

CONWORTH ENGINE 3D SOLUTION



C-EAGLE

R-EAGLE

T-EAGLE

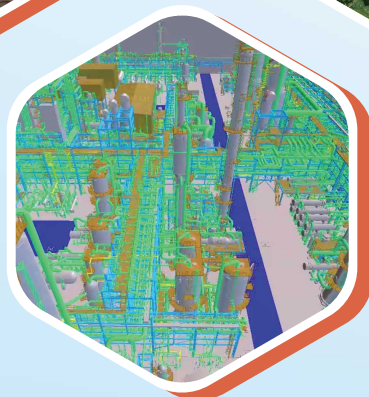
H-EAGLE

[HTTPS://CONWORTH.IO](https://conworth.io)

Conworth offers unprecedented 3D solutions



Founded in 2020, Conworth, along with its highly skilled members, has developed Conworth Engine based on server and graphics technology. Operating under the slogan 'unprecedented 3D solutions' we provide solutions in the AEC, Asset Management, Smart City, and Contents sectors. Beyond the current domains, target markets will be expanded into various fields such as Real Estate, Mobility, Retail and Satellite imagery data.



PROBLEMS & SOLUTIONS

Conworth offers a range of 3D technologies powered by the Conworth Engine the clients facing challenges in implementing 3D solutions.



Massive Computing

Due to limitations in computing power, manual consistency reviews of 3D construction designs are still required.

#Infra

#PCD

#BIM

#Consistency review

#Plant

#Architecture

Quality Rendering

Most companies still use 2D-based solutions for facility and site management due to limitations in real-time 3D rendering quality.

Construction

#FM

#Immersive Contents

DX

#Asset Management

Extensive Data Size

Due to the acquisition of massive 3D data, most institutions have hard time to share and visualize the extensive 3D data to the clients.

#Government / Public

#Smart City

#GIS

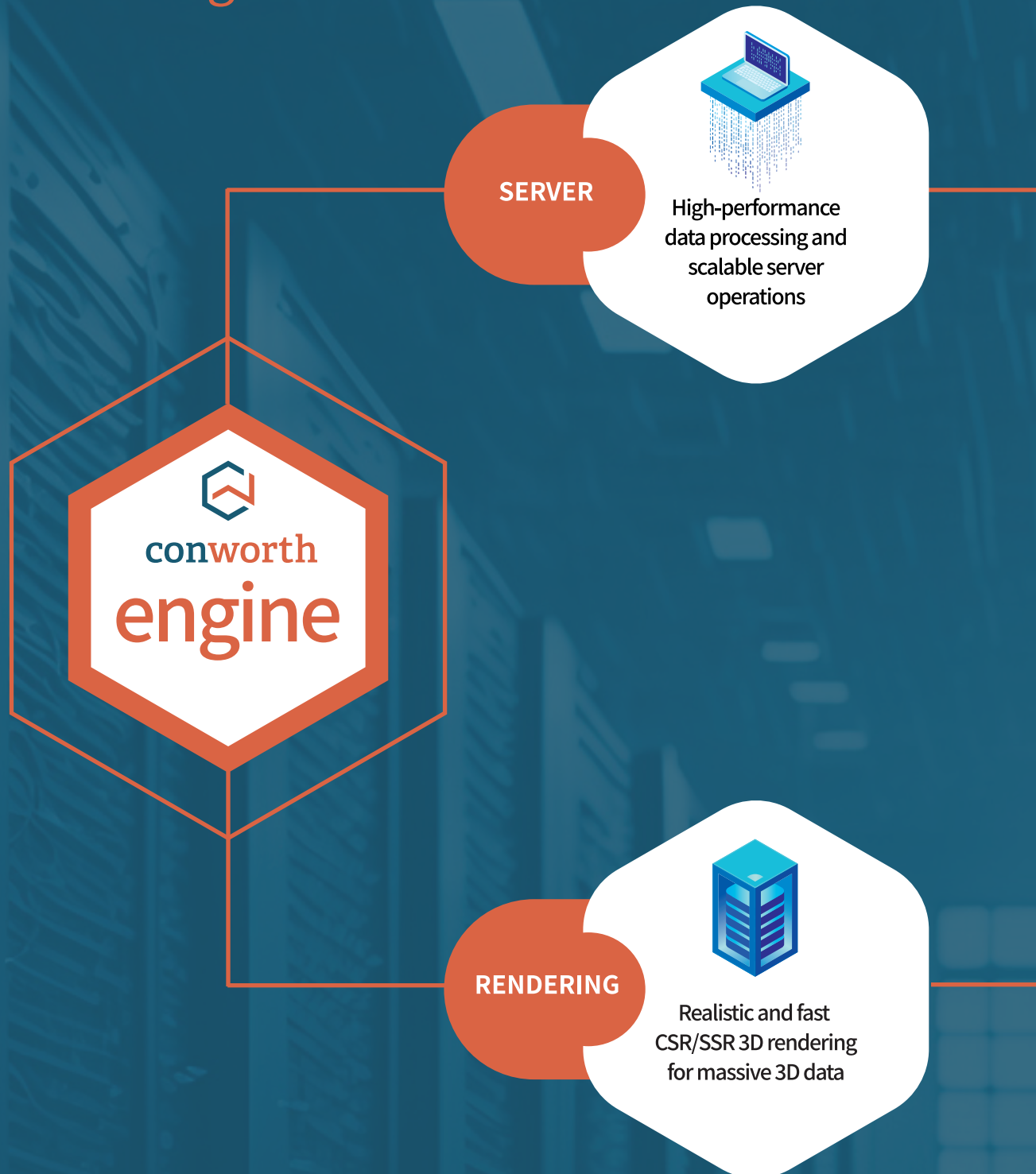
#FCM

#Asset Management

#3D Map

#PCD

The Conworth Engine enables efficient **server operations** and facilitates effective **3D rendering**



Conworth's exclusive server cluster and graphics technology powers an advanced 3D engine, delivering unparalleled solutions for various industries with eight key processing and virtualization features.



Multi-core Processing
Massive Computing



Web/App Approach
Accessible from anywhere

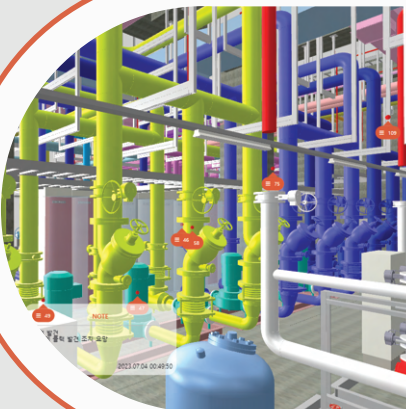


Local Cloud Approach
Data security solution



Distributed File/Server
Scalable/competitive price

Efficient server operation
Effective 3D rendering



Indoor/Outdoor Full 3D
Seamless 3D integration



3D File Format Handling
Various 3D data management



Exceptional Graphic Quality
Beyond present limits



CSR/SSR Selection
Various device support



OUR SOLUTIONS

C-Eagle

3D Data Platform for Site Management



Conworth 3D Note
Location-based 3D Collaboration Tool



3D Consistency Review
Consistency inspection for Scanned(As-Is) vs. BIM



R-Eagle

3D Asset Management with Robot and IoT



T-Eagle

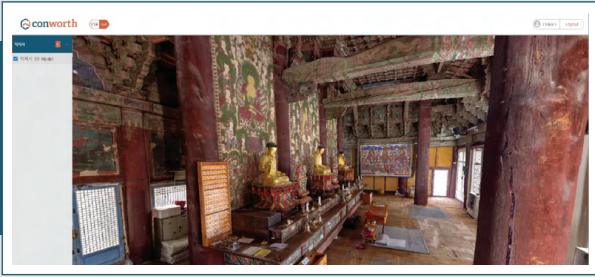
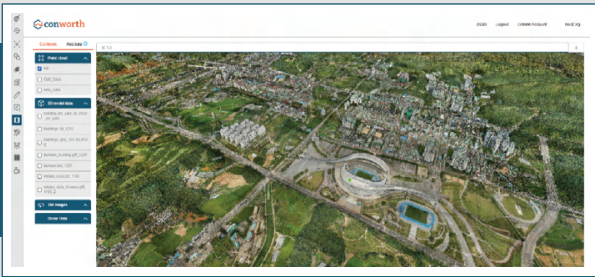
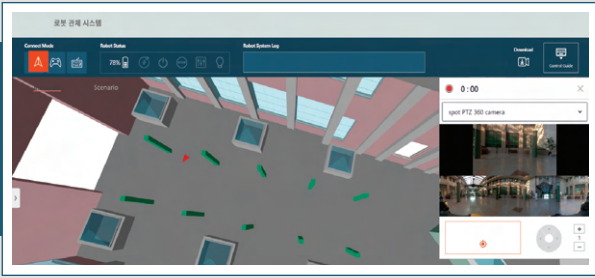
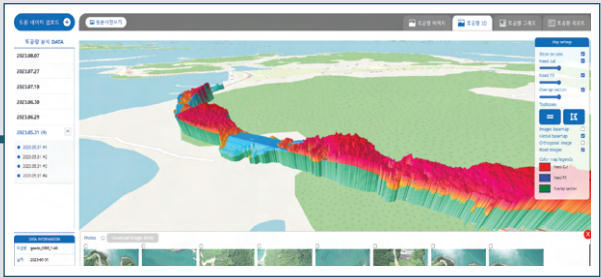
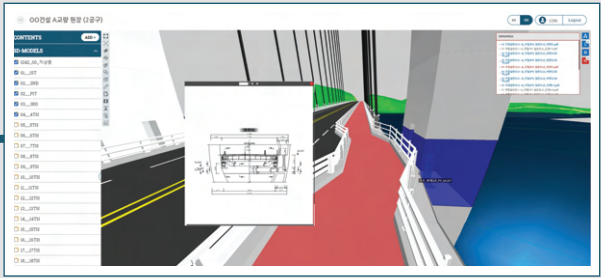
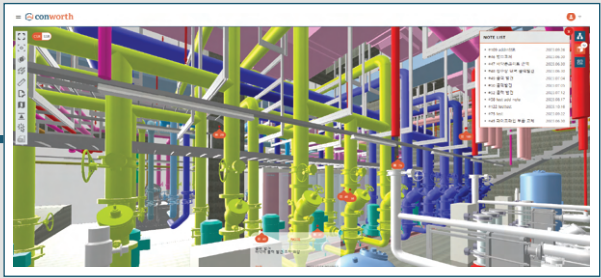
City-scale 3D Data Visualization



H-Eagle

Immersive 3D Visualization





C-EAGLE

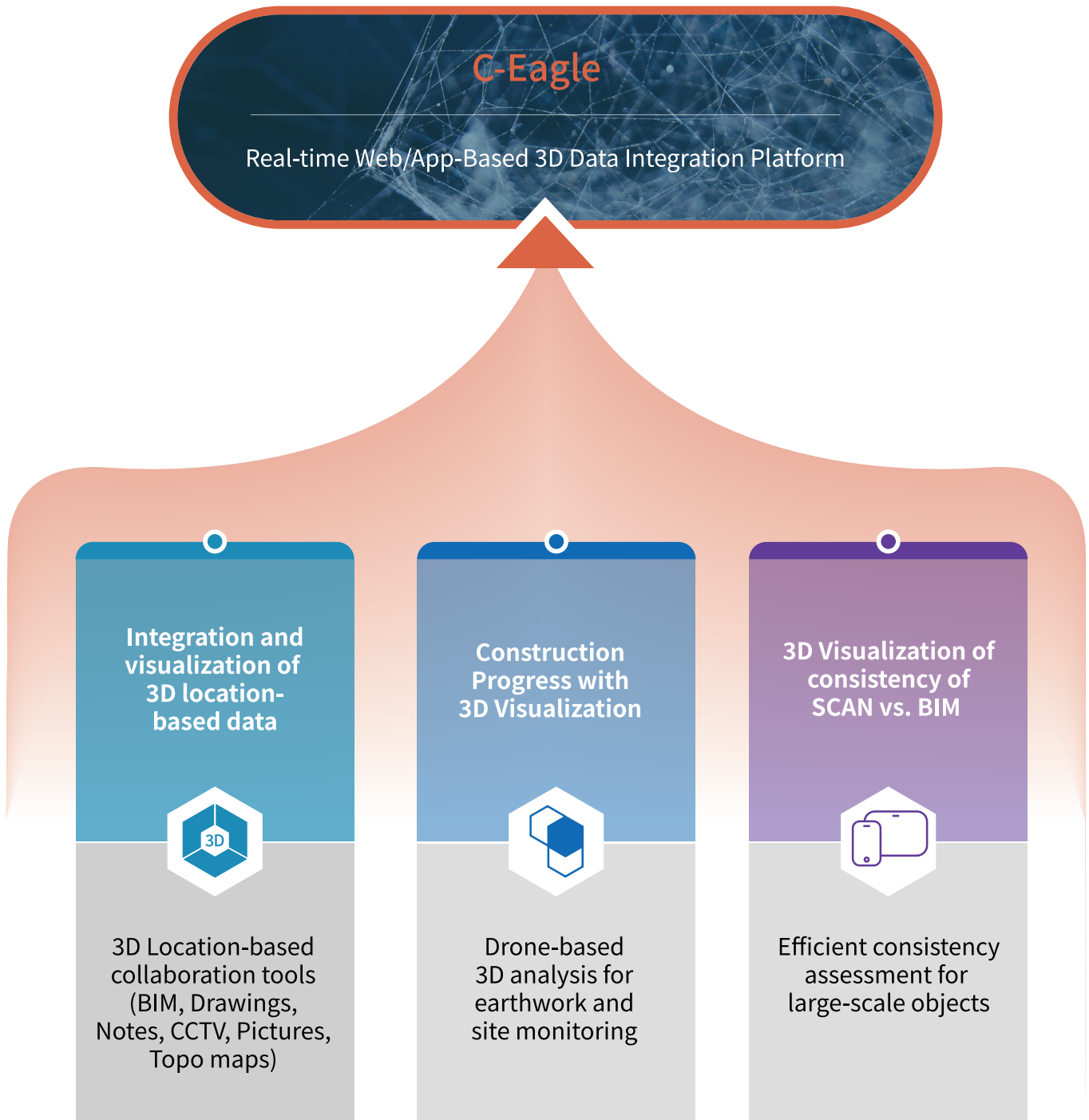
3D Data Integration Platform for Site Management

The construction industry's future depends on digital transformation to improve productivity. Collecting, storing, managing, analyzing, and sharing data and information from construction sites is crucial.



MAIN FUNCTIONS

A 3D data integration platform for construction and infrastructure site management that enables integrated management of diverse location-based data

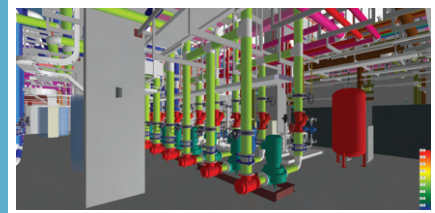
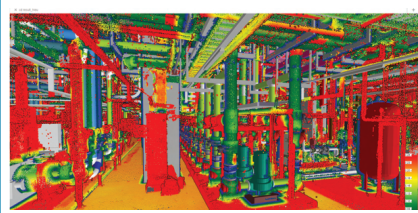


APPLICATION CASES



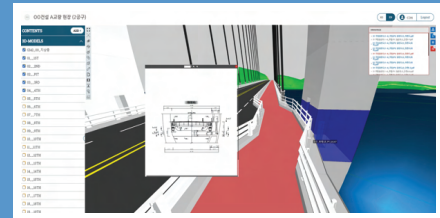
Pointcloud vs BIM Consistency Assessment

(Review, report and visualization of 3D consistency assessment)



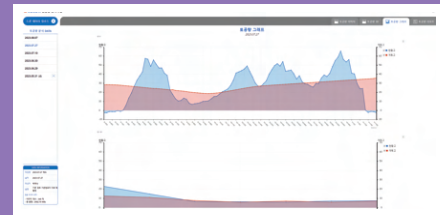
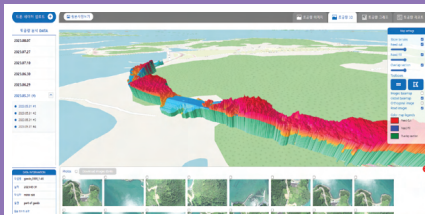
Location-Based Data Integration Management

(3D notes, pictures, drawings, measurements, etc.)



Built-in Drone Imagery Based Earth-work Solution

(3D earthwork visualization, quantity analysis, reporting, etc.)



CONWORTH 3D NOTE

A user-friendly 3D collaboration tool derived from the location-based data integration management feature of C-Eagle.

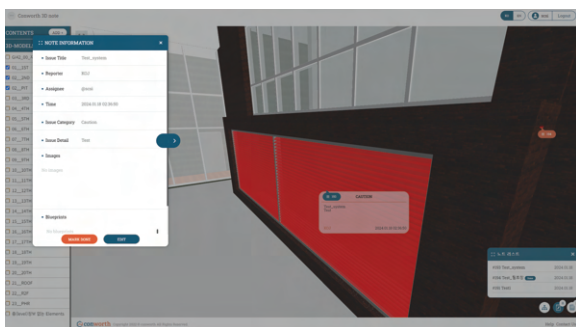
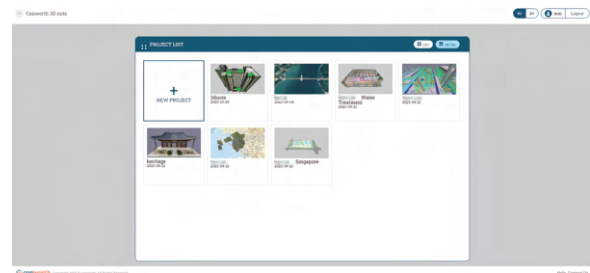
Conworth 3D Note is a collaboration tool that enables users to create notes in a visualized 3D space. With this tool, users can note and share work details and memos, photos, and drawings related to issues. The aim of this tool is to improve construction productivity with more intuitive communication in 3D virtual space.



MAIN FUNCTIONS

1 Web/App-Based 3D Data Visualization

Providing web/app-based visualization of diverse 3D data, it empowers real-time on-site collaboration and information sharing.



2 3D Location-Based Note

Users can efficiently record and share issues, drawings, action items, memos, and more using location-based notes in the 3D virtual space

3 3D Space Measurement Tool

Enables quick and easy measurement of various dimensions (length, area, angle, volume, etc.) in the 3D virtual space.



R-EAGLE

Asset Management Solution through Robot and IoT Monitoring

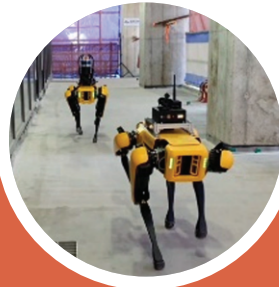
A 3D asset management solution employs an autonomous robot integrated with various IoT sensors, enabling functions such as gas leak detection, gauge reading, and hazard monitoring. All these tasks are performed within a 3D location-based system.



FEATURES AND PACKAGING

● Basic ● Optional

Hardware(Robot)	Cameras / Sensors	Software System
<ul style="list-style-type: none"> ● SPOT (Quadrupedal Walking Robot) 	<ul style="list-style-type: none"> ● Sensor Set Module 	<ul style="list-style-type: none"> ● R-Eagle (Operational/ Control Software)
<ul style="list-style-type: none"> ● SPOT Controller 	<ul style="list-style-type: none"> ● IR/PTZ/360° Camera 	<ul style="list-style-type: none"> ● Server Option (On-premise, standalone, IDC, Cloud)
<ul style="list-style-type: none"> ● Etc. (Battery, Charger, EAP) 	<ul style="list-style-type: none"> ● Gas Detection Sensor 	
<ul style="list-style-type: none"> ● SPOT Charging Shelter 		



PROCESS

1 Generating a 3D Models for Sites

2 System/Server Setup

3 Site Preparation (SPOT charging shelter)

4 Robot Path System Setup

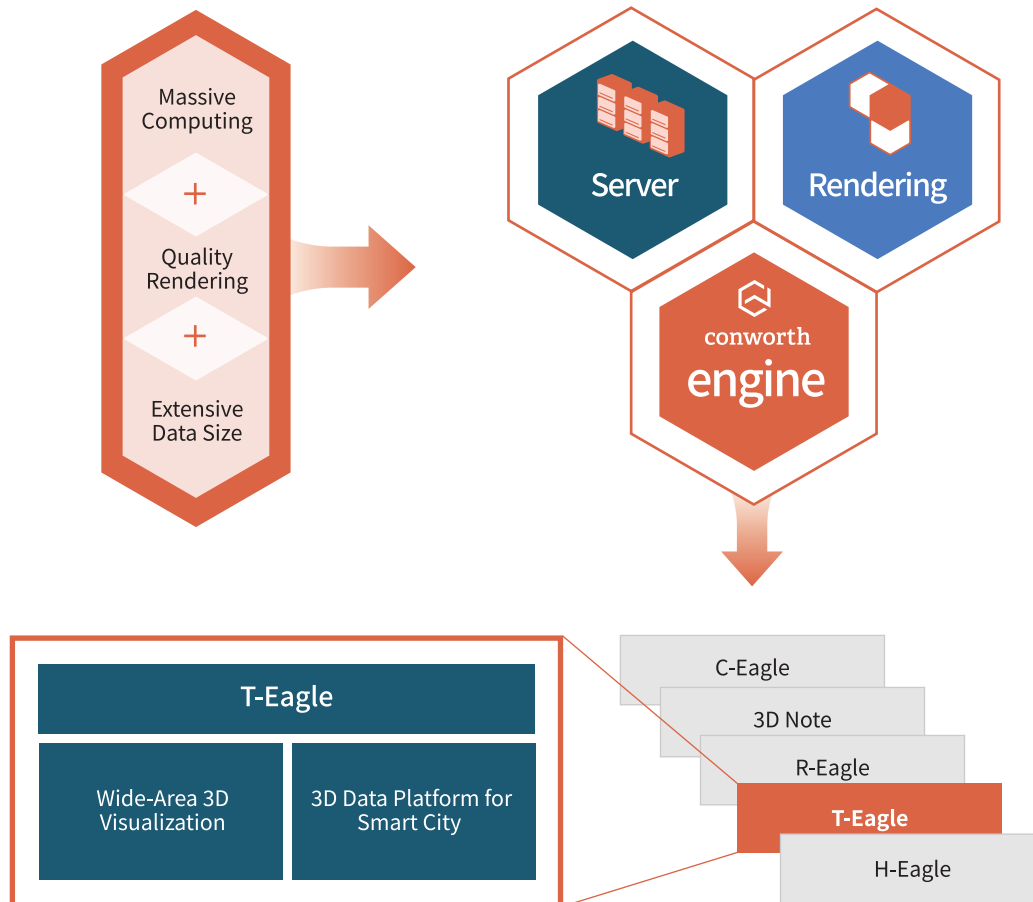
5 Autonomous Monitoring Scenario Setting

6 Real-time Monitoring/Reporting

T-EAGLE

Large-Area 3D Visualization Solution

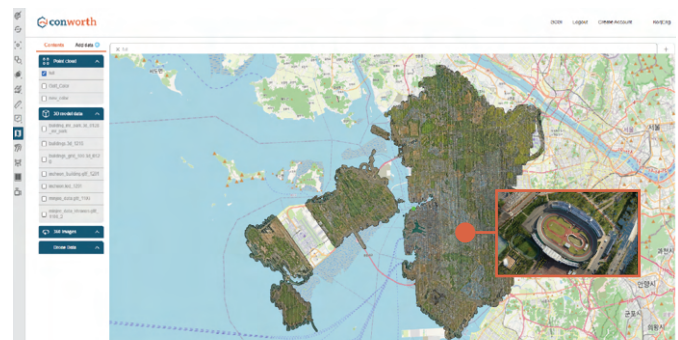
A 3D visualization solution for a smart city with spatial big data management and analysis using distributed server and graphic technology.



Application Cases

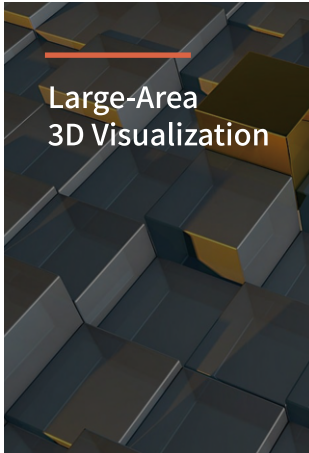


City-level massive PCD visualization



Basemap (2D Map) Integration and zoom-in

T-Eagle specializes in 3D visualizing large-scale point clouds and provides features for two main purposes: Large-Area 3D visualization and 3D data platform for smart city.

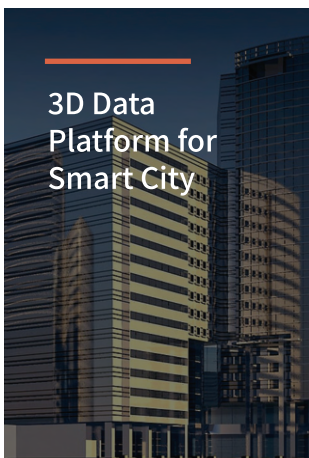


3D Visualization of Large Regions (Metropolitan Level)

Massive Point Cloud Data Processing (Spatial Big Data)

A Full-3D Spatial Data Management

Accumulation of Metropolitan-Level 3D Data



3D Data Visualization for Digital Twin

3D Location-based Data Platform for Smart City

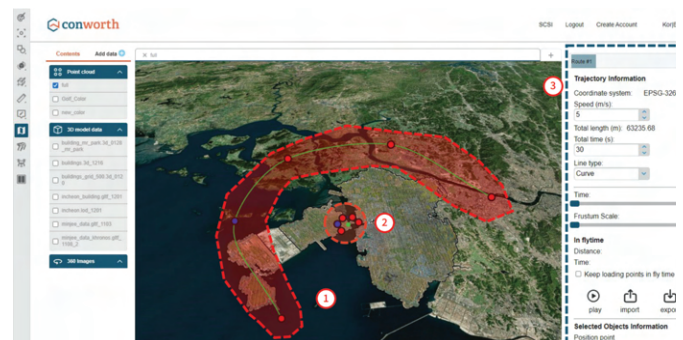
3D Flight Simulation for Path Planning

3D Big Data Management and Analysis

Application Cases



Measurements (Length, Area, Height, Angle, Volume, etc.)

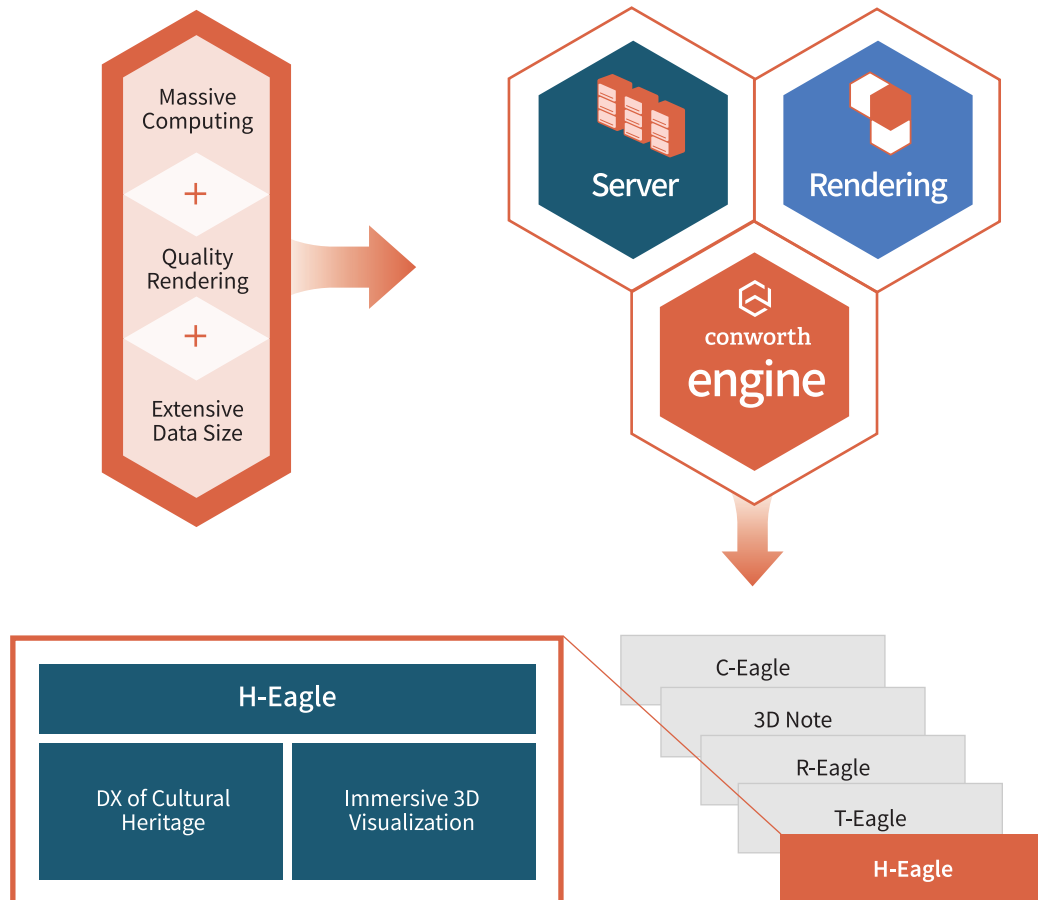


Flight Simulation - ① Flight Path ② Target Path ③ Control Panel

H-EAGLE

Immersive 3D Visualization Solution

A 3D visualization solution for immersive experiences of 3D contents through mesh/texture optimization and web-based server-side rendering.



Application Cases



3D Visualization of Cultural Heritage (Front)



3D Visualization of Cultural Heritage (Indoor①)

H-Eagle is designed for the visualization of high-quality and massive 3D mesh/texture data, serving two main purposes:
Digital Transformation of Cultural Heritage and
Immersive 3D Visualization.



Digital transformation of Cultural Heritage

Digital transformation for Preservation and Management of Cultural Heritage

Immersive Contactless Tourism and Content digitization of Cultural Assets

Recovery of Damaged Cultural Heritage Due to Disasters and Calamities



Immersive 3D Visualization

Ultra-precise Visualization for an Immersive Experience (Texture with 16,384 X 16,384 Pixels)

High-volume and High-detail 3D Data Visualization with Mesh Optimization

Web-based and Instant 3D Visualization with Server-side Rendering

Application Cases



3D Visualization of Cultural Heritage (Indoor②)



3D Visualization of Cultural Heritage (Ceiling)








CONWORTH ENGINE

Conworth Engine is optimized for massive computing, quality rendering, and handling extensive 3D data. Technologies such as multicore processing, proprietary server clusters, massive instant rendering, and CSR/SSR selection, developed specifically for these purposes, constitute our competitive advantage.







Optimized for location-based 3D data integration/processing/management

Data	Comparison group					
Web/App Approach		○	○	△	○	○
Multicore Data Processing		○	N/A	N/A	N/A	N/A
Proprietary Sever Cluster		○	×	×	×	×
Full 3D		○	○	○	○	○
Massive Instant Rendering		○	×	×	×	×
CSR/SSR Selection		○	×	×	×	×
Photorealistic 3D Contents		○	○	○	○	○

Massive 3D Rendering Test

Test PC Spec : AMD Ryzen 5 5600X 6-core / NVIDIA GeForce RTX 3090 Ti / 64GB RAM

Data	Comparison group				
FAB (5.16Gb, 5.3M Polygons, 2 Texture)		○	○	○	×
Petrochemical Plant (6.53Gb, 144.3M Polygons, 0 Texture)		○	×	×	×
Cultural Heritage (21.3Gb, 151.5M Polygons, 7 Texture)		○	×	×	×
Architectural Landmark (743Mb, 1.9M Polygons, 2275 Texture)		○	○	×	○

conworth

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 YONSEI UNIVERSITY

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