

Product Profile

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Smart Construction and Drone

A drone is an innovation of collecting spatial data.

Digitalizing sites with spatial data collected easily and fast by drones is a beginning of smart construction.

And the easiest way to utilize drones on sites is **CARTA**.

Necessity of drone and smart construction technology

Before the introduction of CARTA's platform

Impossible to figure out sites' situation without **visiting in person**

Weaken solidarity of site
Take travel time

Fragmented way of communication among stakeholders
(Headquarters, orderer etc.)

Repeated communication occurs
Impossible to deal with quick request

Printout-centered **ineffective storing/managing of data**

Hard to manage history
Risk of data loss

Calculation / earthworks measurement requiring **labor and resource**

Bigger range of error
Take much time/cost

After the introduction of CARTA's platform

“ Remote, real time, monitoring ”

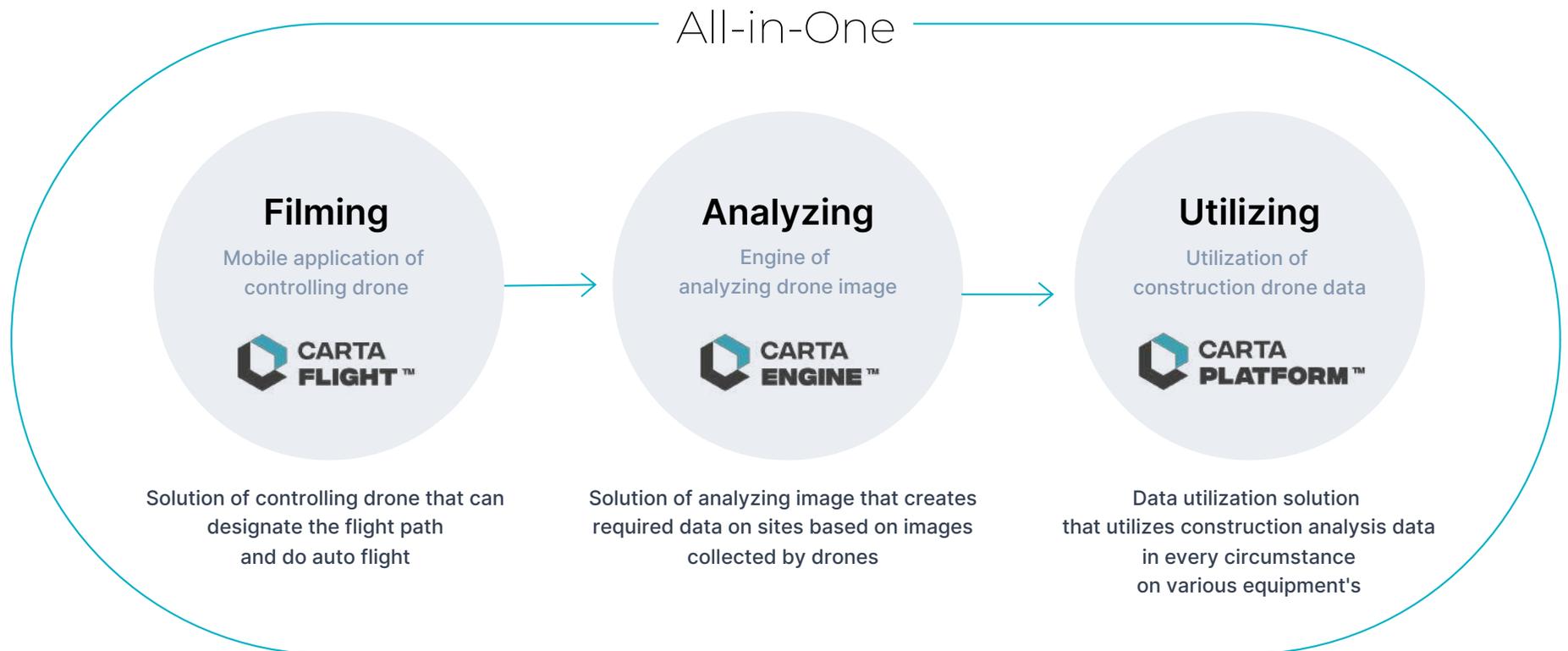
“ Effective communication ”

“ Stable storing/utilizing data ”

“ Easy and fast detection of sites ”

Service Overview

CARTA is **the one and only** company that integrates every procedure needed to utilize drones on construction sites.



Main functions of CARTA's service

1. Collecting sites' data

Drone's auto flight | Automatic uploading

2. Monitoring

2D/3D monitoring | Comparison of time series change | Video-based monitoring

3. Communication

Floor plan overlay | Memo function

4. Storing and utilizing data

Manage data of sites | Webhard function

5. Detecting sites

Produce section | Calculate earthworks | Check a cadastral map

1. Collecting sites' data

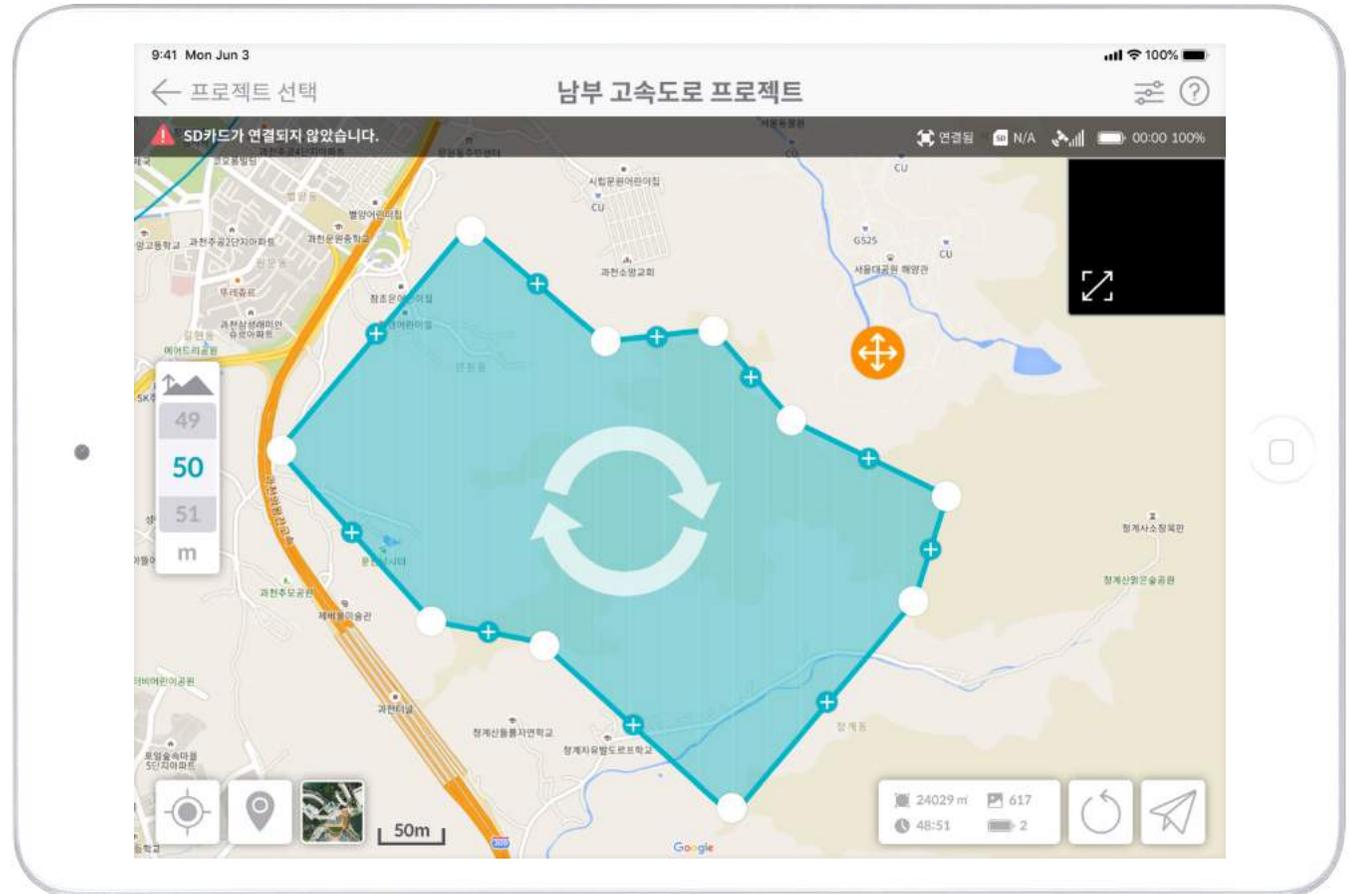
Drone's auto flight | Automatic uploading

Function

Auto-generated flight path optimized to 3D modeling

Effect

Anyone can film with drones like an expert



1. Collecting sites' data

Drone's auto flight | Automatic uploading

Function

Automatic uploading of data collected by drones on a platform

Effect

Filming-Analyzing-Utilizing service available with a single tablet



* Check a live streaming (in Sep. tbd) video on the platform in real time

2. Monitoring

2D/3D monitoring | Comparison of time series change | Video-based monitoring

Function

Check the latest sites'
look in 2D and 3D

Effect

Check situation of sites
wherever and whenever
you want



2. Monitoring

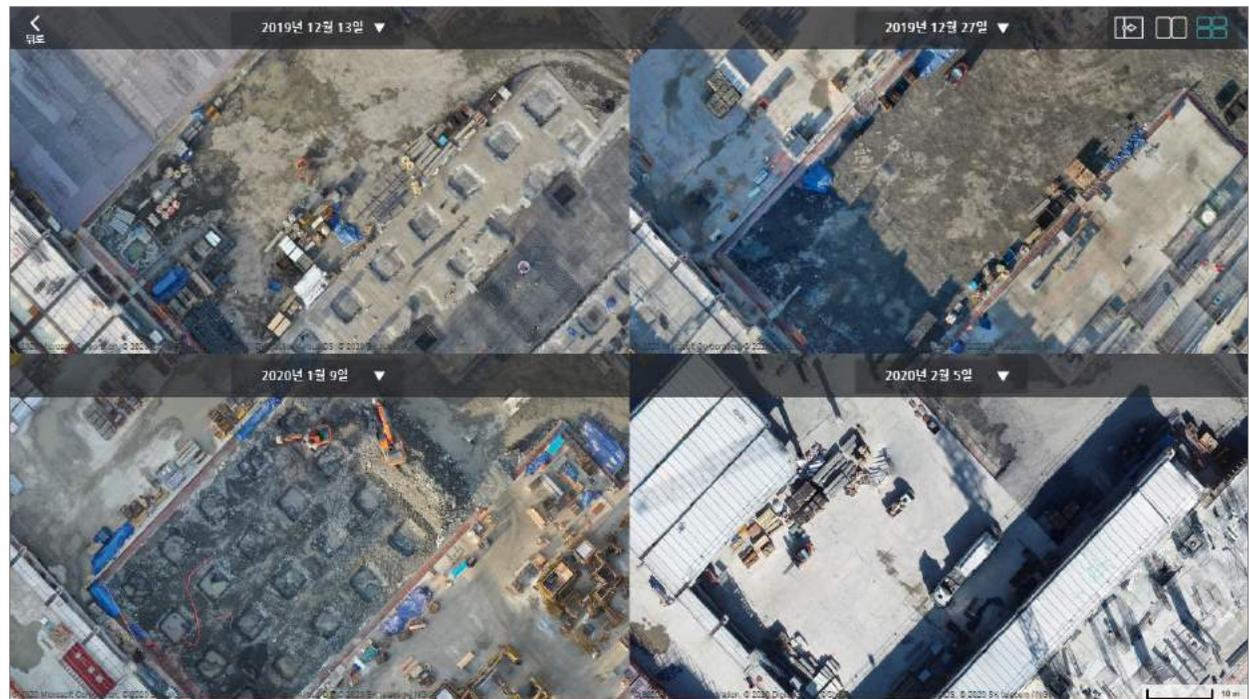
2D/3D monitoring | Comparison of time series change | Video-based monitoring

Function

Compare change of sites in two division/quartered and more

Effect

Easy to figure out sites' change and work progress by time



2. Monitoring

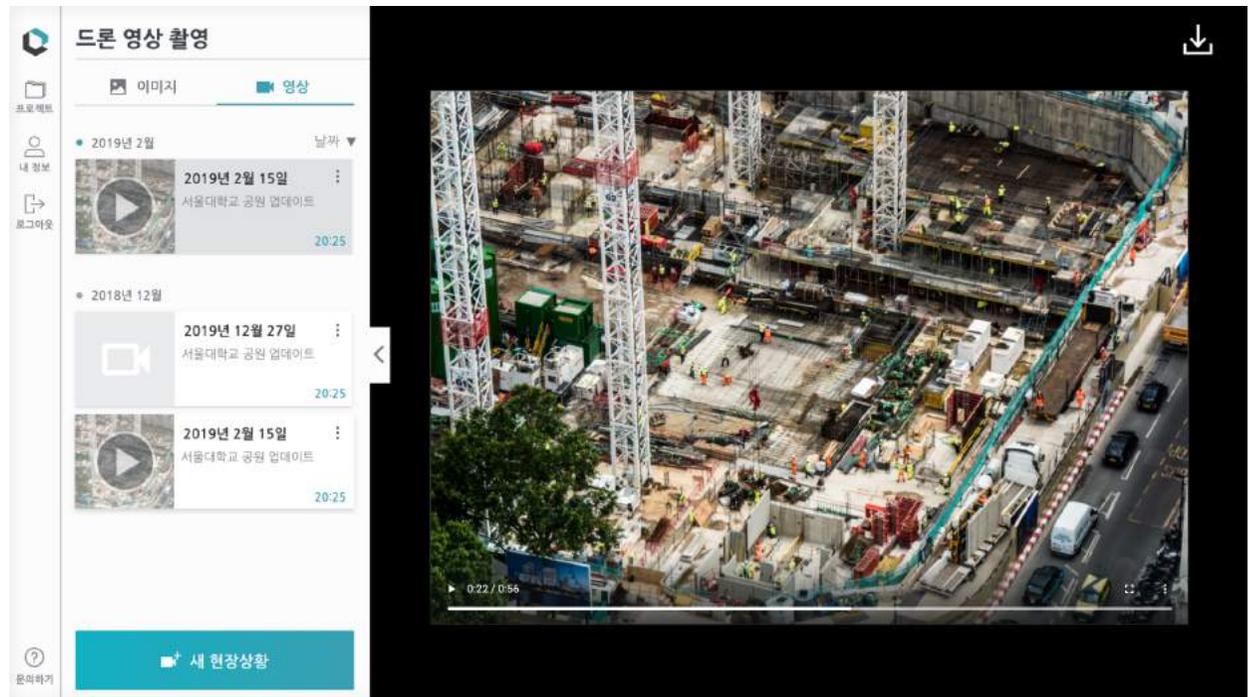
2D/3D monitoring | Comparison of time series change | Video-based monitoring

Function

Easily upload and play videos filmed with drones

Effect

Record and monitor every spot of sites via video



3. Communication

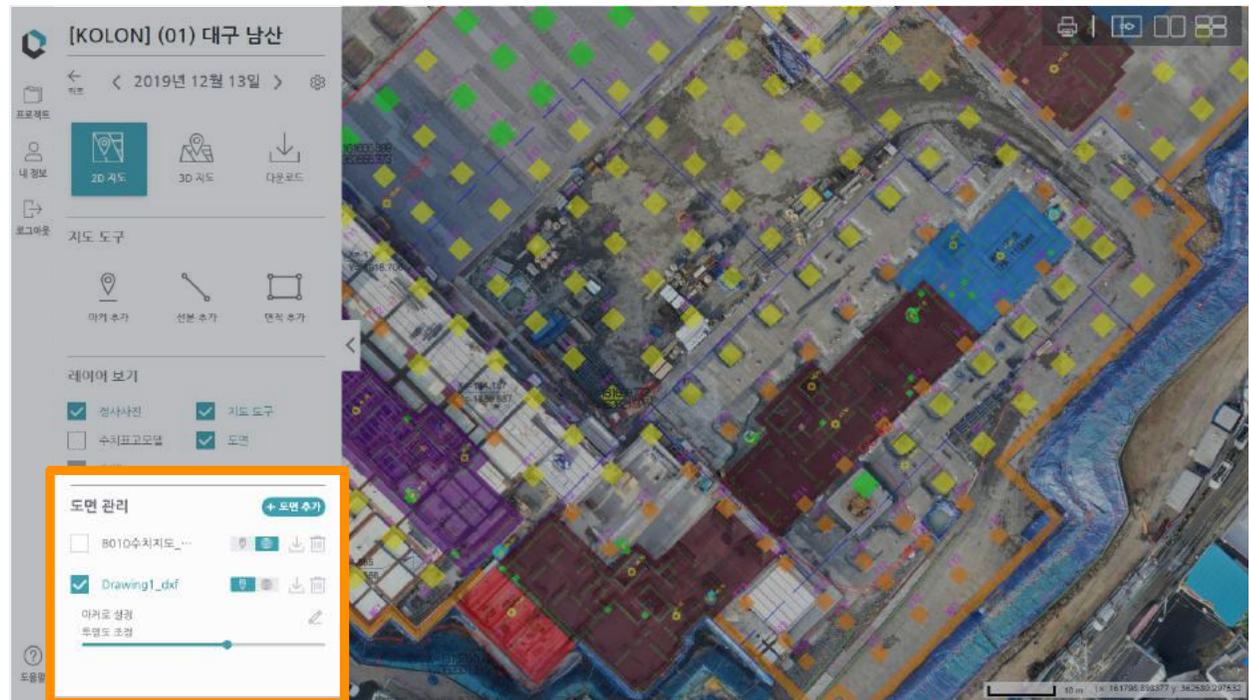
Floor plan overlay | Memo function

Function

Compare floor plan with sites based on precise information of coordinates

Effect

Quick check available if there is an error of layout-sites



3. Communication

Floor plan overlay | Memo function

Function

Create marks on the spots you want and add memos

Effect

Effective communication by unifying communication channels



4. Storing/Utilizing data

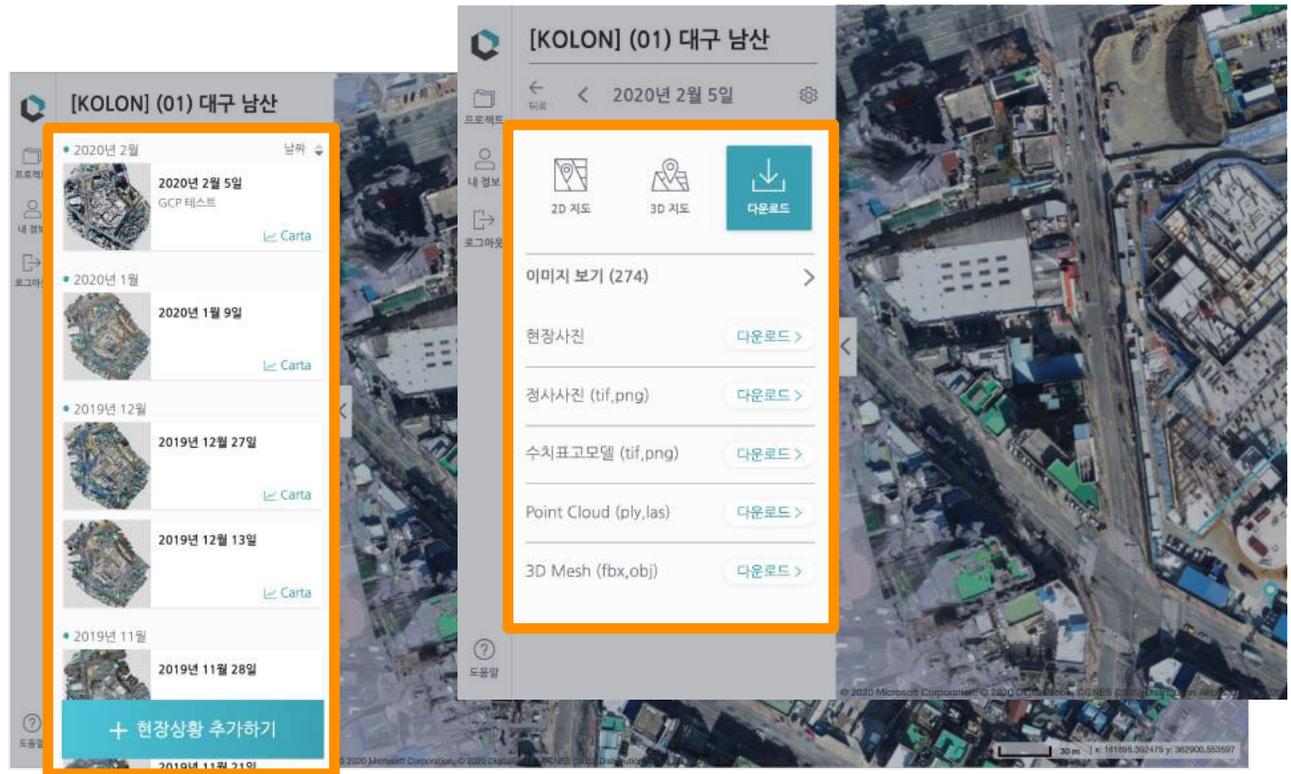
Manage data of sites | Webhard function

Function

Manage data of sites collected/analyzed by drones

Effect

Utilize stored sites' data when accidents/disputes occur



4. Storing/Utilizing data

Manage data of sites | Webhard function

Function

Upload/download every form of file such as HWP, Word, CAD etc without any installation

Effect

Store site-related materials and integrally manage records



5. Detecting sites

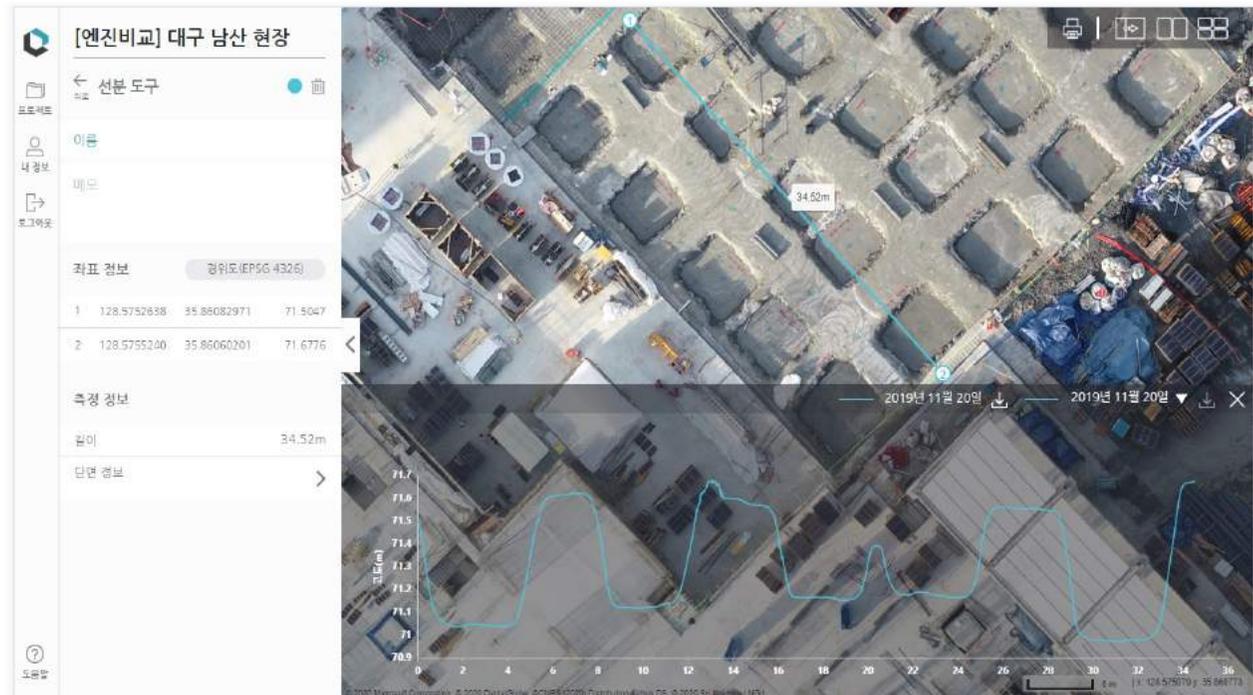
Produce section | Calculate earthworks | Check a cadastral map

Function

Provide section information of needed part in real time

Effect

Check construction progress and error compared to design level



5. Detecting sites

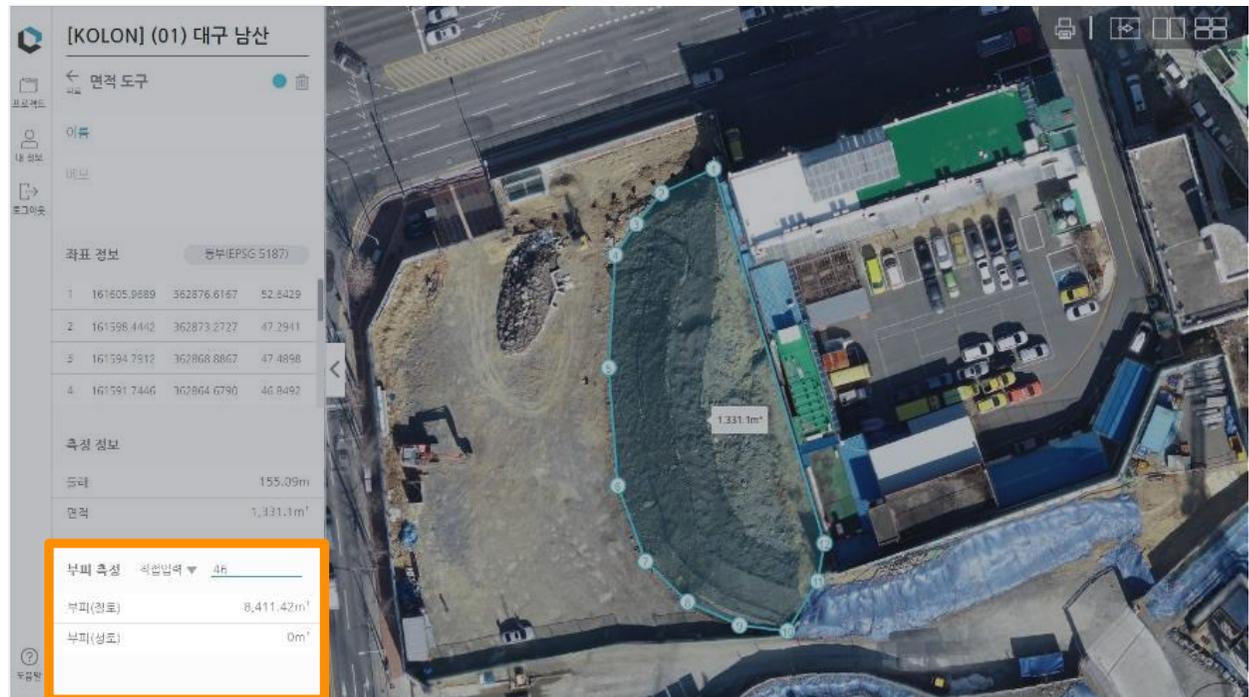
Produce section | Calculate earthworks | Check a cadastral map

Function

Automatic calculation of earthworks compared to sites' surface and design level

Effect

Check monthly earthwork progress and utilize it into quantity calculation



5. Detecting sites

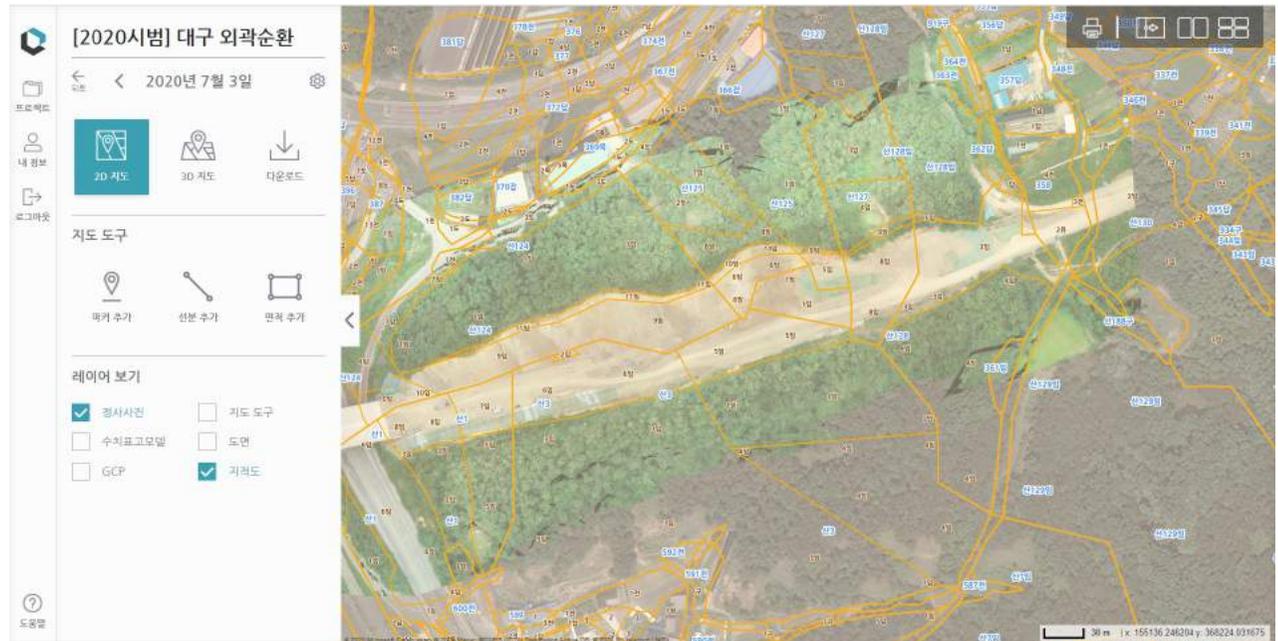
Produce section | Calculate earthworks | Check a cadastral map

Function

Check information of lots compared 2D orthophoto with cadastral maps

Effect

Check lots of construction area and prevent civil complaints and dispute area



Cases of using CARTA's service

1. The reasons to choose CARTA

Review comments of main construction companies

Core competitive edge of CARTA

2. Monitoring

Road construction site of company S

Flat construction site of company S

Earthwork site of company O

Engineering work site of company H

1. The reasons to choose CARTA

Review comments of main construction companies

포스코건설

Even we were using data analyzed via other company's engine, since it was compatible with CARTA, there was no need to hesitate to choose CARTA..

현대건설

The biggest strength of CARTA's platform might be easy and convenient UI. Plus, it was better to be able to use Pix4D engine as well.

코오롱글로벌

CARTA's understanding of drone and smart construction was the highest. When we considered digitalization of construction data in a long term, CARTA was the best partner.

대림건설

Since there is an auto flight drone application available, there is nothing much for me to learn. As the contract can be made per site, it was nice to introduce it gradually without a burden of cost.

현대엔지니어링

When we needed to use GCP via other services, it took much time and was inconvenient, but we were able to set GCP and analyze it altogether using CARTA's platform, which was very convenient.

Core competitive edge of CARTA

Filming

One and only company of providing drone controlling application in Korea

High availability/stability compared to foreign solution

Analyzing

One and only company of developing its own analyzing engine in Korea

First ever integrated data of drone + 3D scanner in Korea

Utilizing

Drone data platform specialized in construction industry

Support GCP registration, local coordinate system etc.

2. Monitoring

(1) Road construction site of Company S

* 400 hectares Phantom4 RTK filmed once in 2 weeks



Main Usage

1. Store sites' materials filmed weekly
2. Check the change of earthworks

Main Effect

1. Save time of checking sites for construction team
2. Utilize existing calculation and materials of earthworks

2. Monitoring

(2) Flat construction site of company S

* 60 hectares Phantom4 Pro filmed once in a week



Main Usage

1. Overlay floor plans, hold a meeting with split screens
2. Used as a report material for headquarters and clients

Main Effect

1. Increase convenience of meeting through intuitive materials (Orderer, constructor, affiliate)
2. Store materials for preparation of dispute in neighbor area

2. Monitoring

(3) Earthwork site of company O

* 130 hectares Phantom4 Pro filmed six times in two week



Main Usage

1. Store materials of sites
2. Calculate earthworks

Main Effect

1. Check the progress of earthwork site's excavation
2. Compare design level with current level
3. Save cost compared to existing calculation

2. Monitoring

(4) Engineering work site of company H

* 100 hectares Phantom4 Pro filmed once in a month



Main Usage

1. Check work progress
2. Check the location and compare earthworks

Main Effect

1. Intuitive management of sites
2. Reduce the number of existing calculation-save cost

Package composition and cost

Basic Package ¥ 500,000 ~

 Provide construction drone data platform of CARTA

 Provide CARTA's engine
If you need other analyzing engines, there will be extra cost

 Freely issue user accounts

 Support sites' education and technology

 Provide unlimited number of modeling

 Provide CARTA mobile

Premium Package ¥ 1,000,000 ~

 Provide Basic Package

 Can choose analyzing engines
① CARTA ② Pix4D ③ Metashape

 Provide CARTA mobile premium
Account log-in, automatic uploading

 Calculate earthworks based on design level

 Provide extra premium service

Package composition and cost

Earthworks Calculation Package

 Provide Premium Package

 Analyze earthworks and compared with design level

 Design level to present level comparison, crisscross-section and provide earthworks report

Provide CAD, Excel file form

Filming Support Package

 Provide Premium Package

 Expert's filming support
basically once in a month

 Regular GCP management

FAQ

Q How is the cost decided?

It depends on an area of a site. Our manager will answer sincerely if you make an inquiry of detailed conditions and estimates via email or **call**.

Q I have no experience on drone, can I still use it well?

If you proceed a contract, through **visiting sites** of CARTA's drone expert, there will be education regarding flight and platform. With only one day of education, you will be provided with detailed guidelines and **guide link** to use a drone easily and conveniently.

Q I have a low computer specification, can I still use it well?

Yes, you can.

CARTA's web-based drone data platform doesn't need any other extra installation. You can use it on every Internet-connected equipment, and you can also easily use software only available on high-specification computer in the past.

Q If I want to use functions that will be developed in the future, do I need to pay extra cost?

No, you don't.

Monthly subscribed model can use every function that will be developed in the future **without any extra** update and **cost**. For functions that will be added, we will provide materials if you contact us.

Top-tier construction data platform in Korea

Around 60 domestic and foreign construction sites are using CARTA's platform.

posco
포스코건설

 KOLON GLOBAL CORP.

 HYUNDAI
ENGINEERING & CONSTRUCTION

 Dongbu Corporation

 IDL Construction

 Halla 한리

 TAEYOUNG
태영건설

 Hanwha
Engineering&Construction

 KICT
KOREA INSTITUTE OF CIVIL ENGINEERING
and BUILDING TECHNOLOGY

 PIX4D

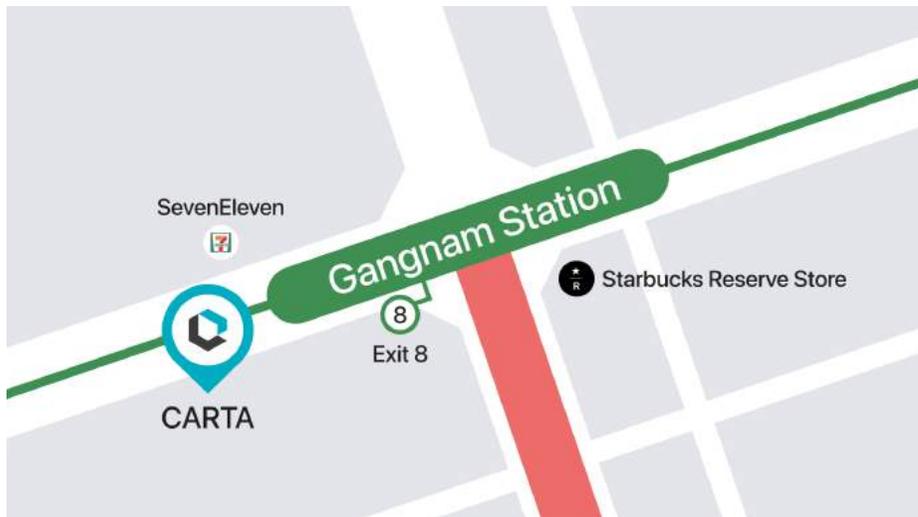
 Metashape

 ENGINEERING
COLLEGE OF ENGINEERING
SEOUL NATIONAL UNIVERSITY
서울대학교 공과대학

 Ministry of SMEs
and Startups

Many construction companies are moving forward with CARTA even now.

How to come to our office



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Smart Construction Support Center of KICT