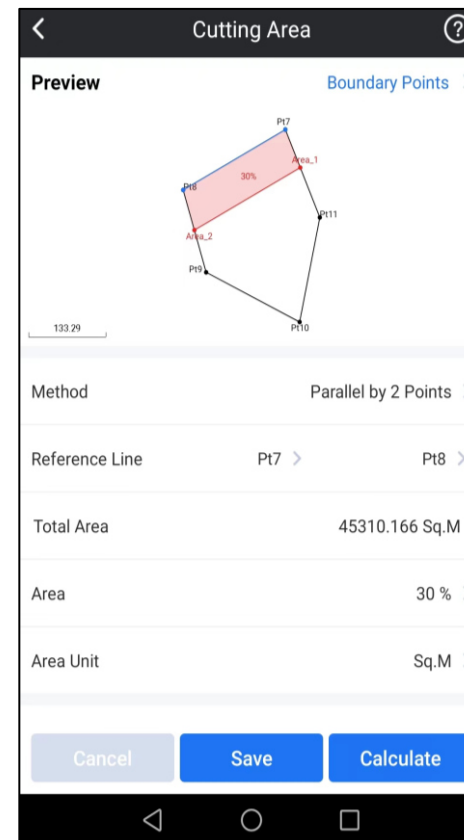
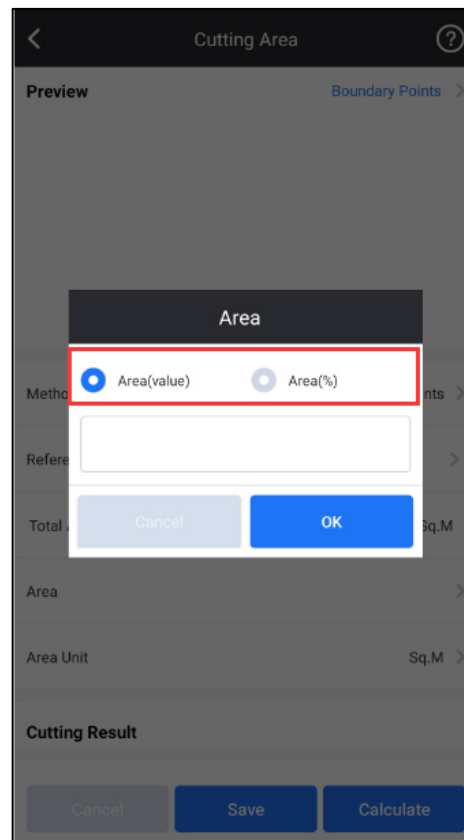
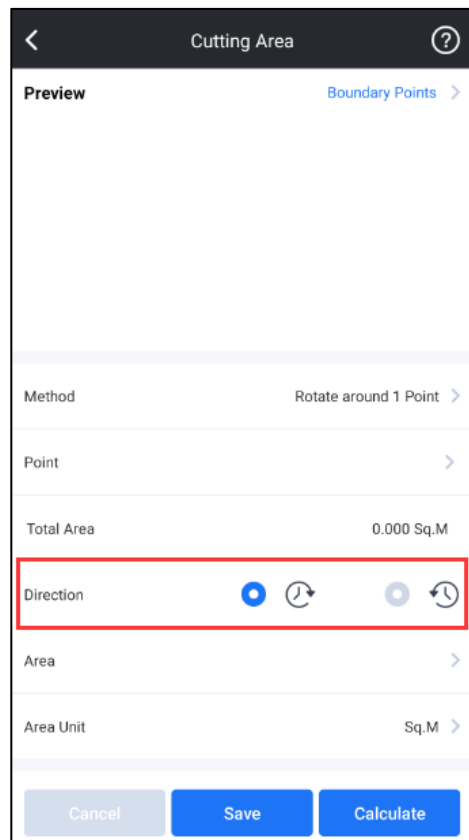
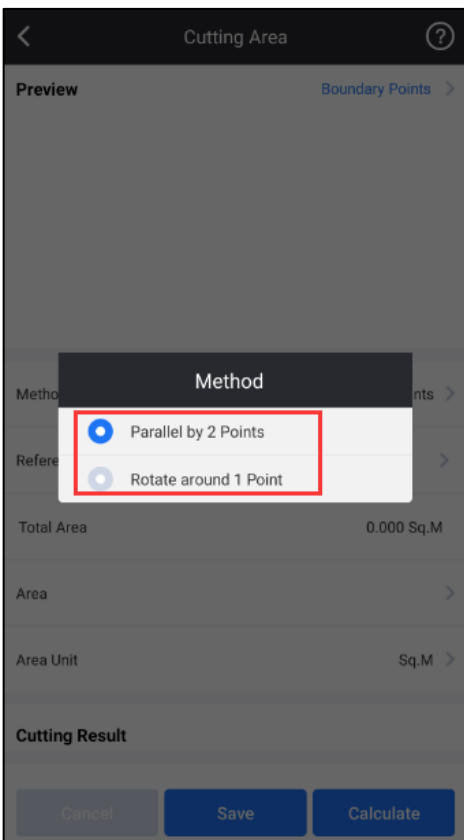
Data Management-**Rinex Transformation**-Easier to convert Rinex, improve efficiency

- Users can convert Rinex in field, **no need PC and SGO converting tool.**

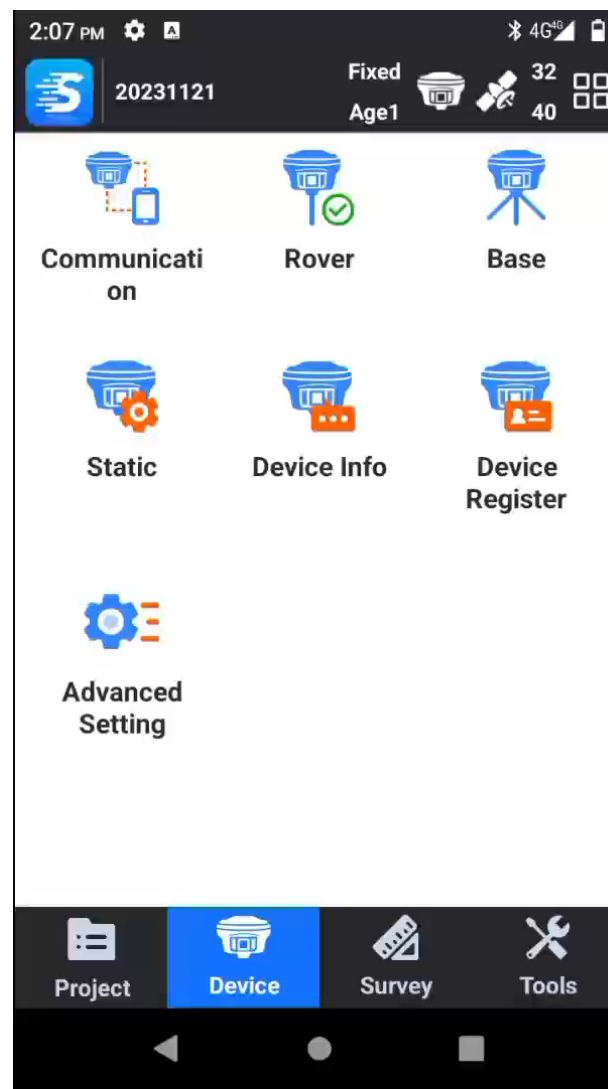


Customized Functions-Cutting Area (From African customer)-Makes Confirmation of land right easier

- Smart Calculation and Cutting makes job **easier**;
- **6** cutting ways VS **2** cuttings ways in survX, more **flexible**.



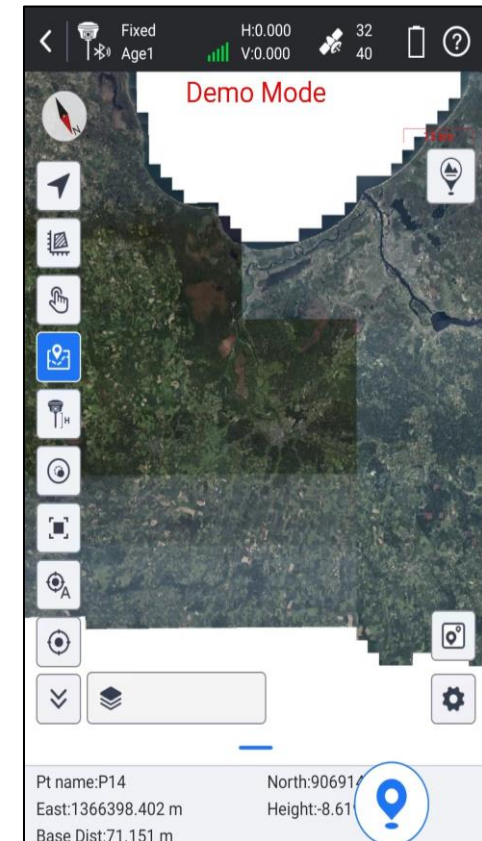
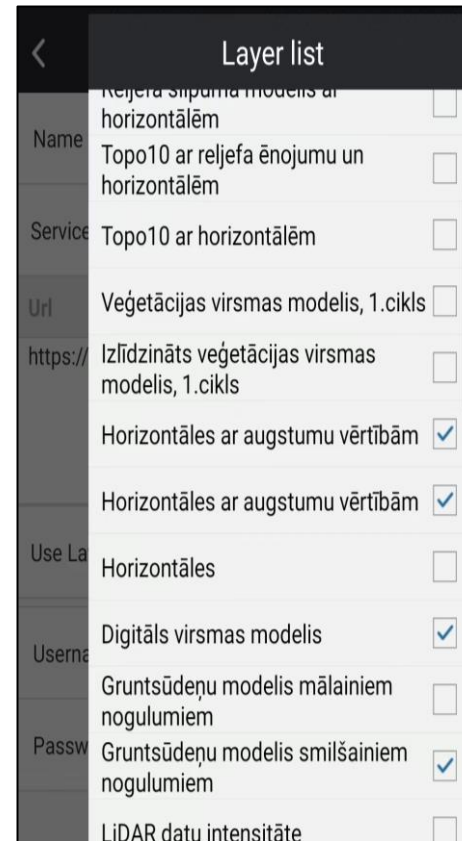
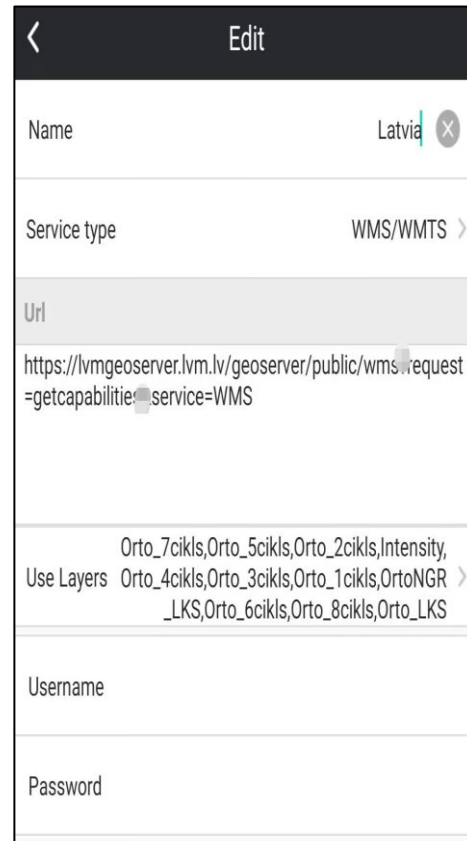
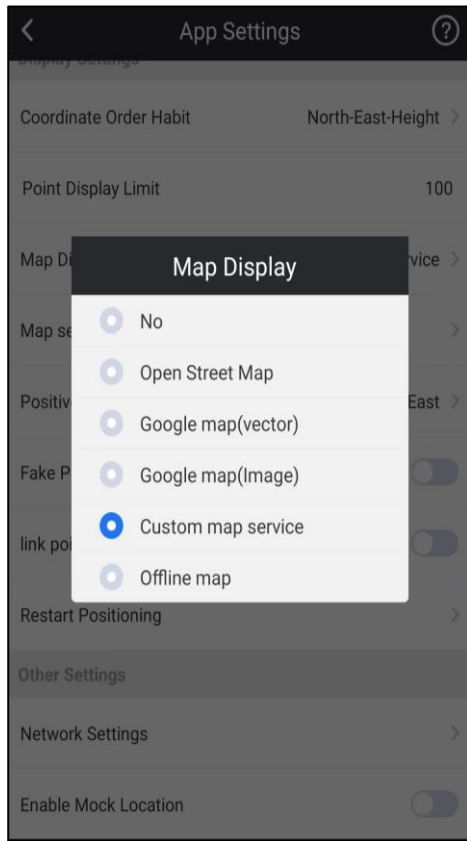
Customized Functions-**Cutting Area (From African customer)**-Makes Confirmation of land right easier **(video)**



Customized Functions-**WMS (From European customers)**

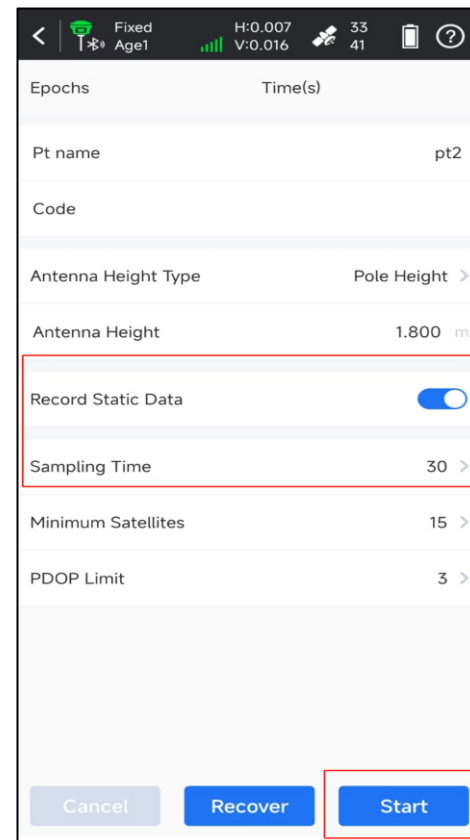
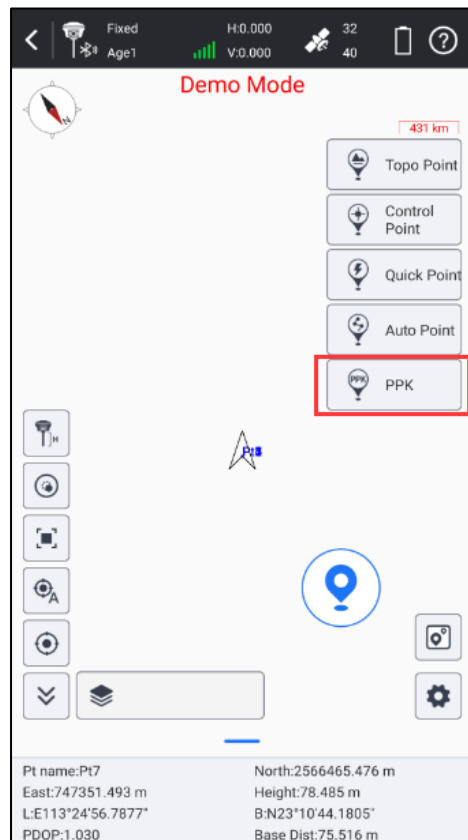
Always use the latest version map, ensure accuracy of survey

- Access to customer's server to get the map **he needs most.**



Customized Functions-PPK RTK Check (From Kolida\Ruide\Sanding brand customers)-Guarantee best accuracy

- Collect PPK and RTK in survStar, process and check in SGO, use the results with the best accuracy.



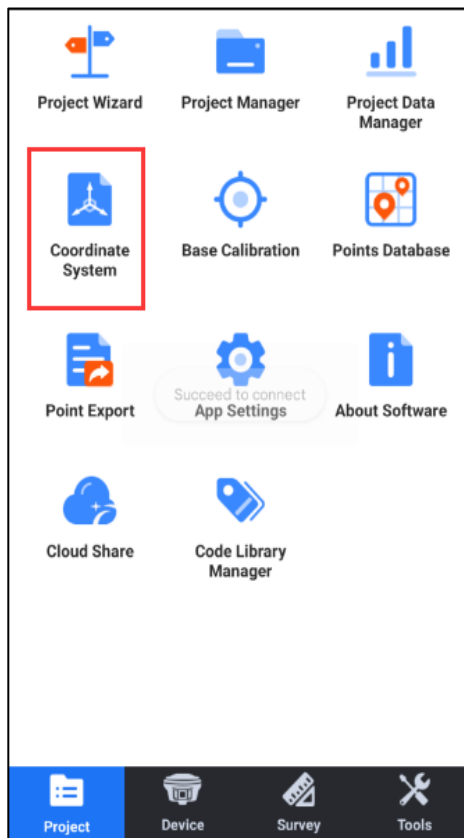
RTK Coordinates												
POINT	NORTH	EAST	ELEVATION	LAT	LONG	ELHEIGHT	HRMS	VRMS	RMS	PDOP	STATUS	
pt1	2568155.646	133180.389	13.439	23 10 54.220	113 25 02.761	13.439	0.005	0.012	0.013	1.333	Fixed	
pt2	2568151.447	133179.243	13.350	23 10 54.083	113 25 02.725	13.35	0.005	0.015	0.016	1.418	Fixed	
pt3	2568147.255	133178.082	13.279	23 10 53.946	113 25 02.688	13.279	0.005	0.015	0.016	1.41467	Fixed	
pt4	2568142.249	133176.674	13.276	23 10 53.782	113 25 02.643	13.276	0.005	0.015	0.016	1.554	Fixed	
pt5	2568137.668	133173.032	13.167	23 10 53.631	113 25 02.519	13.167	0.006	0.018	0.019	1.532	Fixed	
pt6	2568140.105	133170.788	13.125	23 10 53.708	113 25 02.438	13.125	0.006	0.017	0.018	1.631	Fixed	
pt7	2568144.599	133175.194	12.031	23 10 53.857	113 25 02.589	12.031	0.186	0.356	0.402	1.40433	Float	
pt8	2568153.828	133172.525	13.342	23 10 54.155	113 25 02.487	13.342	0.005	0.011	0.012	1.304	Fixed	
pt9	2568163.358	133177.041	13.566	23 10 54.468	113 25 02.637	13.566	0.006	0.013	0.014	1.23533	Fixed	
pt10	2568168.433	133179.151	13.595	23 10 54.634	113 25 02.707	13.595	0.005	0.011	0.012	1.32033	Fixed	

PPK Coordinates												
POINT	NORTH	EAST	ELEVATION	LAT	LONG	ELHEIGHT	HRMS	VRMS	RMS	PDOP	STATUS	
pt1	2568155.650	133180.376	13.421	23°10'54.21922°N	113°25'02.76206°E	13.421	0.002	0.003	0.003	0.961	Fixed	
pt2	2568151.445	133179.242	13.373	23°10'54.08182°N	113°25'02.72587°E	13.373	0.001	0.002	0.002	0.960	Fixed	
pt3	2568147.253	133178.082	13.272	23°10'53.94486°N	113°25'02.68877°E	13.272	0.001	0.002	0.003	0.960	Fixed	
pt4	2568142.253	133176.664	13.247	23°10'53.78145°N	113°25'02.64334°E	13.247	0.001	0.002	0.002	0.932	Fixed	
pt5	2568137.653	133173.007	13.177	23°10'53.62921°N	113°25'02.51892°E	13.177	0.002	0.004	0.004	0.932	Fixed	
pt6	2568140.119	133170.795	13.174	23°10'53.70749°N	113°25'02.43915°E	13.174	0.002	0.003	0.003	0.932	Fixed	
pt7	2568144.052	133173.710	13.224	23°10'53.83746°N	113°25'02.53807°E	13.224	0.002	0.003	0.004	1.002	Fixed	
pt8	2568153.835	133172.512	13.319	23°10'54.15403°N	113°25'02.48756°E	13.319	0.001	0.002	0.003	0.969	Fixed	
pt9	2568163.356	133177.033	13.565	23°10'54.46664°N	113°25'02.63804°E	13.565	0.002	0.003	0.003	0.969	Fixed	
pt10	2568168.431	133179.140	13.599	23°10'54.63305°N	113°25'02.70760°E	13.599	0.001	0.002	0.003	0.969	Fixed	

RTK Check												
POINT	NORTH	EAST	ELEVATION	LAT	LONG	ELHEIGHT	HRMS	VRMS	RMS	PDOP	METHOD	
pt1	2568155.650	133180.376	13.421	23°10'54.21922°N	113°25'02.76206°E	13.421	0.002	0.003	0.003	0.961	PPK	
pt2	2568151.445	133179.242	13.373	23°10'54.08182°N	113°25'02.72587°E	13.373	0.001	0.002	0.002	0.960	PPK	
pt3	2568147.253	133178.082	13.272	23°10'53.94486°N	113°25'02.68877°E	13.272	0.001	0.002	0.003	0.960	PPK	
pt4	2568142.253	133176.664	13.247	23°10'53.78145°N	113°25'02.64334°E	13.247	0.002	0.002	0.002	0.932	PPK	
pt5	2568137.653	133173.007	13.177	23°10'53.62921°N	113°25'02.51892°E	13.177	0.002	0.004	0.004	0.932	PPK	
pt6	2568140.119	133170.795	13.174	23°10'53.70749°N	113°25'02.43915°E	13.174	0.002	0.003	0.003	0.932	PPK	
pt7	2568144.052	133173.710	13.224	23°10'53.83746°N	113°25'02.53807°E	13.224	0.002	0.003	0.004	1.002	PPK	
pt8	2568153.835	133172.512	13.319	23°10'54.15403°N	113°25'02.48756°E	13.319	0.001	0.002	0.003	0.969	PPK	
pt9	2568163.356	133177.033	13.565	23°10'54.46664°N	113°25'02.63804°E	13.565	0.002	0.003	0.003	0.969	PPK	
pt10	2568168.431	133179.140	13.599	23°10'54.63305°N	113°25'02.70760°E	13.599	0.001	0.002	0.003	0.969	PPK	

Customized Functions-Coordinate System (From Romania, Morocco, etc customers)-Improve efficiency and accuracy

- Predefined local coordinate system in survStar, no need to check and input parameters one by one.



Predefined

Country ROMANIA >

Search

No.	Coordinate System	Ellipsoid
1	Stereographic 1970 TransDatRo Source Code 1.04	GRS 1980
2	Stereographic 1930 TransDatRo Source Code 1.04	GRS 1980
3	Stereographic 1970 TransDatRo Source Code 1.05	GRS 1980
4	Stereographic 1930 TransDatRo Source Code 1.05	GRS 1980
5	Stereographic 1970 TransDatRo Source Code 1.06	GRS 1980
6	Stereographic 1930 TransDatRo Source Code 1.06	GRS 1980
7	DEALUL PISCULUI 1933/Stereo 33	International 1924
8	DEALUL PISCULUI 1970/Stereo 70	Krassowsky 1940

Predefined

Country MOROCCO >

Search

No.	Coordinate System	Ellipsoid
1	MERCHICH/Maroc zone 1	Clarke 1880 (IGN)
2	MERCHICH/Maroc zone 2	Clarke 1880 (IGN)
3	MERCHICH/Maroc zone 3	Clarke 1880 (IGN)
4	MERCHICH/Maroc zone 4	Clarke 1880 (IGN)


OK Details

Customized Functions-**Customer Satisfaction was and always will be our priority**

- Whenever you have some good ideas, helpful suggestions and new market requirements for survStar, Don' t hesitate to share with us.



New Features in Future (Continuous Evolution)

Better Compatibility- More possibility	One Button Operation- User Friendly	Signal Scan- Avoid hardwork in vain
Compatible with 3 rd party controller for Photogrammetry and AR Stakeout	One button to config receiver and get fixed solution	Scan radio interference under current radio channel
Total Station practical programs	One button to locate base map	Scan SIM card network strength
Compatible with 3 rd party app	One button to enable Ionosphere Algorithm	
Controller offline process Photogrammetry data	One button to switch WIFI AP\Client mode	
Mark Points during Visual Positioning	One button to record data log files for R&D to analyze	

Thank you