Digitalcurve

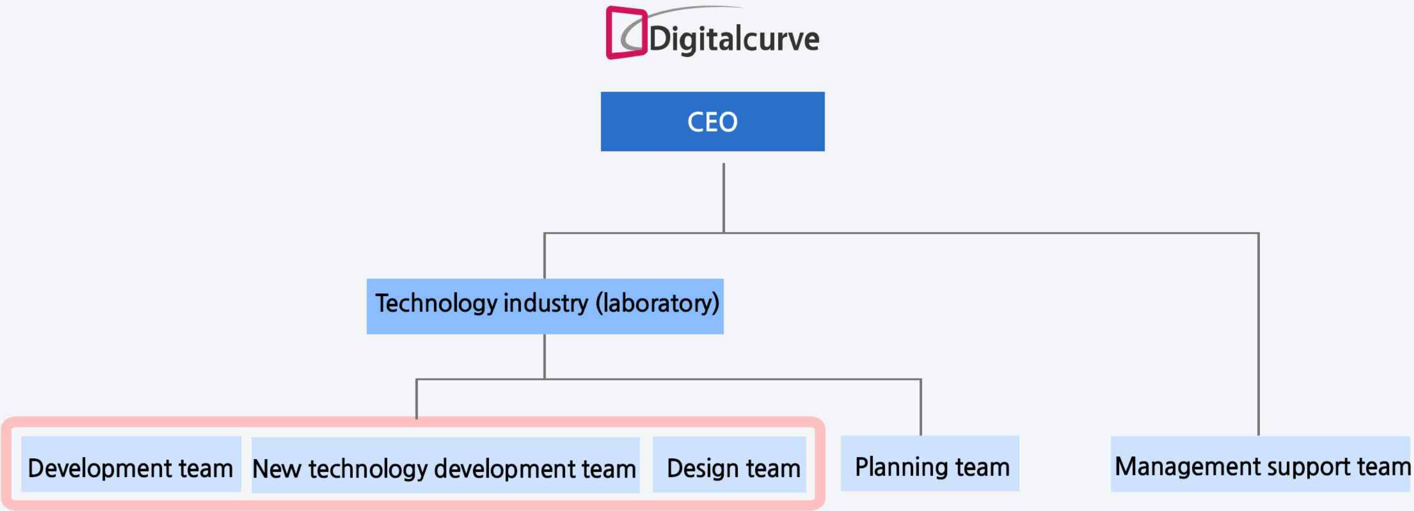
S/W Product catalogue(v1.2)

Digitalcurve.INC. a company with the best technology in the domestic surveying sector, is a company that internalizes and develops technologies such as measurement, precision surveying, image recognition, drone flight, and point cloud by presenting challenges to various surveying-based sector by incorporating AI.

Hello, I am Hong-Joon Lee, CEO of Digital Curve.

Digital Curve, a small but strong company, is an IT company that was founded dreaming of bringing the digital world closer to the real world. Founded in 2010, Digital Curve is a next-generation AI, big data, and drone-specialized survey technology-based company that is growing based on its technology and key talents.

Organization chart



Digitalcurve

CEO

Technology industry (laboratory)

- Development team
- New technology development team
- Design team
- Planning team
- Management support team

Major history

2017.11.28
Polaris service initiation

2019.03.30
DC Tools service initiationvt

2020.12.19
FisDrone service initiation

2022.04.13
SurvWiseBD service initiation

2022.07.31
SpearMint service initiation

2023.07.06
OrangeMeter service launch

2023.10.01
AnchorRobot Controller

2024.01.10
Polaris AN (All New)

Small and medium-sized companies growing towards the best

Digitalcurve

Certification/Patent/Listing

Laboratory Certification

Innobiz

Inno-Biz membership card

Venture business confirmation

Recommended technical certificate

Competitive bidding qualification registration card

Certificate of Excellence

Location-based service business declaration certificate

GS certificate

Certificate of direct production confirmation

MADRID Patent

US Registered Patent

Japanese Registered Patent

Drawing data conversion

Extract result data

Generate survey data

Flight result modeling

Drawing point extraction

GCP auto-matching

Drone control and result matching

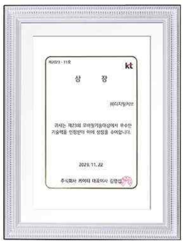
Set contour flight

Drone group flight path configuration

Drone control during LiDAR installation

Specifying ship measurement

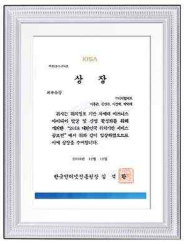
2023 Mobile Technology Awards



2022 Mobile Technology Awards

2021 Smart Construction Challenge Award

2018 Location-Based Service Competition Awards



SOKKIA Korea a plaque of merit

Partner

현대중공업
SK 텔레콤
MBC RTK
LG전자

EBS
신한은행
IBM
incross
Dream · Imagination · Freedom

금융결제원
IN3tech
SOKKIA
새한측기(주)
SOKKIA INSTRUMENTS

㈜한국측기사
KOREA SURVEYING INSTRUMENTS CO., LTD.
GS 건설
DaeMyoung
동아측기사

SOKKIA
소끼아충북대리점
한솔측기사
동아ENS
DONG-A
Engineering&Surveying inc.
SJ KING 세종측기(주)

공영정밀측기
NEZ
system
YUILST
(주)유일에스티
현대측기(주)

(주)우주측기
Universal Surveying Instruments Co.,Ltd.
대영측기
㈜현대측기
(주)공영측기

세계측기
가야측기
경일측기사
삼성측기

(주)구로측기
(주)대우측기
코리아계측기술
SKY FOREST 하늘숲ENG

S/W companies concentrating on patent-based technology

Digitalcurve

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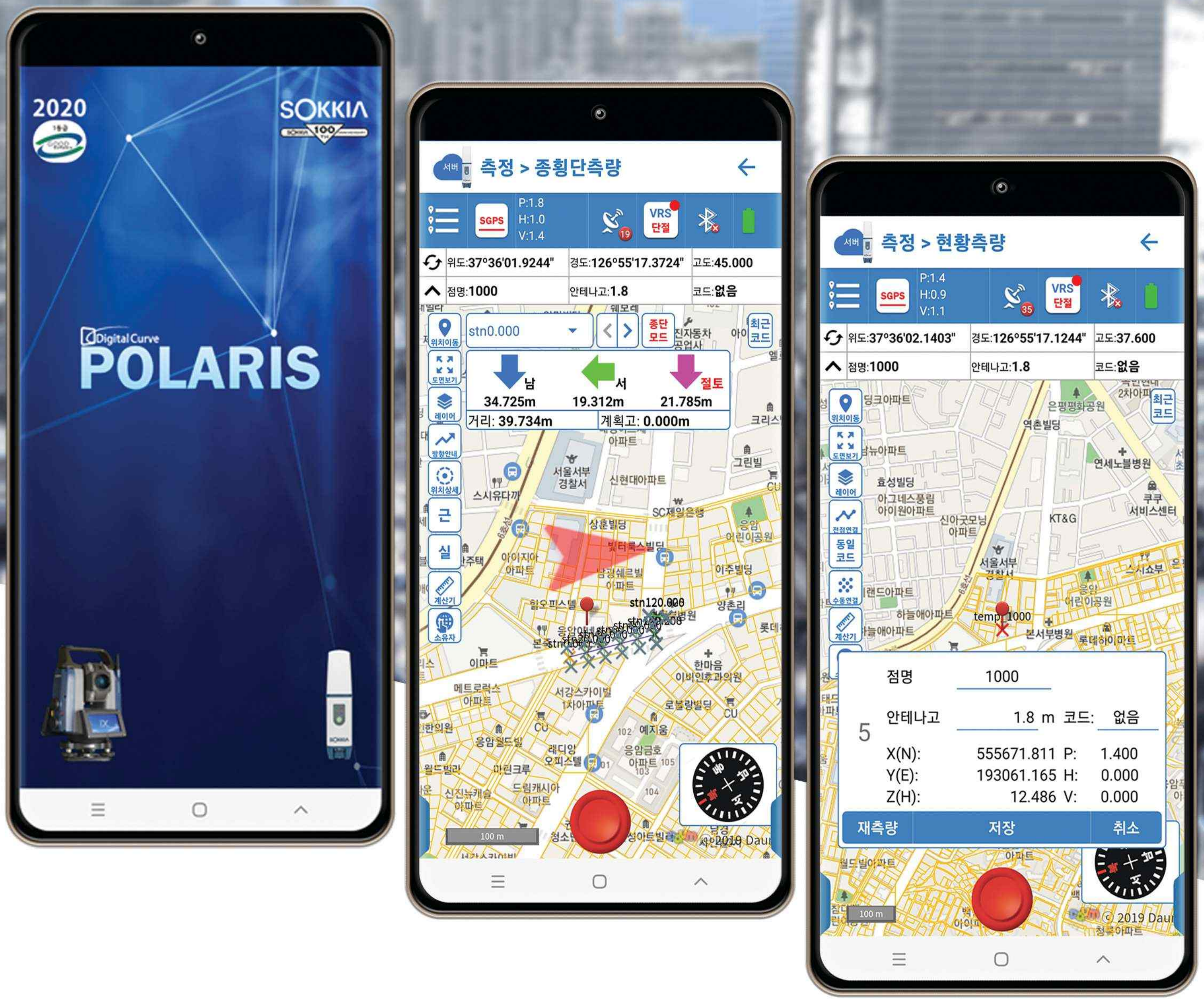
POLARIS



측정 > 종횡단측량

P:1.8
H:1.0
V:1.4

위도:37°36'01.9244" 경도:126°55'17.3724" 고도:45.000

점명:1000 안테나고:1.8 코드:없음

stn0.000

남 34.725m
서 19.312m
절토 21.785m

거리: 39.734m 계획고: 0.000m

측정 > 현황측량

P:1.4
H:0.9
V:1.1

위도:37°36'02.1403" 경도:126°55'17.1244" 고도:37.600

점명:1000 안테나고:1.8 코드:없음

점명 1000

안테나고 1.8 m 코드: 없음

X(N): 555671.811 P: 1.400
Y(E): 193061.165 H: 0.000
Z(H): 12.486 V: 0.000

재측량 저장 취소

GNSS NETWORK RTK software developed with the best technology in Korea

Both SOKKIA equipment and TOPCON equipment can be utilized, and various functions that can be applied to the field through domestically optimized technology are provided.
Through www.polarisworks.co.kr, server linkage between various devices, data transfer, drawing processing are provided.

POLARIS Main Function

App

Customized solutions for the domestic environment	Through domestically developed technology, various surveying functions can be used according to the site Providing surveying solutions suitable for the work environment
Cadastral map download and owner information verification function	The application itself has a function of downloading cadastral maps and applying them immediately through location designation up to the maximum eupmyeon-dong/ri Owner information can be checked by selecting the area where you want to check the informationtion
Easy to use GPS	Support for survey function using the GPS of the terminal Support the function of checking the remaining distance and height difference with the destination of the planned point on the selected map
Ability to create planning points through drawings	It is possible to create points/lines through CAD drawings, designate them as planning points, and measure them Functions such as /center/offset extraction can be used on the screen
Immediate creation of	Ability to generate results immediately using measured data Survey data can be saved in CAD drawing format and transferred to a file
Supports a variety of RTK functions for high-precision surveying	Supports high-precision surveying functions through network RTKs such as VRS, FKP, GNSS, and - RTKs

Web

Various file formats	DXF, CSV, KML format that can be used in Google Maps, etc., can be easily downloaded and converted from the Web
Highly accessible	Check and output data results through web login anytime, anywhere
Cloud services	If you upload survey data to Cloud for processing, you do not need to purchase a separate PC
Easy to check results	Through the internal support system site, you can immediately check the results drawings with the Web CAD
Web CAD support	Web login allows you to easily and conveniently check and edit CAD drawings

Solution

Online survey server linkage allows data and drawings to be used on various devices

Powerful in-house functions reduce in-service time

Linking regional coordinates settings that do not require reset, providing public layer and drawing display function

Quick updates for domestic users provide convenient usability

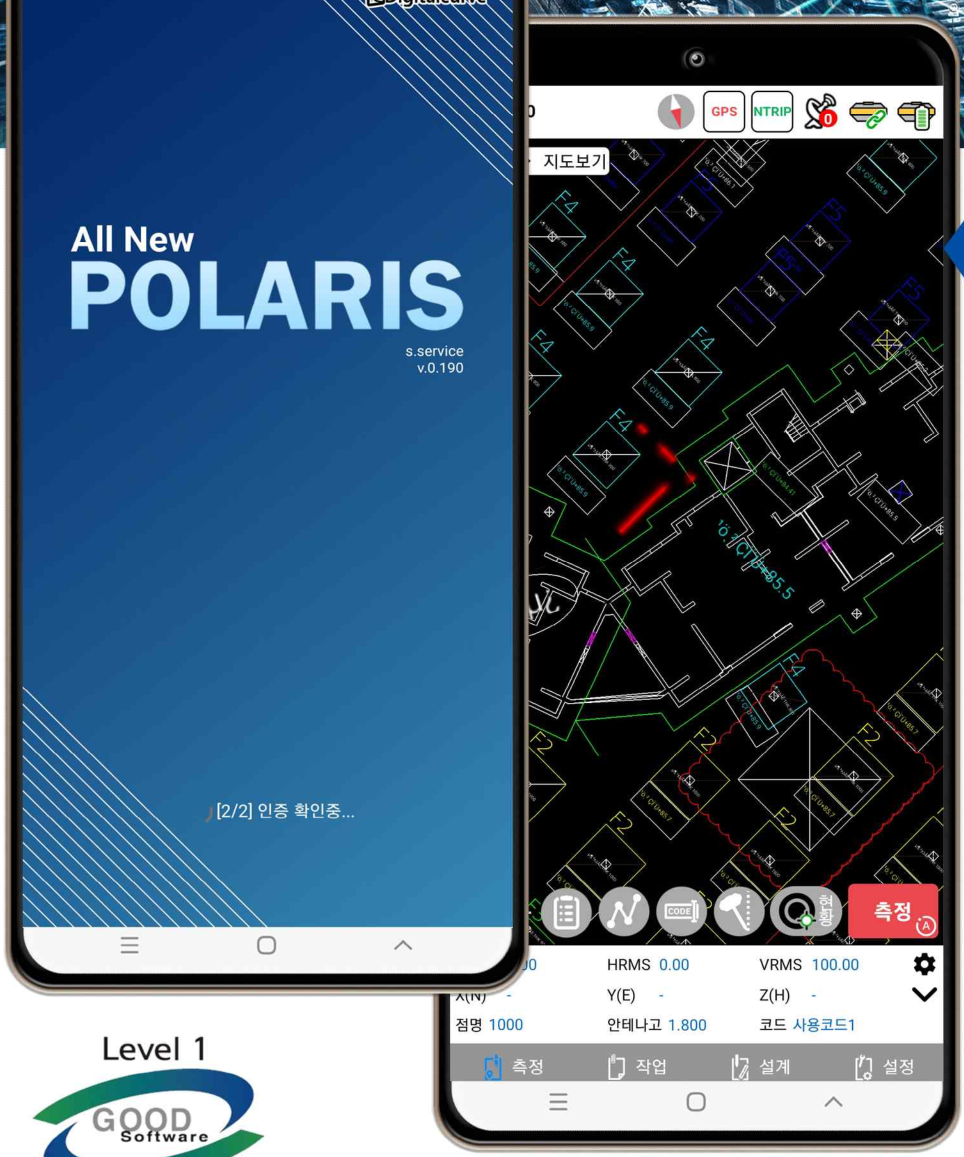
Provides stakeout guidance function through voice

Total station support (both manual / automatic devices are supported), tools for TS devices can be used

AI-based security-enhanced solution developed in Korea

DigitalCurve

ALL NEW POLARIS



s.service
v.0.190

[2/2] 인증 확인중...

HRMS 0.00
VRMS 100.00
X(N) -
Y(E) -
Z(H) -
점명 1000
안테나고 1.800
코드 사용코드1

Integrated UI based on patented technology and know-how GNSS Network RTK Software

With technology developed domestically, various surveying functions can be used appropriately in the field.
Server interconnection and data transfer between various devices via links; www.polarisworks.co.kr Drawings are available.

Brand

1. TOPCON
2. SOKKIA
3. STELLA
4. E-SURVEY
5. GINTEC
6. SINOGNSS
7. KOISS
8. KOLIDA
9. TRUST
10. KDNav
11. Synerex

Level 1
GOOD Software

ALL NEW
POLARIS Main functions

App

Strengthening survey-based work customized solution	Patent-based technology allows you to use a variety of surveying functions tailored to your field.Providing surveying solutions suitable for the working environment.
Cadastral map download and information confirmation function	By specifying the location of the app's own village There is a function to download cadastral maps and apply them immediately. Select the region you want to check information on You can check owner information.
Hybrid function support Total Station and GNSS support all	Supports surveying function using the terminal's GPS It supports the function of checking the remaining distance and elevation difference using the planning point selected on the map as the destination.
Point planning through drawings creation function	Points/lines can be created through CAD drawings, designated as planning points, and then measured. Functions such as equal division/center/offset extraction can be used on the screen.
Result data Can be created immediately	Ability to immediately generate results using measured data. Survey data can be saved in CAD drawing format and then transferred as a file.
High precision surveying RTK function support Various device support	Network RTK such as VRS, FKP, GNSS, etc. Support for high-precision surveying functions through Base Rover RTK - Topcon,Sokkia,Stella,E-Survey,Gintech etc.

Web

Various file formats	Used in DXF, CSV, and Google Maps. Available in various KML formats and more. Easy and convenient on the web with extensions Download and conversion is available.
Excellent accessibility	Anytime, anywhere via web login Check and print data results.
Cloud service	Upload your survey data t o the cloud. There is no need to buy a separate PC for processing.
Check your performance easily	Web via business support system site You can immediately check the drawing of the result using CAD.
Web CAD support	Easy and convenient through web login, View and edit CAD drawings.

Solution

GNSS Brand

TotalStation Brand

SOKKIA

TOPCON

Online Survey Server various connections via device data and drawings available

Fast VOC shorten time hybrid function, shorter working hours

No need to reset. Connects to local coordinate settings and provides public layer and drawing display capabilities.

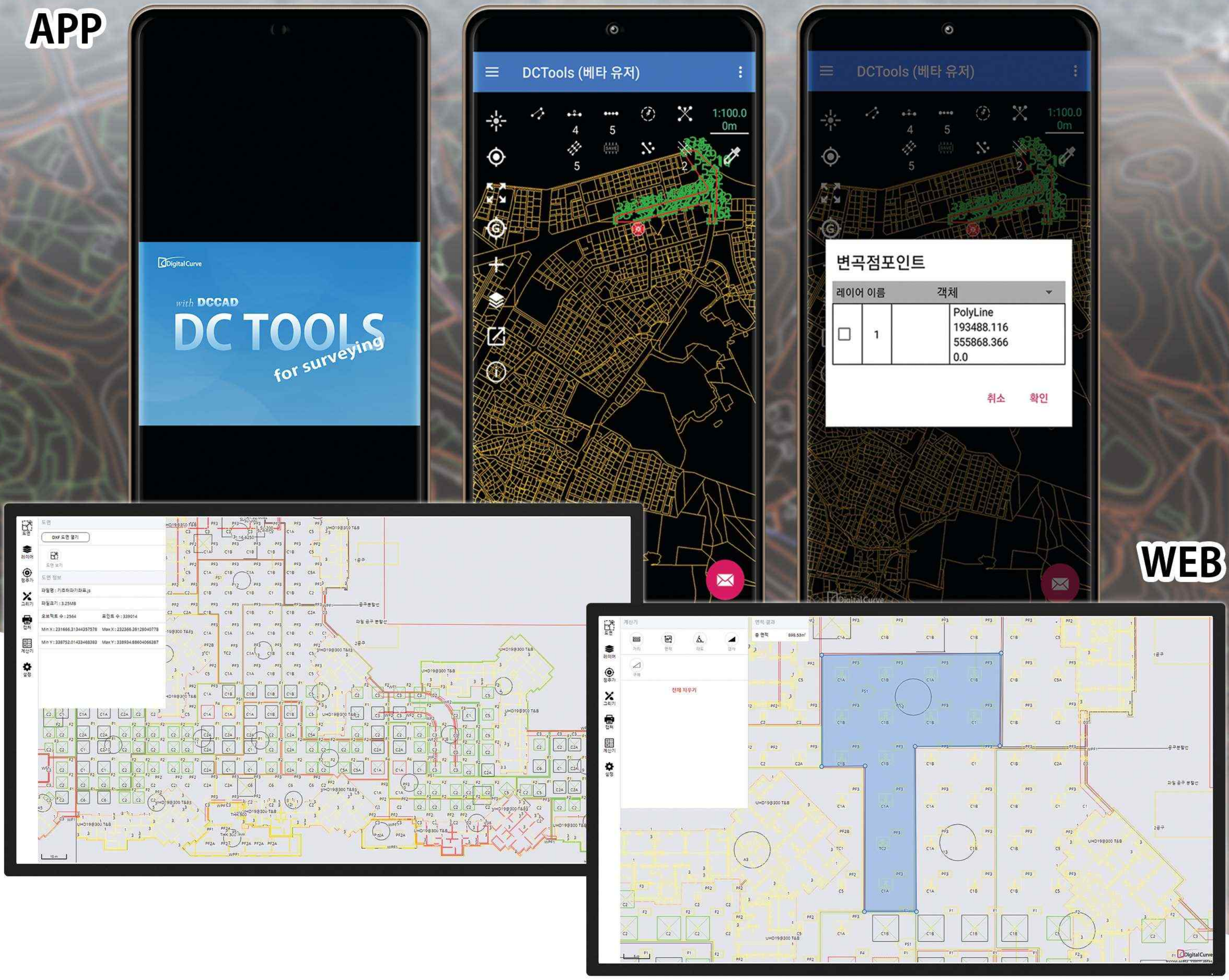
For users With quick updates Provides convenient

Stakeout via voice Guidance function provided

Totallstation support (supports both manual and automatic devices); TS device-specific tools

Digitalcurve

DC TOOLS v2.0



변곡점포인트

레이어 이름	객체		
☐	1		PolyLine 193488.116 555868.366 0.0

취소 확인

Proprietary CAD editing, viewing program that contains the technology of Digitalcurve

A core component that provides CAD functions in various applications of Digitalcurve through the name DCCAD on the web and in the app.
Excellent program performance certified by domestic patent.

DC TOOLS Main Function

App

In-house dedicated drawing verification application	Applies to all applications of Digitalcurves and aids in the review of drawings	**DC TOOLS license sold individually**	It can also be used as a separate, isolated app and is licensed in a variety of formats
After checking the file, specify the plan point on the drawing	Able to read DXF files (CAD files) and add points/lines to the drawing and designate them as planning points	**Support tools for easy data acquisition**	Drawing data can be extracted using tools such as equal/center/offset extraction
User Customization	Displays user-created guide points and coordinate axes for design and verification convenience	**Quick planning point addition feature**	Viewer can be opened directly from the survey screen to add data on the drawing as plan points
Calculated point information list display function	Displays a list of point information computed by the function for the object selected in Add Point mode	**Supports TS device-specific measurement screens**	For measurement tasks using TS equipment, DCCAD measurement is supported
Superior patent-based technology	A drawing verification and file conversion program that applies the ability to extract points on a drawing using a patent-authorized user interface	**Support for convenience-based option selection functions**	If you do not use online maps, you can select the Use DCCAD only option and skip the map display processing process Supports web CAD when used online

Solution

In-house development/production program for Digitalcurves

DXF drawings can be imported and used as a viewer

Available separately for each module (modules can be sold upon request to the administrator)

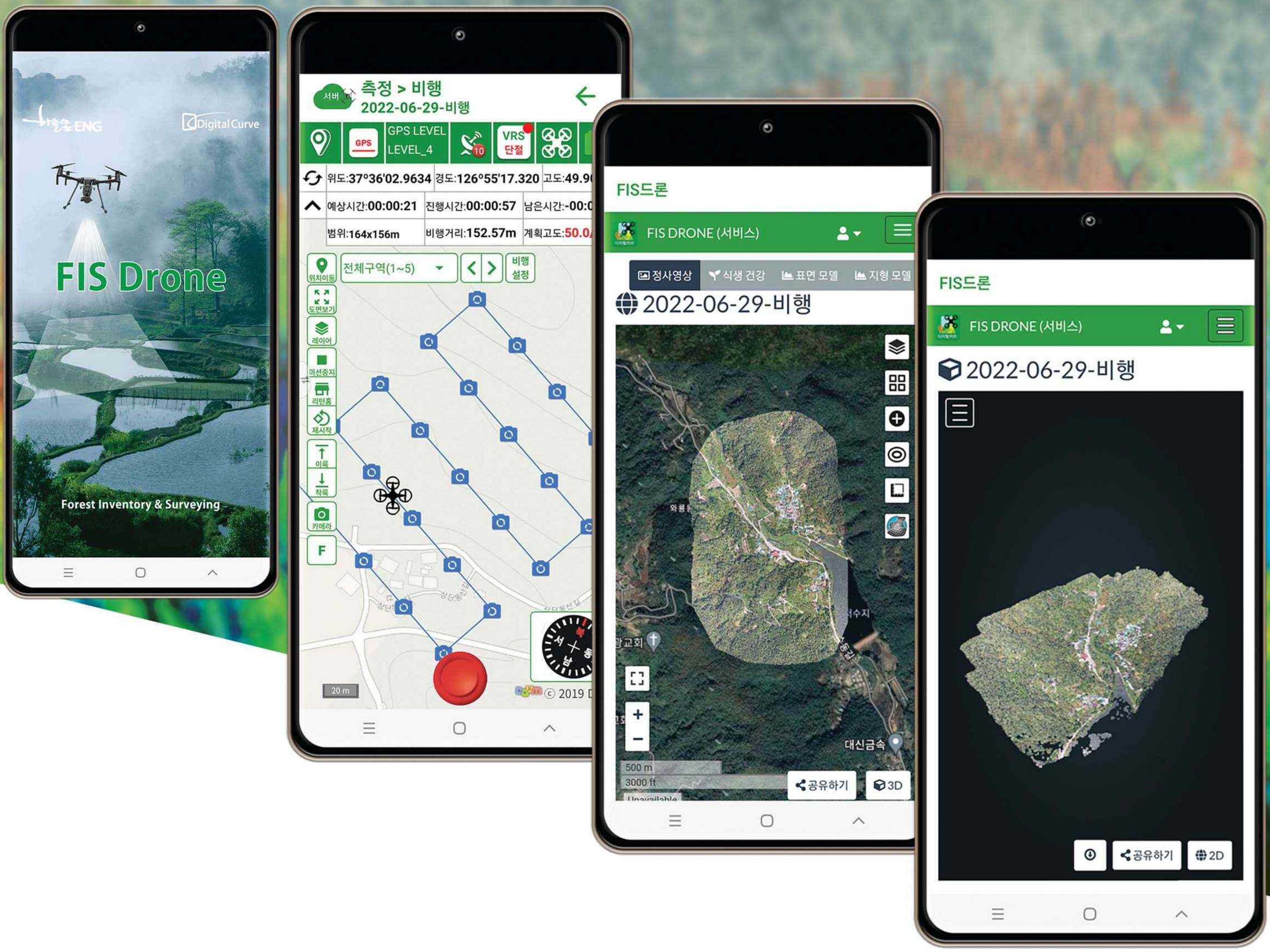
Highest performance point extraction capability

Five types of licenses are offered, allowing users to choose the functions they need and sign up for them

Android Cad, Web Cad compatible application

Digitalcurve

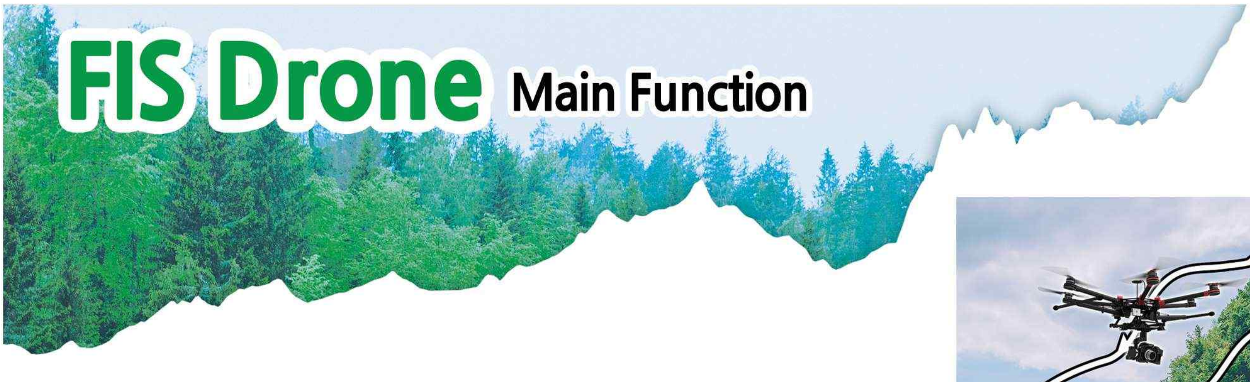
FIS Drone



Real-time domestic forest drone flight software developed with the latest technology

Dedicated flight modeling software optimized for the domestic forest environment with more specialized and specialized services and quickly adapted to field needs.
The software integrates three services: drone flight, mapping & modeling, and forest survey.

FIS Drone Main Function



Solution

The interlocking of online servers allows data and drawings to be conveniently used on a variety of devices

High-precision surveying and powerful internal work functions reduce internal work time

First in Korea to offer drone site photography and piloting capabilities

Provides a variety of field notebook support functions for forest sites (coordinate conversion function)

Provides a high-precision drawing display function on the map (DXF display function)

Provision of project boundary (land registry, area owner) information confirmation function

App

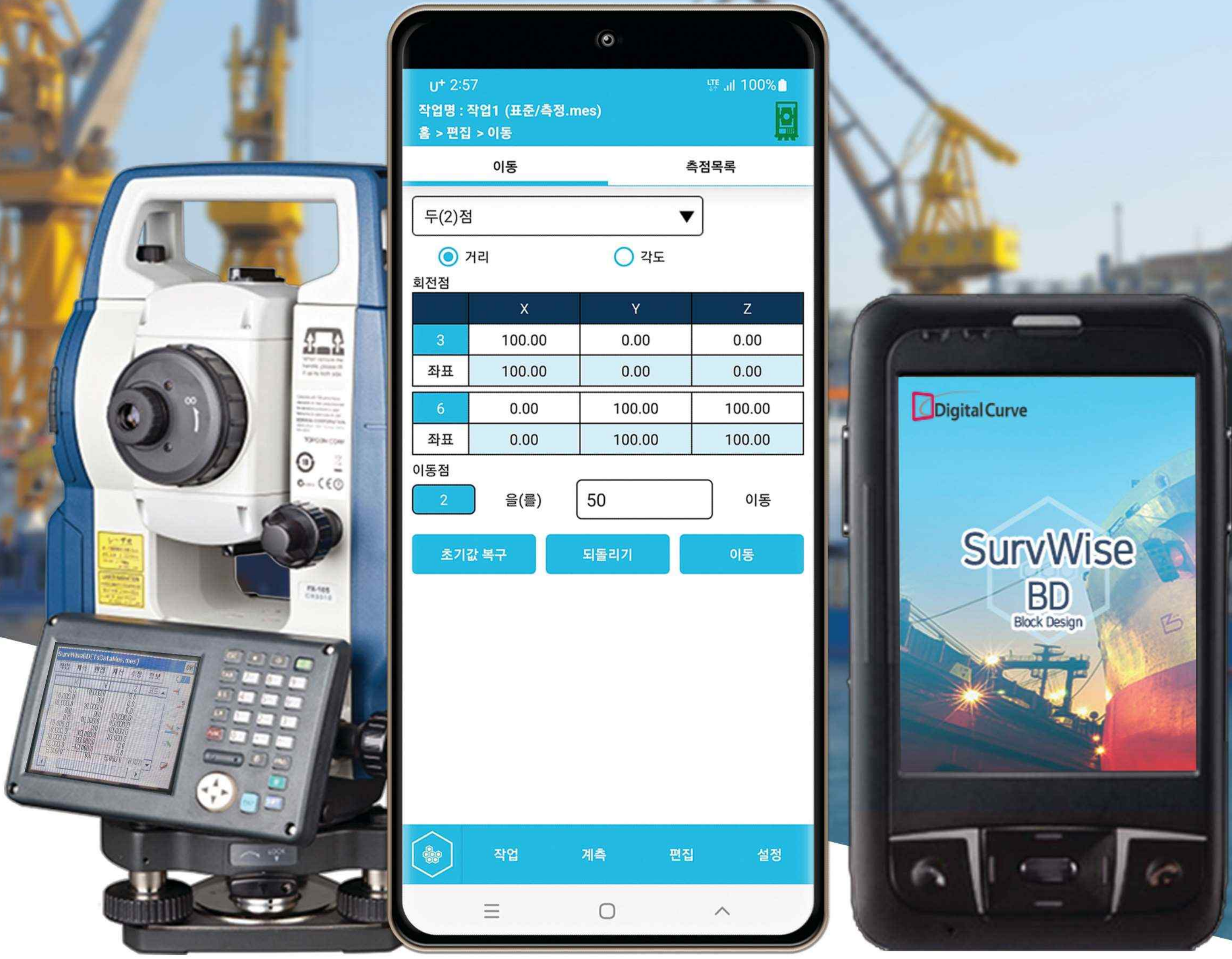
Real-time orthographic image generation	A service that produces real-time video of photos taken by a drone without the need to set up a separate server, allowing immediate viewing at any site
Contour flight	Ability to fly with a DEM (Digital Elevation Model - numerical elevation data) provided by the National Geospatial Information Portal to maintain a constant height between the drone and the terrain in accordance with the altitude of the terrain that changes during flight
Thermal Imaging	In addition to general photography, it also supports the use of infrared cameras
Repeat flight	Repeated flights over a specific area Unlike manually reselecting regions or redesigning flights, there is no margin for error and it is useful for observing and comparing changes in regions over time
Automatic GCP Matching	A function that uses artificial intelligence to automatically match the GCP (Ground Control Point - a reference point on the ground) captured by the drone with the location coordinates on a map

Web

Various file formats	Orthophoto, Surface Model, Point Cloud (LAZ), Texture Model, etc. easily downloadable from the web
Excellent accessibility	Data results can be checked and output anytime, anywhere via web login
Cloud service	No need to purchase a separate PC when survey data is uploaded to the Cloud for processing
Brief Results Check	Deliverable drawings can be instantly checked on a web card through the internal work support system site
Easy interface	Through the toolbar, necessary data such as distances, angles, and areas can be easily obtained

Digitalcurve

SurvWise BD



작업명 : 작업1 (표준/측정.mes)
홈 > 편집 > 이동

두(2)점

● 거리 ○ 각도

회전점

	X	Y	Z
3	100.00	0.00	0.00
좌표	100.00	0.00	0.00
6	0.00	100.00	100.00
좌표	0.00	100.00	100.00

이동점

2 을(를) 50 이동

Dedicated shipbuilding accuracy management software developed with the best technology in Korea

Measurement S/W that applies high-precision algorithms and state-of-the-art technology advised by dedicated shipbuilding surveying and measurement experts
Android Terminal / WinCE PDA / Total Station Onboard Support

SurvWise BD Main Function

Solution

Supports Bluetooth & Serial to provide connectivity

Provides intuitive screen UI for measurement

Provides various point editing functions such as rotation/movement

Application of accurate formulas with expert advice

Latest Android and WinCE (on-board) support, on-site VOC support

Domestic business support functions through domestic-specific technology

App

Automatic storage of measurement data	If there is an existing working measurement, a pop-up notification will confirm this before starting a new measurement
Various file storage methods	Standard measurement results can be saved in mes and des files, and design measurement results in dif files
Correction of survey point data possible	Data of survey points can be modified directly from the list of survey points, including X, Y, and Z coordinates and codes
Supports various measurement methods	Various measurement methods with different settings can be selected depending on the measurement method
Automatic calculation of error when measuring junction points	Error in 2-point connection point measurement is calculated, and 1-point, 2-point, or 3-point circle measurement is possible by target selection

File loading and additional settings	If a blueprint file exists, it can be recalled for measurement and the error coordinates for the blueprint can be set
Offset setting function	Offset setting allows you to also measure the offset value of the point to be measured
After extracting error values, the results are reflected	Error values are calculated through multiple measurements, and the error is reflected in future measurements to derive result values
Average value measurement is possible	With a setting that can be freely turned on or off, the average value is calculated after a user-selected number of measurements
Supports TS Remote function	Remote functionality allows for rotation and movement of TS equipment and laser enable/disable functions within the application

S/W designed exclusively for LiDAR flight on the best in-house patented foundation in Korea

High-precision LiDAR drone functionality with patent-based contour flight, ensuring stability of survey data acquisition and rapid flight design on site

Flight solutions for TDOT LiDAR application recognized nationally

www.polarisworks.co.kr/spearmint link to support internal operations

SpearMint Main Function

App

LiDAR Curve Flight

Applying our own patents, we support flight functions that take into account the characteristics of the LiDAR device
Using only smart equipment
Flight design is possible using KML files that enable confirmation of three-dimensional paths in Google Earth

Contour curve flying

Maintains a constant height with the terrain according to the altitude of the terrain that changes during flight with the 30m DEM (Digital Elevation Model - numerical elevation data) provided by the company applies the company's patented flight altitude design function for flight LiDAR surveying

On-site GCP automatic matching

Using artificial intelligence, the GCP (Ground Control Point) captured by the drone is automatically matched with the location coordinates on the map in the field

Alignment Flight

In-house patent-based cabinet flight design for easy alignment flight designAutomatic execution of alignment flights for LiDAR surveying

Real-time orthographic image generation

Orthoimage artifact generation functionality reflecting LiDAR characteristics
Enables production of real-time orthoimages from photos taken by a drone without installing a separate server

Web

Various file formats

Orthophoto, Surface Model, Point Cloud (LAZ), Texture Model, etc. easily downloadable from the web

Excellent accessibility

Data results can be checked and output anytime, anywhere via web login

Cloud services

No need to purchase a separate PC when survey data is uploaded to the Cloud for processing

Easy interface

Through the toolbar, you can easily obtain the data you need, such as distances, angles, areas, etc

Easy post-processing functions

Tree removal, section filtering, etc. can be easily handled

Solution

One-touch LiDAR attachment without drone modifications

Automatic execution of alignment flights

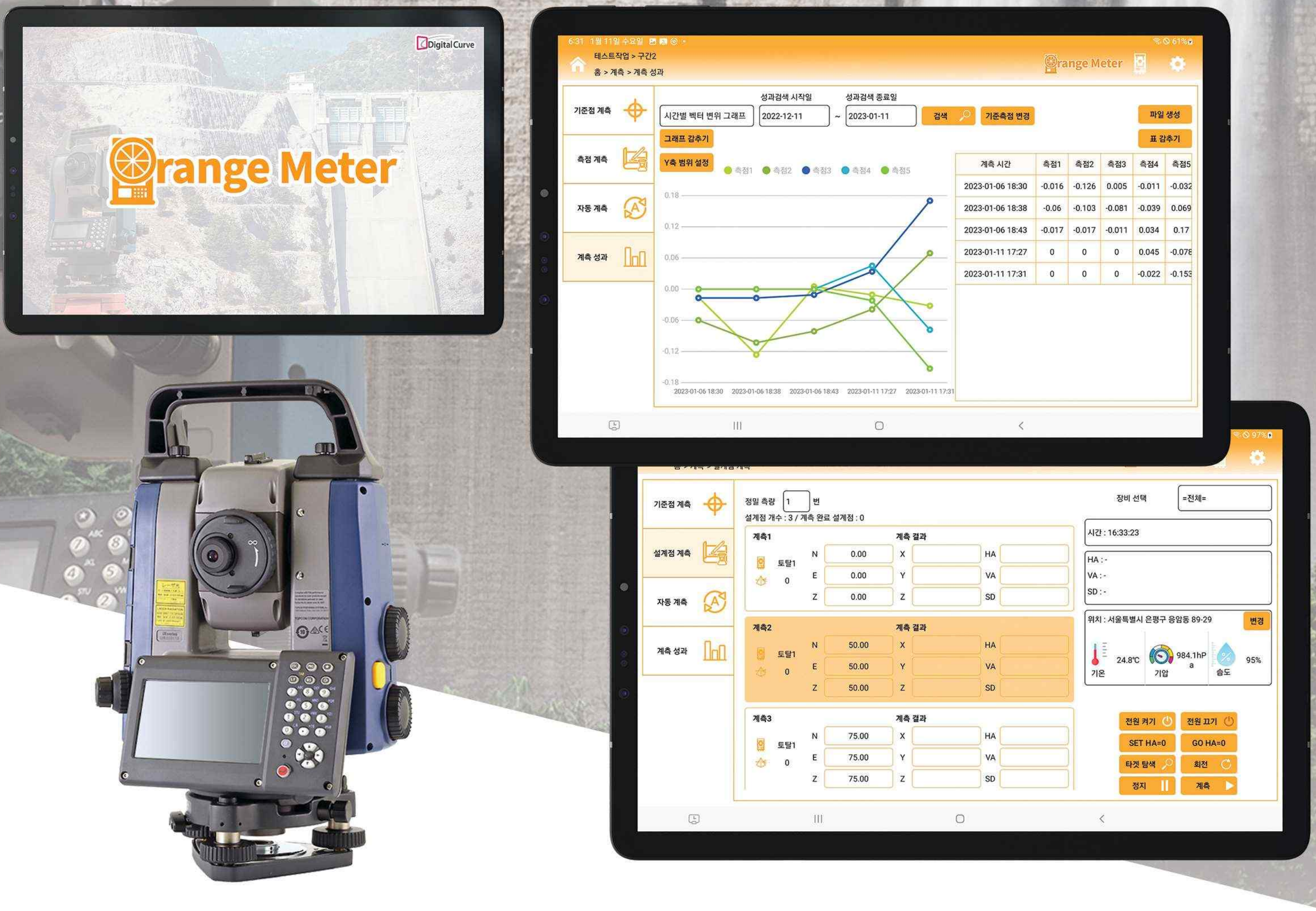
Automatic scanning flight along curved paths

Analyze survey content in minutes and immediately check data acquisition status

Quick and easy automated processing through the cloud

Easily perform data filtering processes

Orange Meter



6:31 1월 11일 수요일

61%

테스트작업 > 구간2

홈 > 계측 > 계측 성과

성과검색 시작일: 2022-12-11

성과검색 종료일: 2023-01-11

시간별 벡터 변위 그래프

계측 시간	측점1	측점2	측점3	측점4	측점5
2023-01-06 18:30	-0.016	-0.126	0.005	-0.011	-0.032
2023-01-06 18:38	-0.06	-0.103	-0.081	-0.039	0.069
2023-01-06 18:43	-0.017	-0.017	-0.011	0.034	0.17
2023-01-11 17:27	0	0	0	0.045	-0.078
2023-01-11 17:31	0	0	0	-0.022	-0.153

97%

정밀 측량 1 번

장비 선택 =전체=

설계점 개수 : 3 / 계측 완료 설계점 : 0

시간 : 16:33:23

HA : -

VA : -

SD : -

위치 : 서울특별시 은평구 응암동 89-29

			계측 결과			
계측1	N	0.00	X		HA	
토탈1	E	0.00	Y		VA	
0	Z	0.00	Z		SD	
계측2	N	50.00	X		HA	
토탈1	E	50.00	Y		VA	
0	Z	50.00	Z		SD	
계측3	N	75.00	X		HA	
토탈1	E	75.00	Y		VA	
0	Z	75.00	Z		SD	

기온 24.8℃

기압 984.1hPa

습도 95%

Automated displacement measurement monitoring S/W developed with patented technology

Automated measurement software that provides real-time confirmation of 2D and 3D displacement data, basic FAULT TOLERANCE functionality, and measurement monitoring software that includes the ability to use legacy servers by site
providing an easy and method of use

Orange Meter Main Function

Solution

Provides high-precision surveying functions using reference points

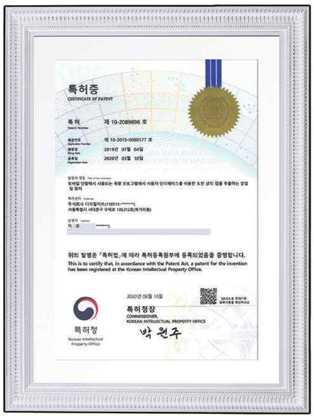
Scheduled automatic measurement system capable of unattended operation

Supports various methods of warning notification when displacement is observed to be greater than the allowable error

Automatic correction using sensors minimizes weather errors

Through the logs, you can check for measurement failures and anomalies

Supports various graphs and 3D data performance checks and various reports



특허증
CERTIFICATE OF PATENT

특허 Patent Number 제 10-2089896 호

출원번호 Application Number 제 10-2019-0080577 호

출원일 Filing Date 2019년 07월 04일

등록일 Registration Date 2020년 03월 10일

발명의 명칭 Title of the Invention
모바일 단말에서 사용되는 측량 프로그램에서 사용자 인터페이스를 이용한 도면 상의 점을 추출하는 방법 및 장치

특허권자 Patentee
주식회사 디지털커브(110111-*******)

발명자 Inventor
[redacted]

위의 발명은 「특허법」에 따라 특허등록원부에 등록되었음을 증명합니다.
This is to certify that, in accordance with the Patent Act, a patent for the invention has been registered at the Korean Intellectual Property Office.

2020년 03월 10일

특허청장
COMMISSIONER, KOREAN INTELLECTUAL PROPERTY OFFICE

박 원주

특허청
Korean Intellectual Property Office

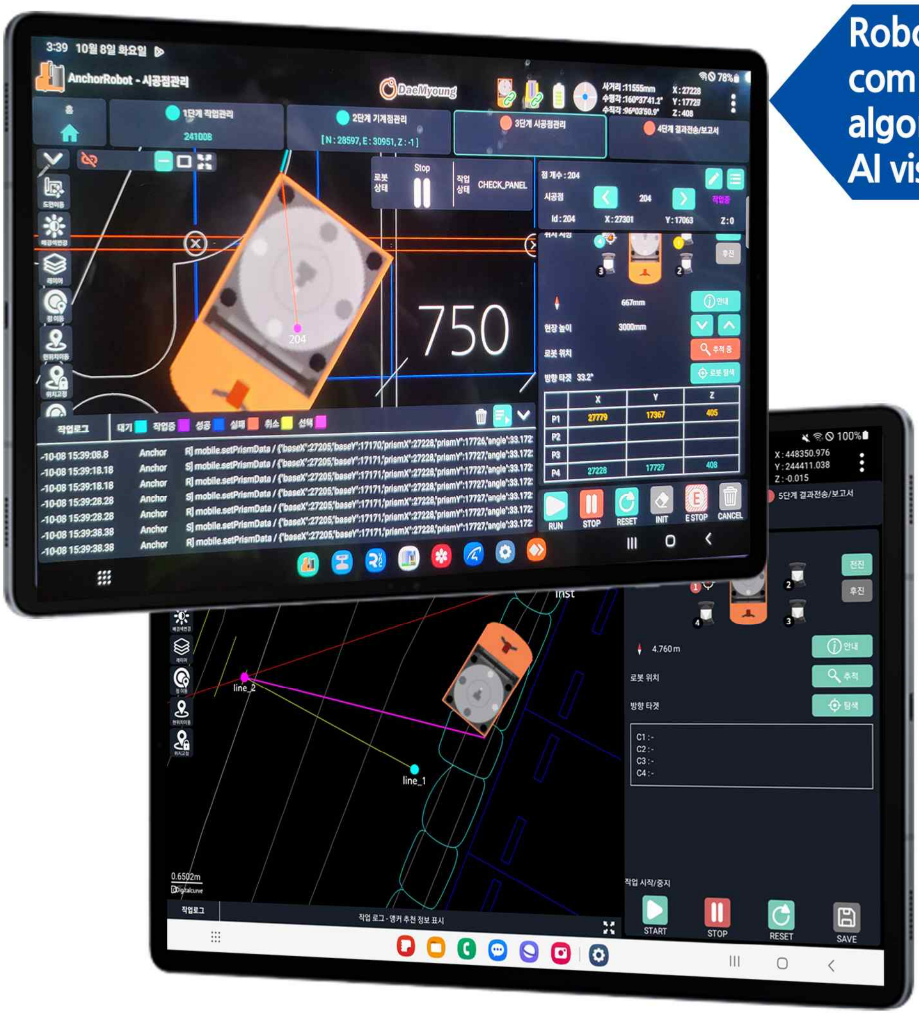
App

Support customized processes	Provide an accurate and convenient user experience through a measurement process optimized for the domestic environment	**Reference point survey**	Provides high-precision surveying functions using reference points
Easy to use surveying instruments	Easy manual control of total stations with integrated solutions	**Sensor correction**	Automatic correction using sensors minimizes weather errors
Real-time data	Real-time confirmation of 2D and 3D displacement data	**Log analysis**	Through the logs, you can check for measurement failures and anomalies
Graph display by time	Graphical display of changes in displacement data by time	**Warning Notification**	Supports various methods of warning notification when displacement is observed to be greater than the allowable error
Automatic measurement schedule	Automatically measures reference and side points according to a user-defined schedule	**Supports a variety of reports**	Supports various graphs and various formats of reports on 3D data performance

AI-Based Precision Robot Control Safety Solution

Digital Curve

Industrial Robot
Precision Control Controller



Robotics control control technology completed with precision control algorithms and safety-enhanced AI vision technology

Securing a control base suitable for field situations with various robot precision controls through industrial-based technology

www.polarisworks.co.kr
Link between various devices
Server interworking,
data transfer, drawing available

Support equipment

1. TOPCON
2. SOKKIA
3. E-SURVEY
4. GINTEC
5. SINOGNSS
6. KOLIDA
7. Based on the robot built-in sensor

Industrial Robot Precision Control Controller

App

Robot control customized solution using robot precision position control technology	Provide a precise position control solution based on a precise position algorithm through the robot's precision control selection device (1. Using measuring instruments, 2 Using robot internal sensors: User selection)
Drawing-based position control technology capabilities	Control of precision position control algorithm through relative position on drawing, use absolute position control matching technology when absolute position of drawing is required, GNSS, IoT, etc
Precision control technology of robotic devices	Use surveying equipment or internal sensor-based top-level precision control algorithms to apply precision control technology for horizontal, vertical, position, and control (3 to 6 axes) robots
Application of Multi-tier Robot Control Technology	To apply multiple simultaneous control technologies, secure simultaneous control technologies, AI-based safety management, and secure multiple path/drive control technologies
Analysis of CAD Drawings control technology	By analyzing and controlling CAD drawings DXF and DWG, basic technology such as location search, construction location, and scope is secured
Immediate generation of deliverable data	Immediate production using measured data Functional measurement data can be stored in CAD drawing format and then file transmission

Solution

Supported Brands

Server interworking enables data and drawings to be used on a variety of devices

Shortening the internal up time and integrating the Legacy system by linking the internal up function

Drawing-based position control function and relative position robot display function

With quick updates for users
Convenient usability

Provides control guidance via voice

Measuring instrument support function, robot internal sensor available

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