

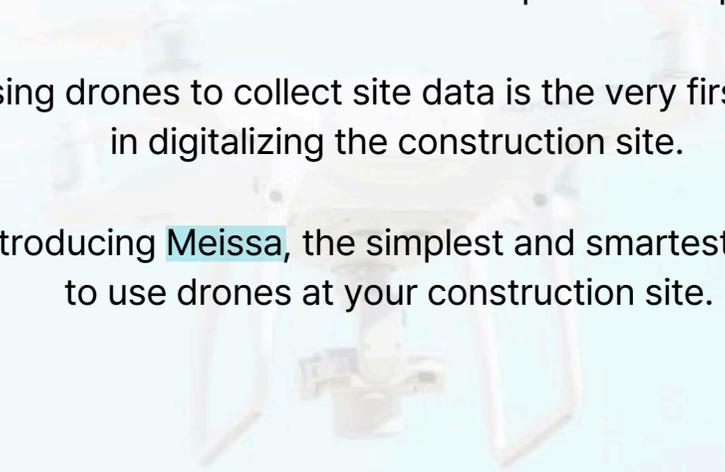
# Meissa Platform Overview

# Drones and Construction

Drones have revolutionized the acquisition of spatial data.

Using drones to collect site data is the very first step in digitalizing the construction site.

Introducing **Meissa**, the simplest and smartest way to use drones at your construction site.



# Solution Overview

Meissa provides a spatial data platform for safe and collaborative construction site management, converting your offline site into online data.

 Meissa Flight™



## Filming

Automatically create optimized flight plans for mapping

Simple, easy to use

 Meissa Engine™



## Processing

Process drone-collected images into useful data

Outputs orthomosaics, 3D meshes of the site

 Meissa Platform™



## Analysis

Facilitate site management through a variety of platform features

Remote monitoring, design plan comparison, surveying, earthwork calculation, and more

# Solution Overview

Connect site data sources (BIM, IoT, Mobile, CCTV, 360 Camera) to the Meissa platform for a fully integrated construction management experience.



# Challenges

- 1.** The construction site is vast, making it difficult for people to monitor the site themselves, and takes a lot of manpower and time.
- 2.** Construction management, checking the site processes work as designed, is often time-consuming and inefficient.
- 3.** When inspecting large sites, a lot of manpower and costs are incurred.
- 4.** When an issue occurs on the site, inefficiency and communication problems occur in the process of identifying, reporting, and taking an action on the problem.
- 5.** At the site, accidents frequently occur because it is difficult to check the real-time location of individual workers.

# Core Features

## 1. Site Data Collection & Monitoring

Autonomous Flight | 2D/3D Monitoring | Video Monitoring

## 2. Site Changes Comparison

Time-series Comparison | Site Data Management

## 3. Construction Management

Plan Overlay | BIM Integration | Cadastral Maps | 360 Panorama

## 4. Site Inspection

Cross-sectional Maps | Earthwork Calculation | Automatic Generation of Earthwork Evidence

## 5. Communication and Report Generation

Issue Management | Automatic Report Generation

## 6. Safety Management

Real-time IoT Data Collection | CCTV Streaming

# 1. Site Data Collection & Monitoring

## Construction Site Challenges

### Human-oriented on-site monitoring

It is very important to periodically understand the construction status and problems at the site.

It takes a lot of time and inefficiency for many people to visually check and record the site for regular site monitoring.



## Meissa Solutions Benefits

### Remote monitoring via drone autonomous flight



Meissa Solution allows **drone autonomous flight and filming in just a few clicks** without a professional technician.

The drone takes only 30 minutes to complete the entire site filming. After 4 hours of waiting\*, you can easily view **high-resolution 2D/3D images** in your office anytime, anywhere.

### Features

Autonomous Flight | 2D/3D Monitoring | Video Monitoring

\*The flight time and analysis time may vary depending on the size of the site

# 1. Site Data Collection & Monitoring

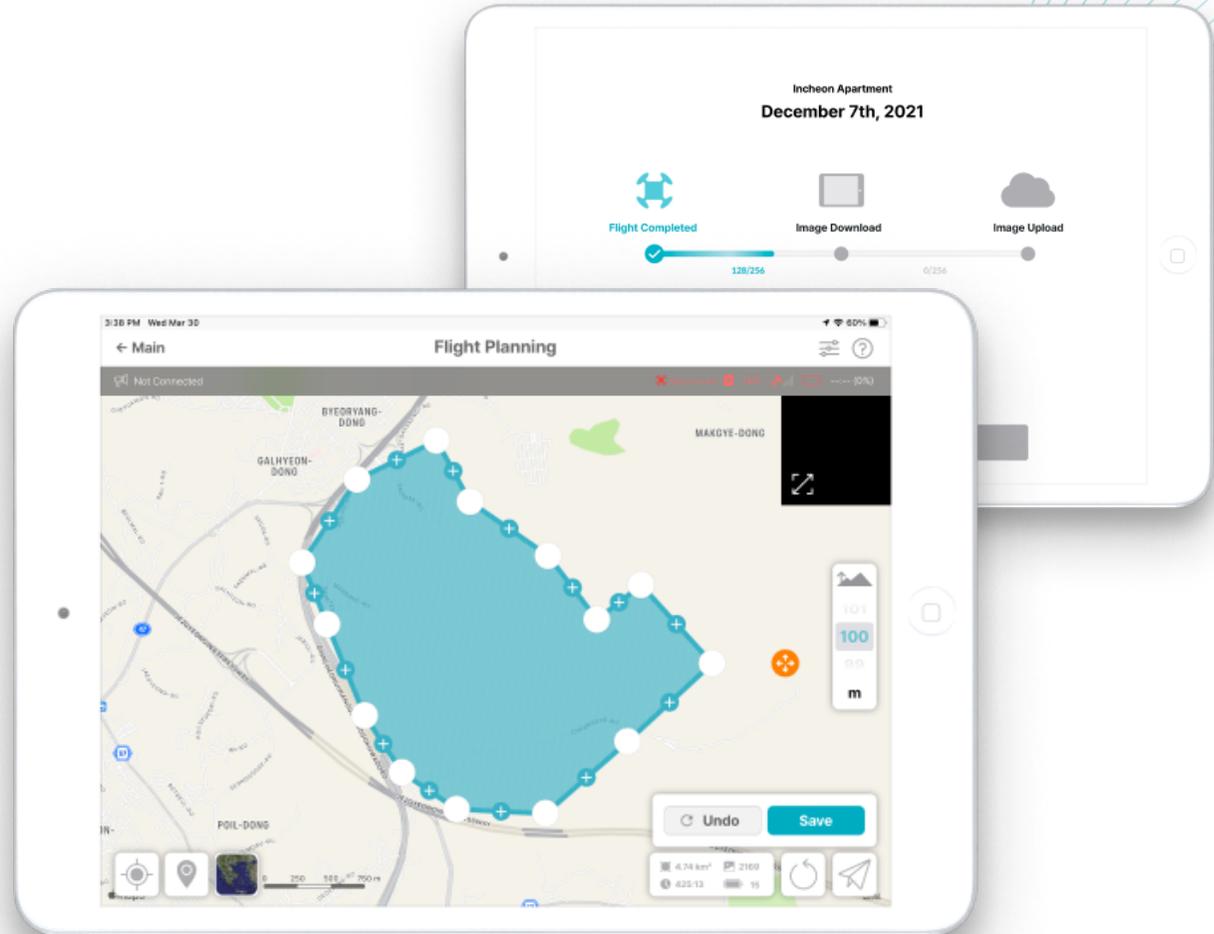
Autonomous Flight | 2D/3D Monitoring | Video Monitoring

## Feature

Create an optimized flight path for 3D mapping from your tablet and automatically upload drone-collected data to the platform

## Benefits

Anyone can easily fly drones without help from an expert



# 1. Site Data Collection & Monitoring

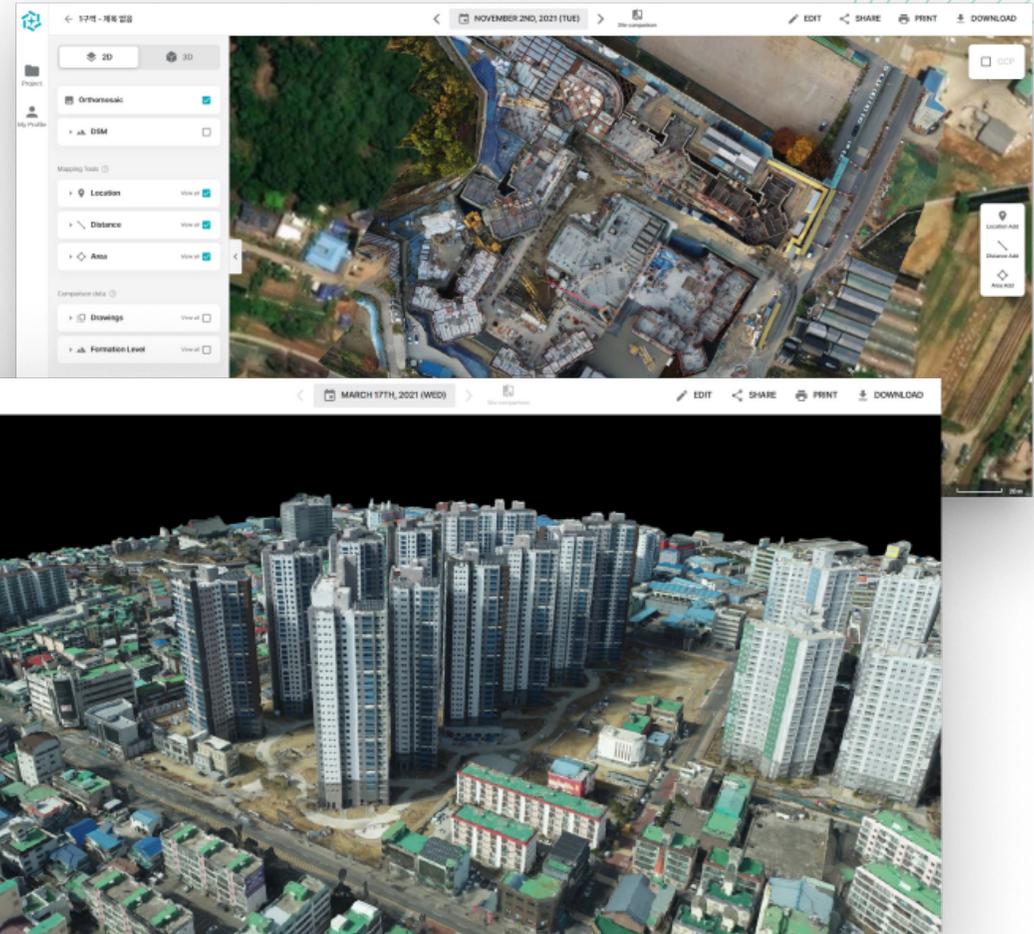
Autonomous Flight | 2D/3D Monitoring | Video Monitoring

## Feature

Up-to-date view of the construction site in 2D/3D

## Benefits

Monitor construction progress anywhere, anytime



# 1. Site Data Collection & Monitoring

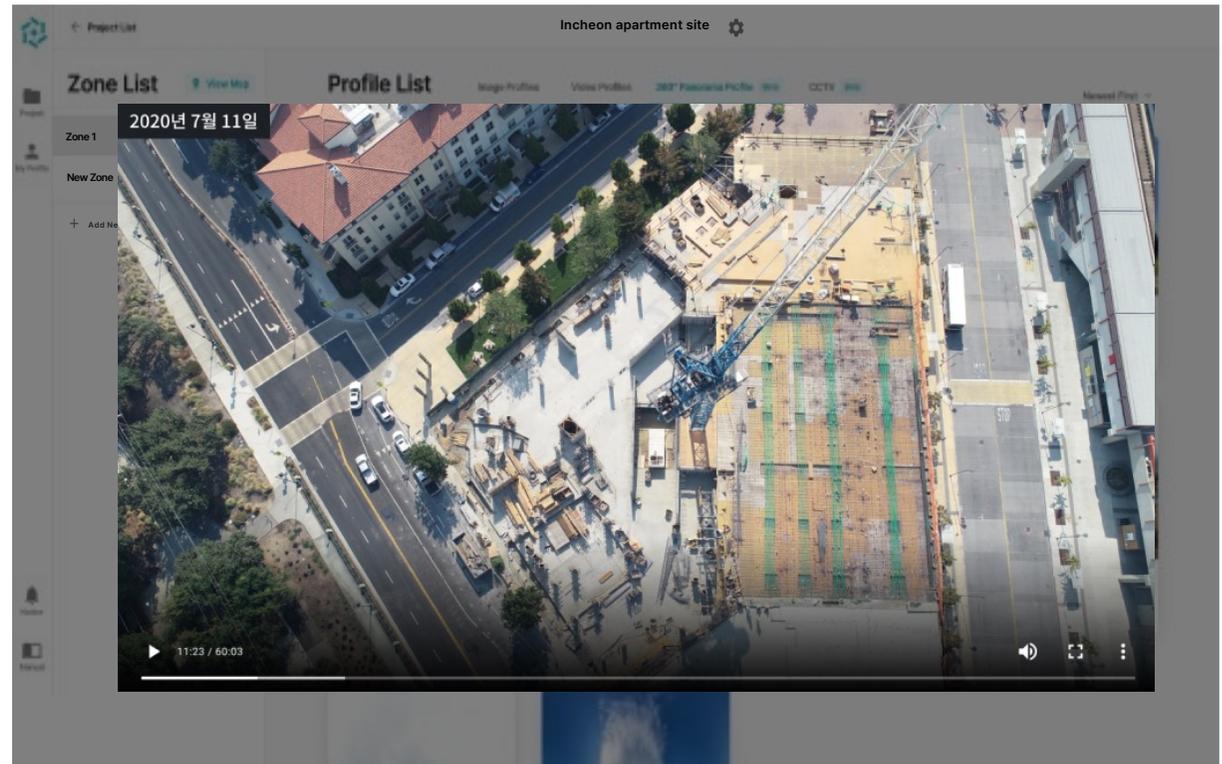
Autonomous Flight | 2D/3D Monitoring | Video Monitoring

## Feature

Easily upload / view  
drone-filmed videos  
of the construction site

## Benefits

Enables remote monitoring of site  
situation and issues via video



## 2. Site Changes Comparison

### Construction Site Challenges

People manually compare separated images by date

Do you want to compare and record changes in the site over time?

To see how the site changes over time, it is often inefficient for **people** to manually find, compare, and contrast the site's images over time.



### Meissa Solutions Benefits

Comparison of site time-series changes at different points in time on one screen



On the Meissa Platform, we take pictures of the **wide-range site with ultra-high resolution** and store them by date.

Now, check the site changes most easily and intuitively by selecting multiple shooting points you want to compare for the same site area you want to check.

#### Features

Time-series Analysis | Site Data Management

## 2. Site Changes Comparison

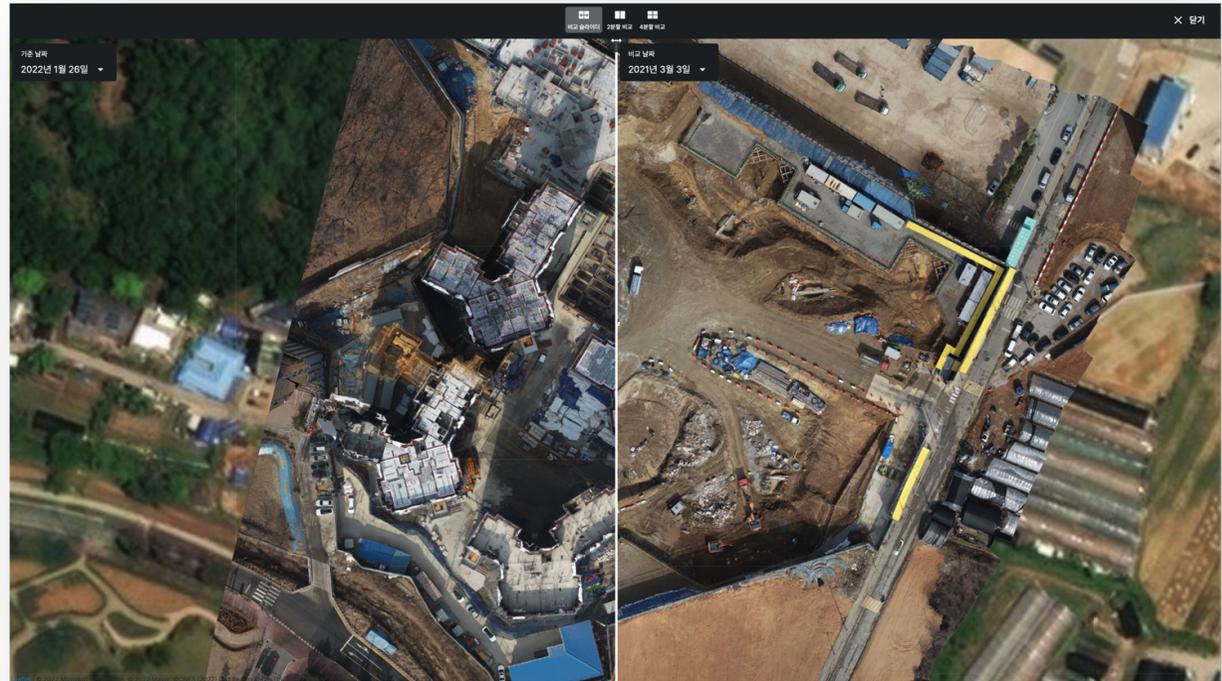
Time-series Analysis | Site Data Management

### Features

Compare images of the site from different points in time

### Benefits

Identify changes and monitor progress



# 2. Site Changes Comparison

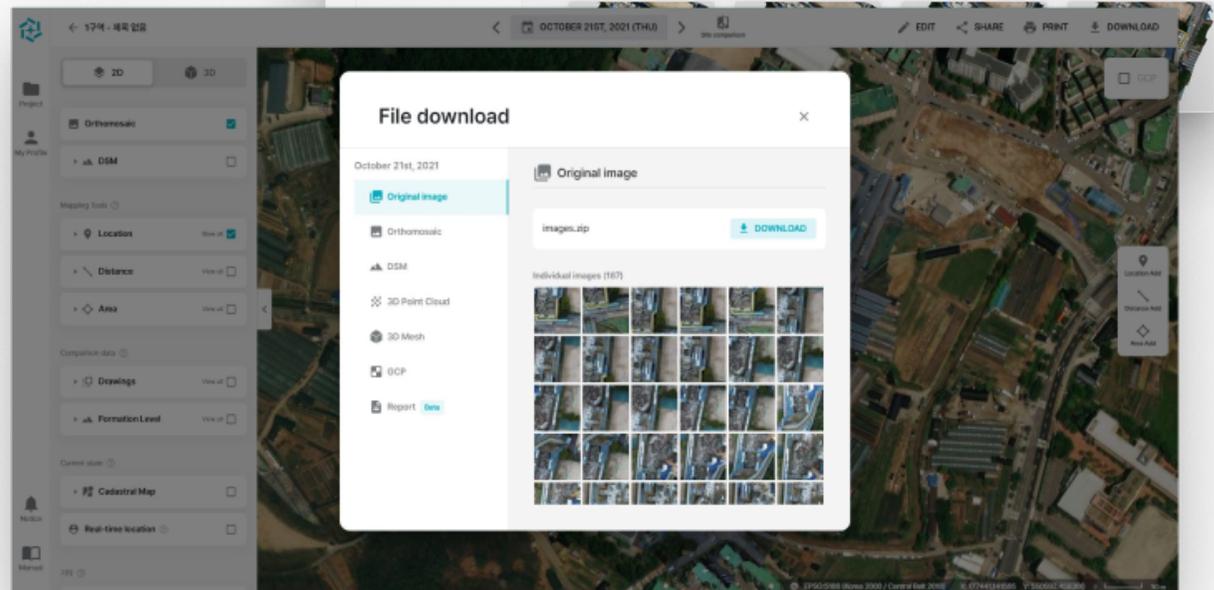
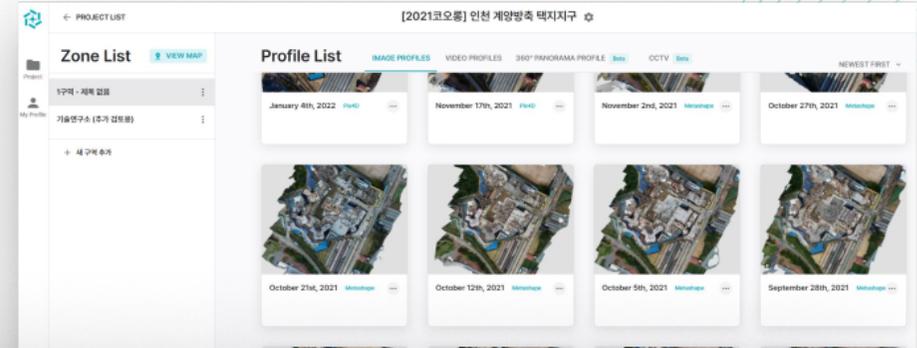
Time-series Analysis | Site Data Management

## Features

Archive and view processed, drone-collected data

## Benefits

Refer to accurate data in case of accident or dispute



# 3. Construction Management

## Construction Site Challenges

### Print Drawings- Actual Site Comparison

Progress management and site management are the core of the construction site management!

Regular construction progress checks are essential to ensure that the site process works as designed.

It takes a lot of manpower and time to visually check and compare printed drawings and actual sites.



## Meissa Solutions Benefits

### Easy construction management through plan overlay to the maps



Meissa Platform provides intuitive progress management and site management.

By overlapping various design data, such as CAD, and BIM, on the latest site map, you can quickly and accurately manage the construction.

### Features

Plan Overlay | BIM Data Utilization |  
Cadastral Maps | 360 Panorama

# 3. Construction Management

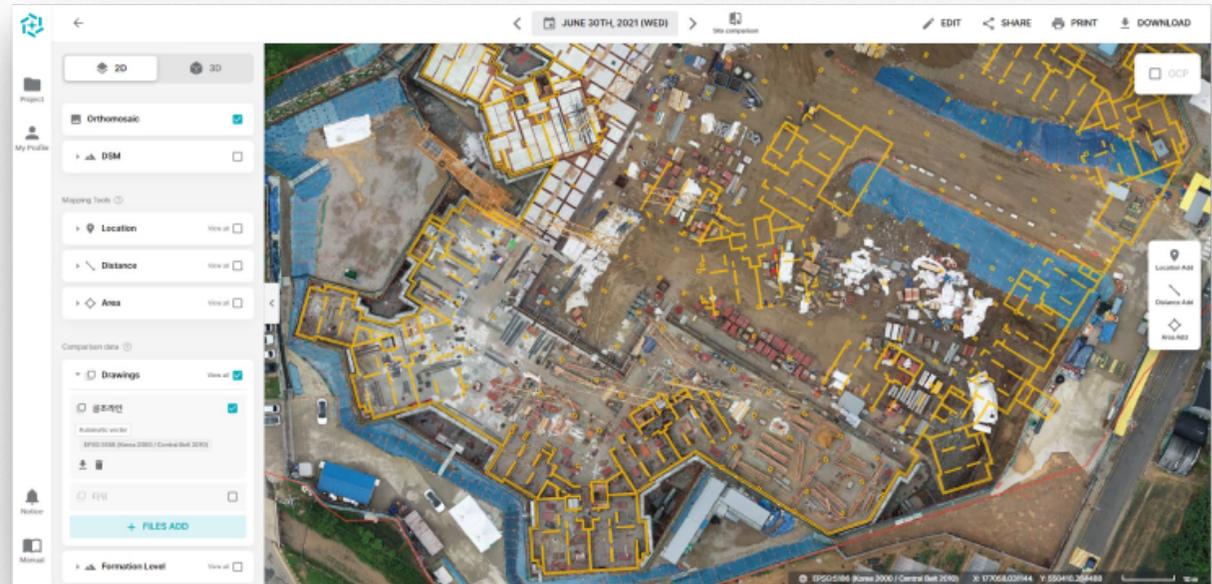
Plan Overlay | BIM Data Utilization | Cadastral Maps | 360 Panorama

## Features

Directly compare the current site to plans based on accurate coordinates

## Benefits

Quickly detect errors in construction



# 3. Construction Management

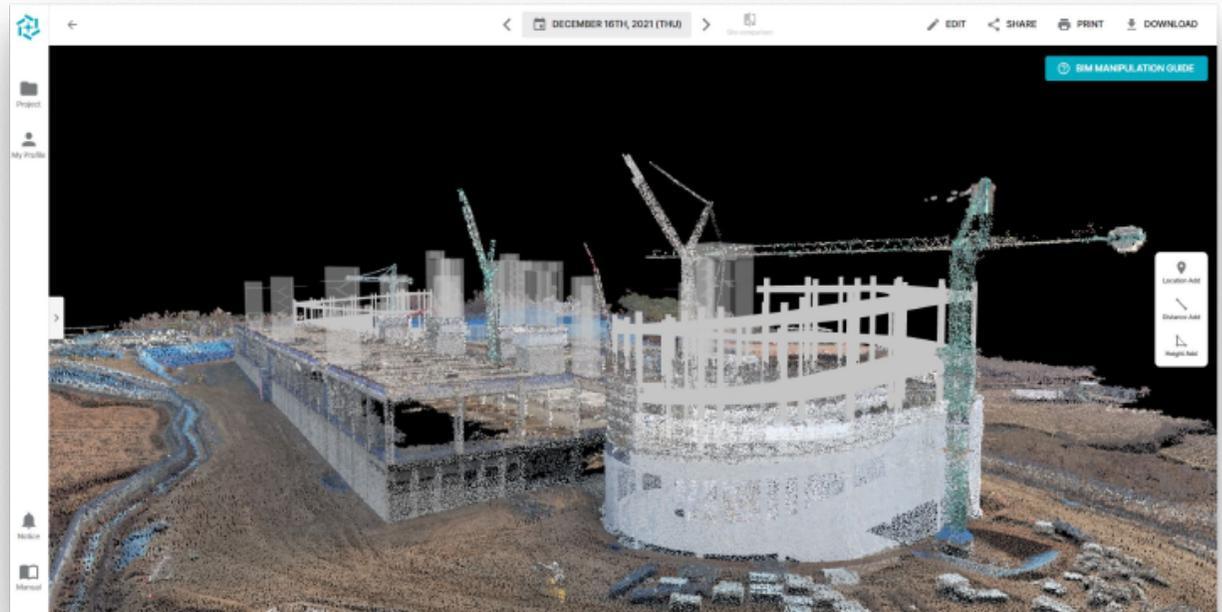
Plan Overlay | BIM Data Utilization | Cadastral Maps | 360 Panorama

## Features

View BIM files on the platform and compare to 3D models of the site

## Benefits

Inspect construction errors and progress



# 3. Construction Management

Plan Overlay | BIM Data Utilization | Cadastral Maps | 360 Panorama

## Features

Compare orthomosaics to cadastral maps

## Benefits

View parcel data of the construction site to prevent complaints or disputes



# 3. Construction Management

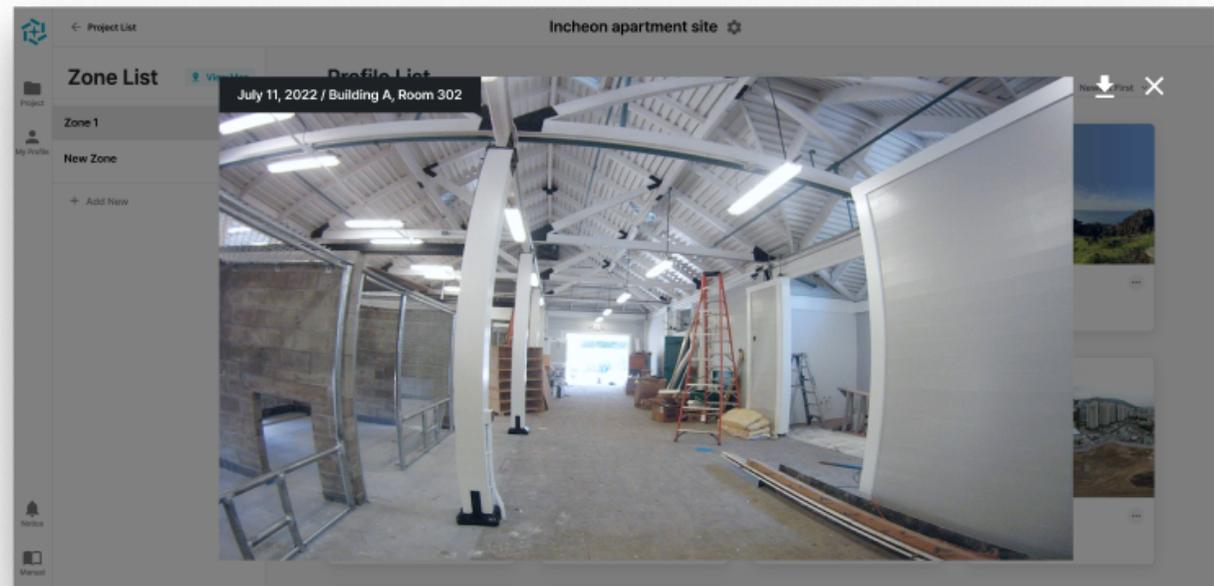
Plan Overlay | BIM Data Utilization | Cadastral Maps | 360 Panorama

## Features

Integrate and view 360 camera imagery on the platform

## Benefits

Manage indoor construction progress  
Complement outdoor data collected via drones



# 4. Site Inspection

## Construction Site Challenges

Large site surveys require a lot of manpower and money

Surveys are often required at construction sites.

It requires a lot of labor and expensive equipment, and **the time required was about 4 hours** (based on 100ha).

Many errors occur due to the limitations of manual work, especially when surveying at a large site.



## Meissa Solutions Benefits

With 90% savings and time, accurate on-site inspection of errors less than 6cm



Based on data collected by drones, check the accurate survey results with a few clicks on the Meissa Platform.

Meissa enables more accurate site inspection with **errors less than 2cm of the x and y-axes and 6cm of the z-axis.**

### Features

Cross-sectional Maps | Earthwork Calculation | Automatic Generation of Earthwork Evidence

# 4. Site Inspection

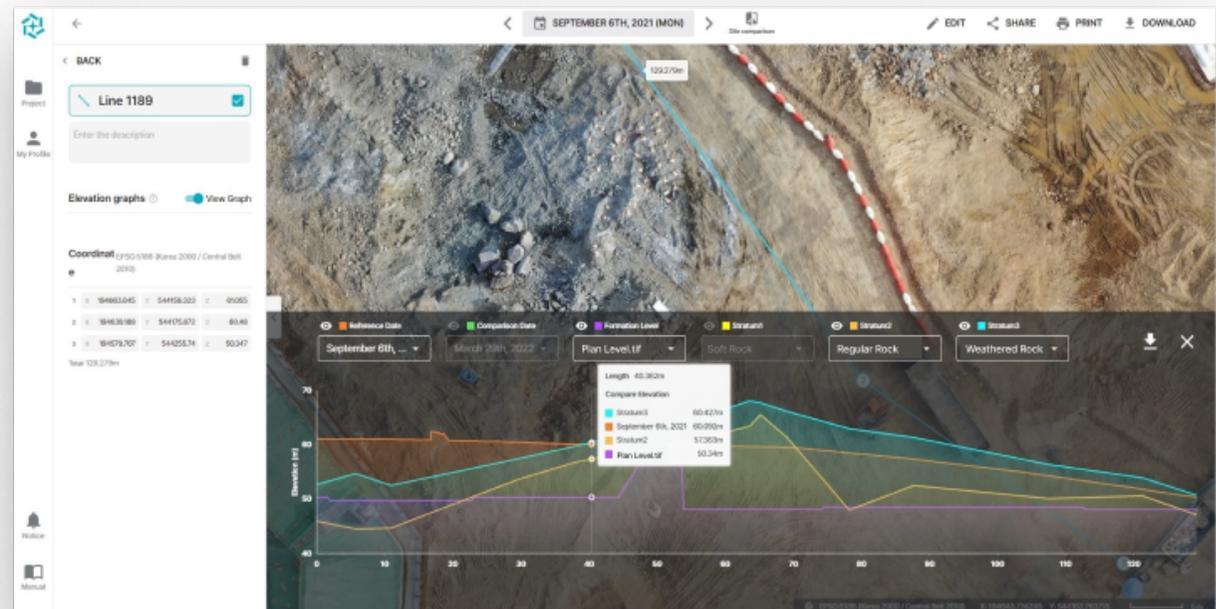
Cross-sectional Maps | Earthwork Calculation | Automatic Generation of Earthwork Evidence

## Features

Instantly create cross-sectional maps of selected segments

## Benefits

Compare differences from design plans to inspect for errors



# 4. Site Inspection

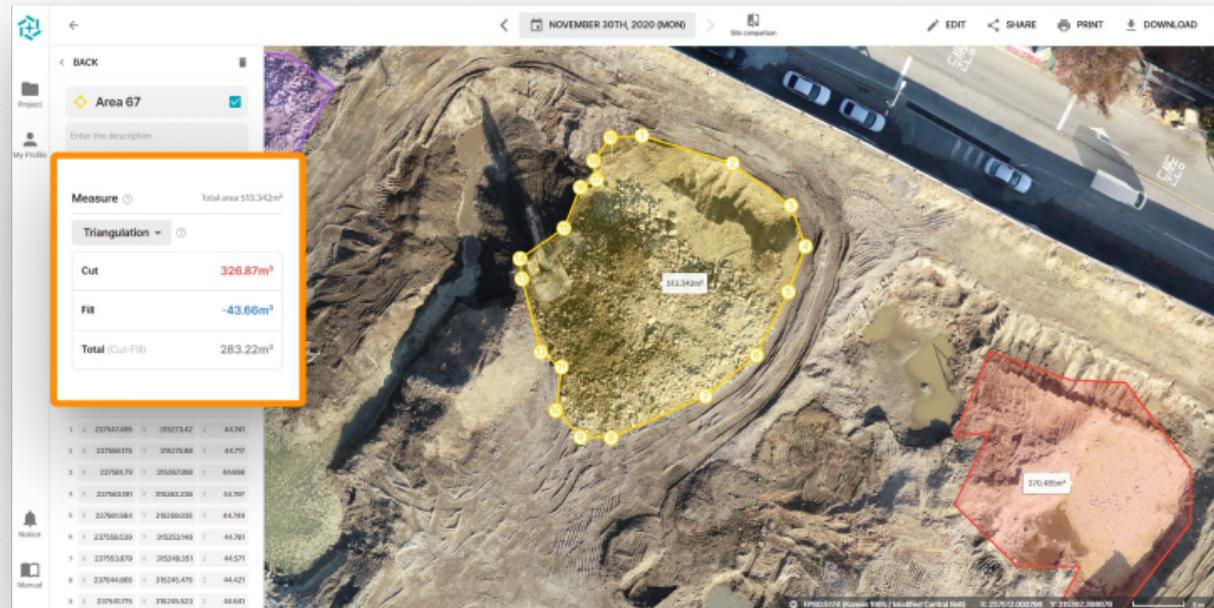
Cross-sectional Maps | Earthwork Calculation | Automatic Generation of Earthwork Evidence

## Features

Automated earthwork calculation based on current surface and design plans

## Benefits

Track monthly earthwork progress and calculate earthwork volume



# 4. Site Inspection

Cross-sectional Maps | Earthwork Calculation | Automatic Generation of Earthwork Evidence

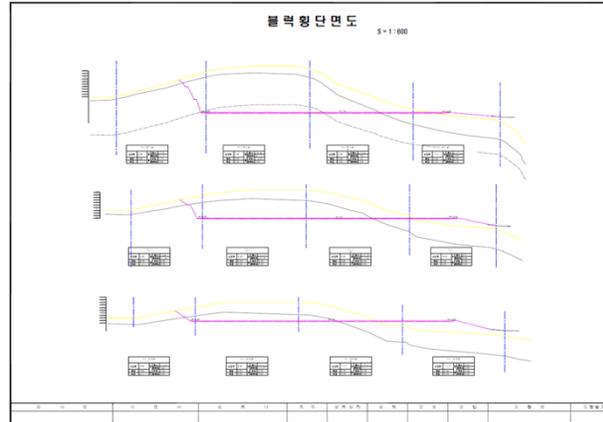
\*Additional Products

## Features

A system that automatically generates a cross-sectional view (CAD), an earthwork table (Excel), and earthwork report (PDF) related to earthwork calculation and periodically calculates earthwork progress

## Benefits

Reduce the time and cost of calculating earthwork, and provide automatic periodic calculation and reporting while maintaining your existing practice



Cross-sectional view (CAD)



Monthly earthworks progress report (PDF)

기준 날짜	2020-12-08	구점	거리 (m)	정토													
				토사			연암			기반암			절토계 (다짐상 태) m³	정토			
				면적 (m²)	입력 (m³)	다짐 (m³)	면적 (m²)	입력 (m³)	다짐 (m³)	면적 (m²)	입력 (m³)	다짐 (m³)		면적 (m²)	입력 (m³)		
no. 0	-	40	-	-	-	-	-	-	-	-	-	-	-	-	477	345	3,859
no. 0+8.62	9	70	477	477	-	-	-	-	-	-	-	-	-	-	539	253	3,401
no. 1	11	77	859	859	-	-	-	-	-	-	-	-	-	-	1,116	153	2,032
no. 1+10.00	10	51	642	642	95	474	332	-	-	-	-	-	-	-	1,910	61	1,074
no. 2	10	36	438	438	200	1,472	1,030	-	-	-	-	-	-	-	4,727	31	574
no. 2+12.46	12	19	345	345	384	3,701	2,590	109	681	618	1,092	963	4,396	33	249		
no. 3	5	27	175	175	453	3,119	2,153	150	1,092	963	4,396	33	249	-	-	-	
no. 3+5.94	6	66	277	277	438	2,585	1,810	345	1,263	1,137	4,126	28	181	-	-	-	
no. 3+15.35	9	66	621	621	459	4,219	2,953	327	2,692	2,422	7,531	16	205	-	-	-	
no. 4	5	58	288	288	538	2,319	1,623	248	1,387	1,208	3,944	12	85	-	-	-	
no. 4+5.28	8	33	373	373	594	4,959	3,262	122	1,532	1,376	6,594	30	175	-	-	-	
no. 4+11.87	3	11	74	74	545	1,951	1,351	79	339	305	2,344	95	144	-	-	-	
no. 4+16.87	5	15	69	69	54	1,556	1,059	-	203	153	1,828	51	275	-	-	-	
합계		670	4,618	4,618	3,750	26,064	18,245	1,310	9,199	8,225	39,821	1,619	12,224	-	-	-	

Cross-sectional chart (Excel)

\*Details can be found in the product guide of the 'earthwork package overview' and will be provided separately if necessary

# 5. Communication and Report Generation

## Construction Site Challenges

Inefficient communication and reporting

Fast and accurate communication between key stakeholders and practitioners on the site is critical.

Existing non-integrated communication channels and various forms of reporting are time-consuming and inefficient.



## Meissa Solutions Benefits

Communicate with stakeholders on the latest map and generate automatic reports



Write issues/actions immediately and communicate quickly with relevant people on the latest on-site maps within the Meissa platform.

If necessary, reports can be automatically generated with just 1 click.

### Features

Issue Management | Automatic Report Generation

# 5. Communication and Report Generation

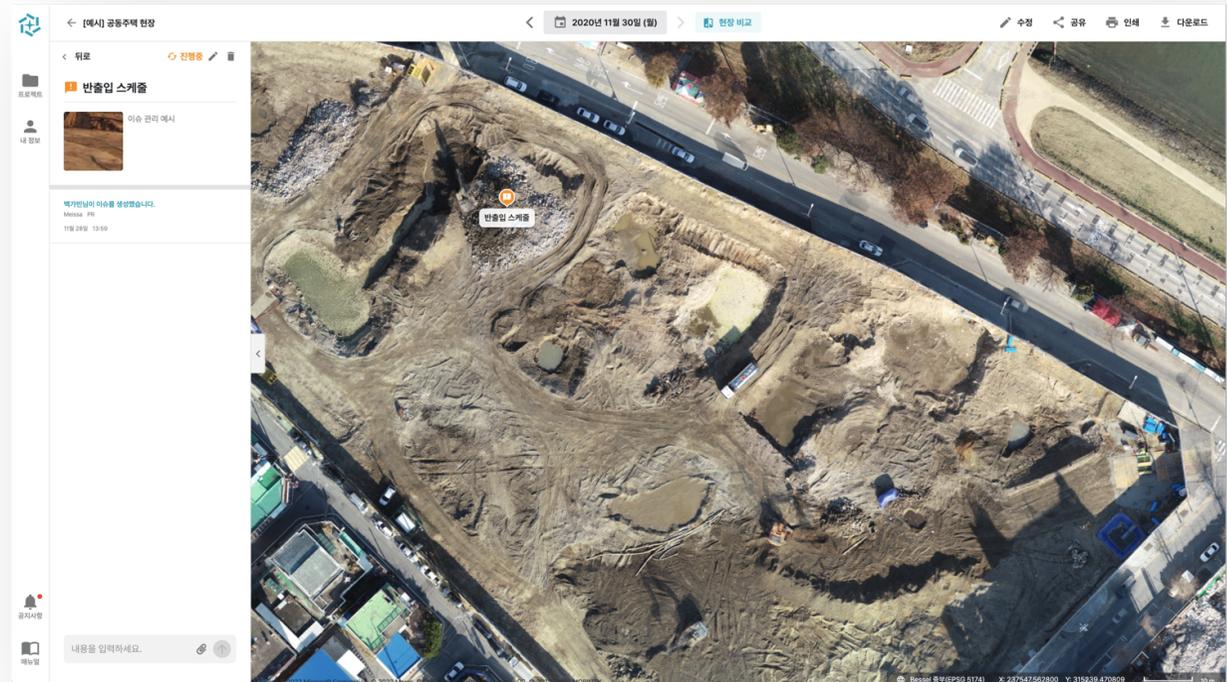
Issue Management | Automatic Report Generation

## Features

Create a location tool at the desired point and write issues and actions

## Benefits

Write immediate notes on issues/actions on site and communicate efficiently through a unified channel



# 5. Communication and Report Generation

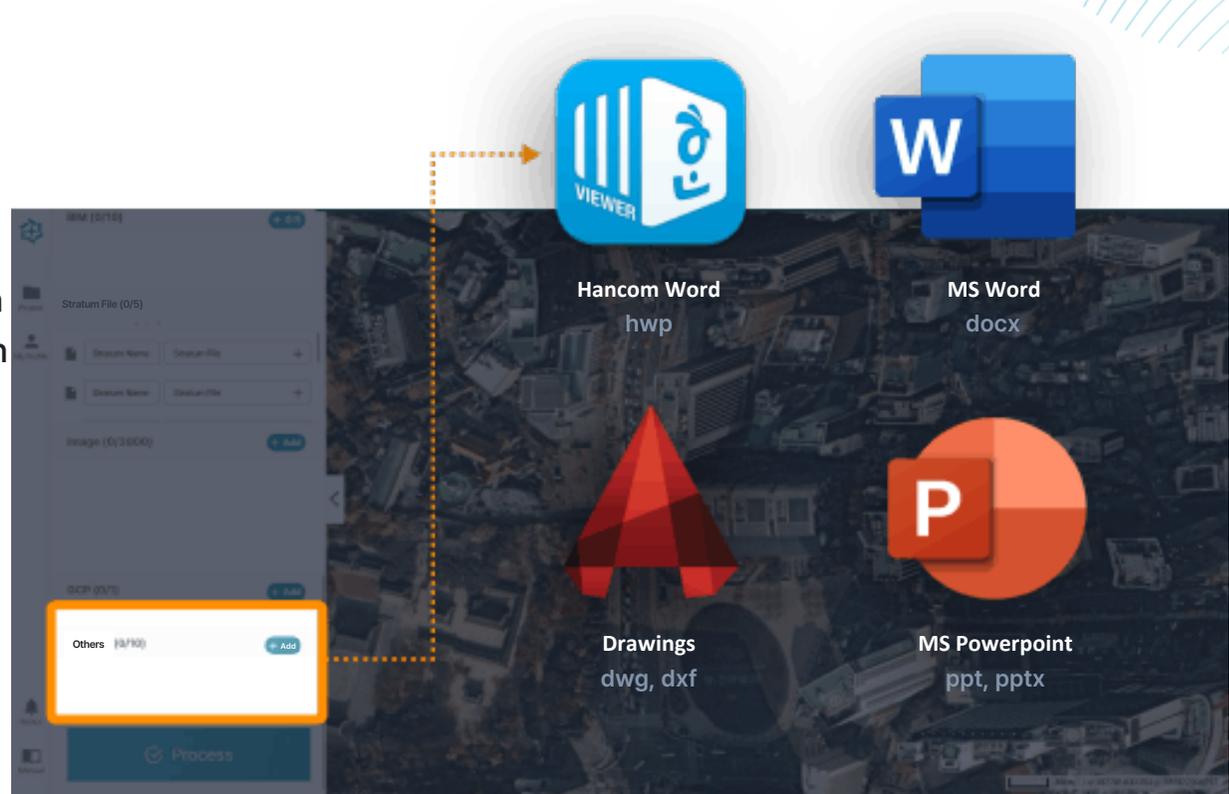
Issue Management | Automatic Report Generation

## Features

Automatic generation of 'Map Tool Report' and 'Intellectual Compensation Status Report' that provide information on cross-sectional, earthwork volume and compensation status

## Benefits

Reduce the time and manpower required to create manual reports



# 6. Safety Management

## Construction Site Challenges

Difficulty in managing worker safety

Safety management of workers is the most important part in construction sites that has various hazards.

It is difficult to check the real-time location of individual workers on a large site, and it is difficult for the manager in charge to know on time when workers enter dangerous areas.



## Meissa Solutions Benefits

### Real-time location-based safety management



Meissa Platform provides efficient safety management.

Check the real-time location of workers and equipment to manage safety more efficiently and prevent any accidents in advance by receiving notifications from the Meissa platform when workers enter dangerous areas.

### Features

Real-time IoT Data Collection | CCTV Streaming | 360 Panorama

# 6. Safety Management

Real-time IoT Data Collection | CCTV Streaming

## Features

View current locations and movement of on-site personnel and equipment using Meissa's mobile app

## Benefits

Prevent safety accidents through real-time, remote monitoring



# 6. Safety Management

Real-time IoT Data Collection | CCTV Streaming

## Features

View real-time CCTV imagery streamed through the platform

## Benefits

Monitor CCTV imagery anywhere, anytime  
Quickly respond to safety issues





# Meissa Use Cases

## 1. Why Meissa

Quotes / Strengths

## 2. Customer Success Story

Hyundai Engineering - Industrial Complex Construction Site

HDC Hyundai Development Company - Highway Construction Site

Daewoo E&C - Housing Construction Site

# 1. Why Meissa

## Quotes

**posco**  
포스코건설

“ We first chose Meissa because their platform integrated with the processing engine we were originally using. Evaluating the performance of Meissa’s own engine, our trust in their technology has grown. ”

**현대건설**

“ The biggest strength of Meissa’s platform is its intuitive user interface. The initial learning curve has always been a concern when introducing new solutions. Meissa’s solution, on the other hand, was easy to learn and use right away. ”

**코오롱글로벌(주)**

“ Meissa had the highest level of expertise in drones and smart construction. They were the most suitable choice for a long-term partnership. ”

**IDL Construction**

“ We didn’t need much training thanks to the autonomous flight app. Meissa was also very flexible with contracts, so we were able to gradually introduce the solution to more of our sites. ”

**HDC 현대산업개발**

“ We figured that Meissa had a good understanding of the construction site based on the new features that were constantly updated on the platform. ”

## Strengths

Filming

**Autonomous drone flight application**

Optimized flight control for 3D mapping  
Reliable and easy to use

Processing

**Proprietary photogrammetry engine**

State-of-the-art 3D mapping technology  
Dedicated team of photogrammetry experts

Usage

**Solution specialized for construction**

GCP marking, local coordinates,  
BIM integration, IoT based safety solutions

# 2. Customer Success Story

## (1) Hyundai Engineering - Industrial Complex Construction Site



“  
**Meissa’s Earthwork solution allowed us to calculate earthwork much faster at lower costs, all the while maintaining our original workflow.**  
 ”

### Challenge and Solution

Hyundai Engineering sought an alternative method to traditional earthwork calculation, which was too costly and time-consuming. Using Meissa's solutions, they were able to receive a full report on earthwork progress, including cross-sections(CAD) and earthwork volume tables(Excel), within 2 days of mapping.

### Benefits

- 90% time / cost reduction for earthwork calculation
- Monthly earthwork progress reports shared to stakeholders

### Site Details

Area: 300,000m<sup>2</sup>  
 Characteristics: Had 70% earthwork, large rock mass area  
 Drone Used: DJI Phantom 4 Pro V2.0  
 Filming Frequency: Monthly (60 min)

## 2. Customer Success Story

### (2) HDC Hyundai Development Company - Highway Construction Site



“ We were able to easily compare plans against actual progress. The best part was that everything could be done remotely, without having to visit the site. ”

#### Site Details

Area: 4.11 km (excluding the tunnel length)  
Characteristics: Earthwork length of 2.1km  
Drone Used: DJI Phantom 4 Pro V2.0  
Filming Frequency: Bi-Weekly (90 min)

#### Challenge and Solution

HDC implemented Meissa's solutions seeking to complement the limitations of physically monitoring a large construction site area. They utilized the platform heavily for construction progress management through cross-section views, design plan overlays, and cadastral maps.

#### Benefits

33% reduction of on-site monitoring man-hours

Accurate and intuitive comparison and monitoring of the construction progress

Easy tracking and management of land compensation on the platform

## 2. Customer Success Story

### (3) Daewoo E&C - Housing Construction Site



#### Site Details

Area: 47,000m<sup>2</sup>

Characteristics: Construction site for 10 apartment buildings

Drone Used: DJI Mavic 2 Pro

Filming Frequency: Weekly (15 min)

“

We acknowledged the true value of the solution when we identified actionable errors through the platform, which could have otherwise caused a major delay of the entire project.

”

#### Challenge and Solution

Site managers at Daewoo E&C were in need of a tool to better monitor the site and share progress with stakeholders. Meissa's platform was displayed as base data at managerial meetings and used to inspect errors in actual construction against design plans.

#### Benefits

Quickly detected the mislocation of a pile driver, preventing potential delays and additional costs

Enhanced communication efficiency among stakeholders

# Pricing

## Basic

To be Released

Lightweight, affordable package for simple drone usage

For those who want to try out drones to film / archive the site. For those who fly own drones and want to experience / evaluate the basic features of the platform

- ★ All basic features included (mapping, orthomosaics, 3D models)
- ★ Minimal, essential features for site digitalization
- ★ Technical support, on-site training, e-mail/phone support not included

- ✓ Autonomous drone mapping
- ✓ 360 panorama image creation
- ✓ 2D orthomosaic and 3D model creation
- ✓ Time series analysis

\* Surveying and earthwork calculation features not included

## Pro

Available

The required package for professional drone usage at the construction site

For those who seek to fully utilize the platform's features for efficient site management  
For those who would like to save time and expenses spent on surveying and earthwork calculation

- ★ Additional management features including automatic earthwork calculation, elevation mapcreation, coordinate-based design plan overlay
- ★ Advanced platform features for optimized site management
- ★ On-site technical support, e-mail/phone support included

- ✓ Includes all features from the Basic package
- ✓ Surveying and earthwork calculation
- ✓ Coordinate-based design plan overlay
- ✓ Automatic elevation map creation
- ✓ Coordinate-based BIM model view and overlay

## Premium

To be Released

All-in-One package for a fully integrated, smart construction tech based site management program

For those who seek to centralize management of various smart construction tech in one platform  
For those who plan to establish a smart construction management system incorporating safety management

- ★ Integrated platform for all construction site data (drone, BIM, IoT, CCTV, 360 camera)
- ★ Advanced solutions including safety management
- ★ On-site technical support, e-mail/phone support included
- ✓ Includes all featrues from the Pro package
- ✓ Integrated dashboard (construction progress, location tracking, CCTV streaming, etc)
- ✓ Real-time location based IoT/mobile safety solution
- ✓ Regular updates of new management features

# Frequently Asked Questions **FAQ**

## **Q How is pricing determined?**

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Pricing varies depending on site condition.

Contact us via email or phone for further details or quotes.

## **Q Is experience with drones require to use your solution?**

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No. A drone expert from Meissa will visit your site and provide training on drone flight and platform usage.

A one-day training session is all you need to easily fly drones and map your site. We also provide written guides.

## **Q Can I use your solution without a high-end PC?**

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Yes. Meissa's web-based drone data platform is accessible from any device connected to internet, without installation.

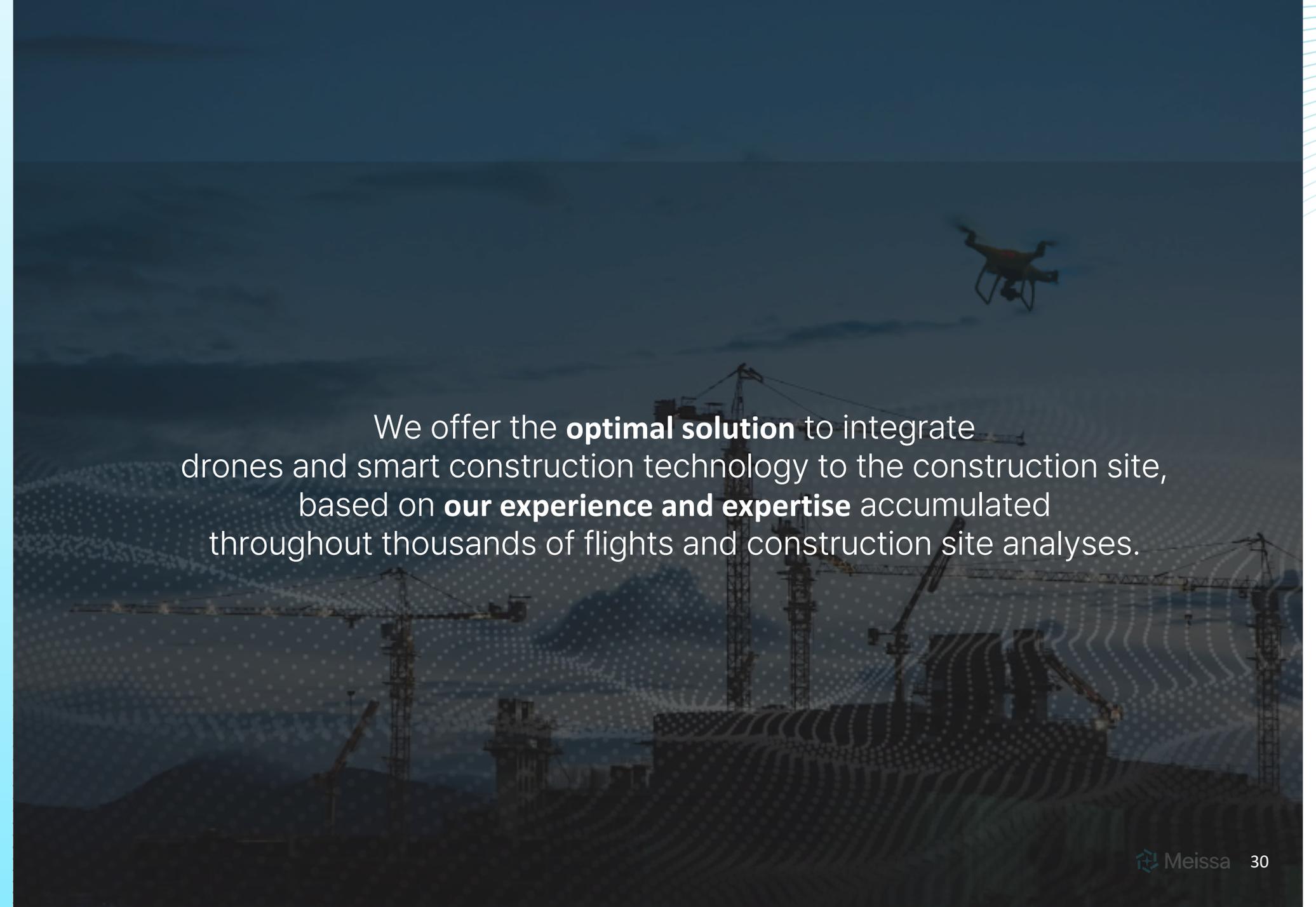
It allows you to easily utilize software that originally requires high-end specifications.

## **Q Who should consider using your solution?**

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Meissa's solution is used in architecture/civil engineering/plant sites by various parties including public entities, CM/PMs, general contractors, developers, constructors, designers, inspectors, surveyors, and research firms.

Our monthly pricing structure allows you to flexibly utilize any features needed throughout the entire construction process, from design to post-production.



We offer the **optimal solution** to integrate drones and smart construction technology to the construction site, based on **our experience and expertise** accumulated throughout thousands of flights and construction site analyses.

# The No.1 construction data platform in Korea

Over 90 construction sites around the world are using Meissa's solutions.



# Begin your smart construction journey with Meissa

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**CEO** YoungHun Kim

**E-mail** info@meissa.ai

**Website** www.meissa.ai

**Company  
Registration  
Number** 276-87-00796

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headquarters** 70, Bongeunsa-ro 18-gil, Gangnam-gu, Seoul,  
Republic of Korea

**Address of  
laboratory** 283, Goyang-daero, Ilsanseo-gu, Goyang-si,  
Gyeonggi-do  
Smart Construction Support Center of KICT

How to come to our office

