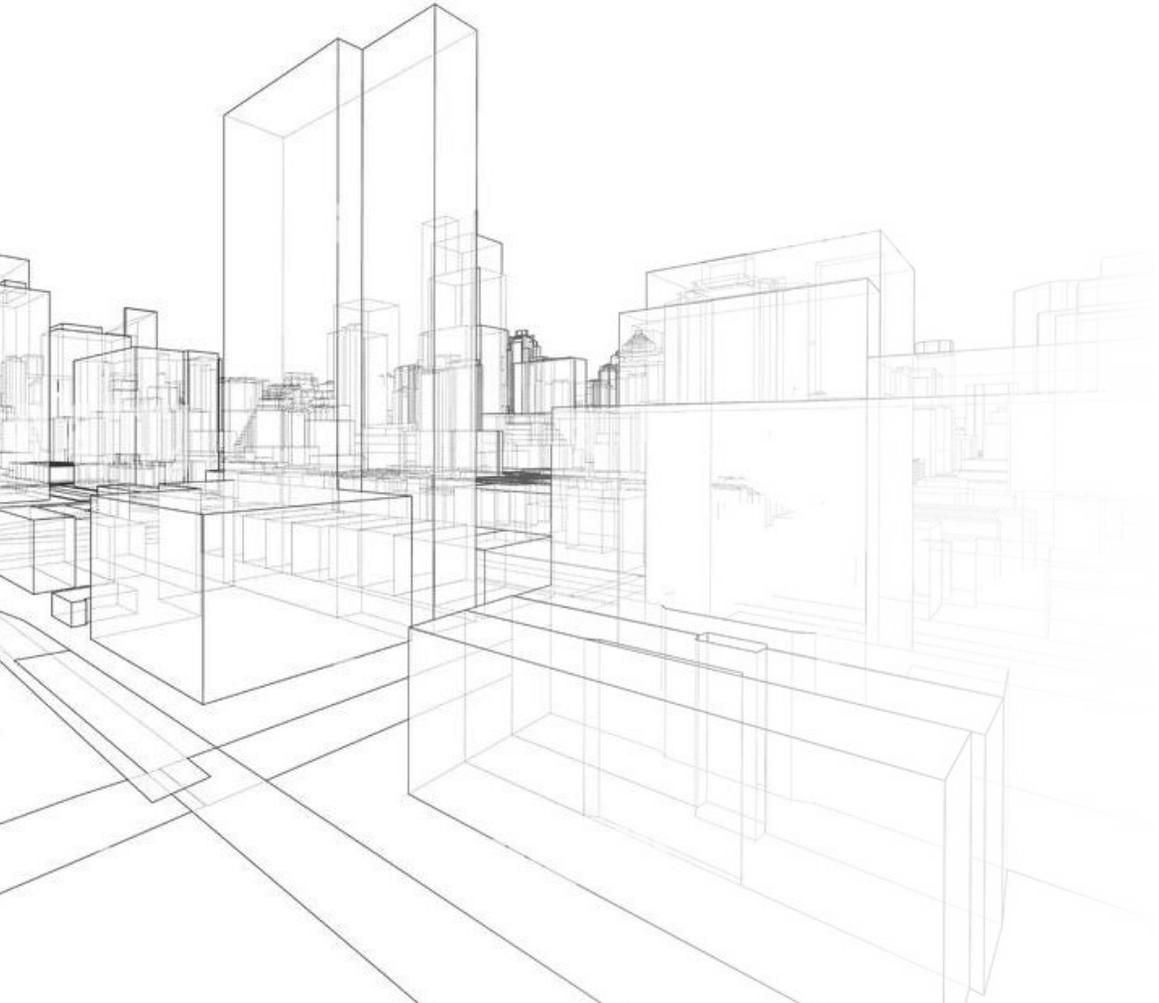




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# TECHTREE

Techtree Innovation is developing and supplying a variety of solutions that integrate IoT and AI technologies with the construction of more precise and accurate spatial digital twins.

# There is no substitute for us

Techtree Innovation aims to be the forerunner of new experiences through spatial digital twins implemented with unparalleled accuracy.



# TECHTREE



We provide  
new meanings  
to spaces  
and offer  
understanding &  
new experiences  
to users.

# History

2019

- Corporate establishment

2020

- BM patent application for "Location Information Providing Device and Method Based on Real Map Information"
- Development and launch of AROUND.map

2021

- Accreditation of corporate research institute
- Venture company certification
- Winner of the 15th Korea Excellent Patent Award (Electronics & IT Category)
- Winner of the Grand Prize at the 6th Spatial Information Utilization Startup Idea Contest (LX)

**C o m p a n y** Techtree Innovation Co., Ltd.

**A d d r e s s** 2F, 24, Banpo-daero 28-gil, Seocho-gu, Seoul, Korea (Seocho-dong, Ho Won Building)

**P h o n e** +82-2-6951-4420

**E - m a i l** techtree@tt-inno.com

## 2022

- Commencement of development for the high-precision, high-resolution spatial digital twins platform AROUND
- Registration as a regular member of the Korea Spatial Information Industry Association
- Selected as a promising small and medium enterprise
- Selected as an excellent company for work innovation
- Selected as an excellent company for talent development
- Selected as an excellent ESG company

## 2023

- Built digital twins for Daejeon Government Complex area (25 km<sup>2</sup>)
- Integration with vworld API
- Release of UAM and automotive simulators
- Release of flood and wind tunnel simulations
- Release of 5G network simulation
- Built digital twin for Anyang Pyeongchon area (49 km<sup>2</sup>)
- Integration with VR
- Ministry of Land, Infrastructure and Transport Minister's Award (For Contribution to National Spatial Information Development)
- World Smart City Expo Awards (Mobility Category)

## 2024

- Official launch of AROUND
- Joint research with KAI on helicopter aviation simulators
- Release of military operation planning simulator
- Built digital twins for Special Security Facilities with KT
- MOU with Seoul, HBFQ, SK Telecom, Seokyeong, Aeromap, BETU, BOM Tech, Kozee Group
- Built digital twins for Yeouido, Gangnam, Hongdae area in Seoul
- Joint research with ETRI on military simulation
- Joint research with Korean Air on Airtaxi aviation simulators
- LBS project Awards

# Business Scope

Techtree Innovation Co., Ltd. is a spatial digital twins platform company specializing in the establish and visualization of high-precision 3D spatial information.

Using proprietary technologies such as satellite mapping, GIS data, and PSM (Photogrammetry Software Mapping) method for 3D scanning, we precisely visualize and establish three-dimensional spaces.

Based on the slogan "There is no substitute for us," we are enhancing the accuracy and reliability of our 3D spatial digital twins platform, AROUND.

## Smart City

- Optimization of urban planning and smart infrastructure through digital twin-based urban modeling and predictive analysis.
- Disaster and crisis response.
- Traffic and resource management.
- Environmental monitoring and analysis.
- Visualization of urban development scenarios and simulations for smart city projects.

## Real Estate & Construction

- Visualization of future buildings and site planning.
- Provision of AR/VR-based real estate virtual tours for enhanced customer experience.
- Presentations for investors and stakeholders using quantitative data and simulation-based ROI analysis.
- Optimization of construction projects through simulation and scheduling.
- Enhancement of customer confidence during the sales phase using digital marketing tools.

## Military & Defense

- Utilization of operational scenario construction and combat effectiveness analysis in LVC (Live, Virtual, Constructive) environments.
- Evaluation and operational concept development support using M&S (Modeling and Simulation) for weapon systems and equipment.
- Field testing and analysis of military equipment.
- Simulation of advanced threat modeling and defensive scenarios.
- Multidimensional data-driven support for military strategy planning.
- Military equipment operation training through simulation.

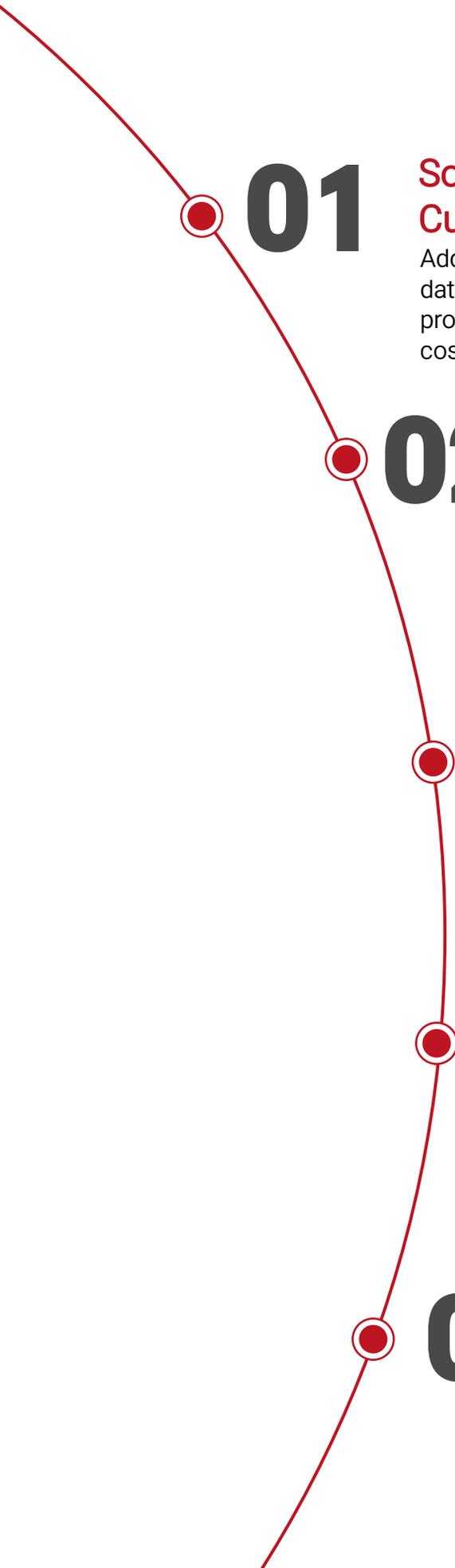
A large red circle containing the word "TECHTREE" in white, bold, uppercase letters. The logo is centered within a larger, faint grey circle that serves as a background for the central part of the diagram.

## AI & Mobility

- Autonomous driving and AirTax(UAM, Urban Air Mobility) testing.
- Data integration and visualization using AI.
- Optimization of logistics networks through route recommendations and simulation-based transport efficiency analysis.
- Real-time data utilization for logistics flow and resource allocation optimization.
- Design, verification, and testing of mobility solutions in digital twin environments.

# Specialization of Techtree Innovation

TECHTREE

**01**

## Solving Current Digital Twin Problems

Addresses various issues such as low-accuracy data acquisition methods, manual production processes, slow updates, and high production costs.

**02**

## Accuracy

Utilizes 8K resolution, wide-area scanning via PSM method, RTK GPS, and Ground Point Control to provide precise coordinates with an error margin of 5cm, establish an accurate spatial digital twins.

**03**

## Scalability

Integrates various solutions into the built spatial digital twins, making it versatile for urban planning, implementation and construction, simulation, control, review, metaverse, military training, and simulators.

**04**

## Efficiency

AROUND streamlines development and verification, offers intuitive visualization of diverse environments and situations, and significantly cuts down the time and resources needed for decision-making and information updates

**05**

## Realism

Employs the latest Unreal Engine 5, assigns properties like collision to all objects, and implements a variety of physical laws and expressions identical to reality, such as collision, wind, light, reflection, and gravity

# A One-of-a-Kind Technology for building Spatial Digital Twins

		Techtree Innovation	Others
Building Capability	Resolution	8K, Less than 5cm	More than 40cm
	Visibility	High (Build method)	Low (Tailing method)
	Margin of Error	Less than 5cm	Not measurable
	LOD Level	LOD 4(include indoor)	LOD 2 ~ 2.5 (No texture)
	Data Reliability	High(Reflecting reality as it is)	Low
Physics Engine Superiority	Object Rep.	Detailed 3D	Simplify 3D
	Details	High	Low
	Object Attributes	√	△ (Limited)
	Physical Simulation	√	X



Techtree Innovation



Spatial Digital Twins of other companies



High-Precision / High-Resolution Spatial  
Digital Twins Platform

# AROUND





# A spatial digital twins built with differentiated technology surpassing reality

AROUND is a high-precision, high-resolution spatial digital twins platform that accurately replicates terrains, buildings, roads, steps, trees, etc., without distortion. It features uniform resolution from high to low altitude and ground level, with an accuracy within a 5cm error margin. Additionally, it enables various physical laws and expressions, including light, gravity, collision, reflection, wind, and water. The built spatial digital twins can be immediately applied across various industries through integration with IoT, AI technology, and more..



Satellite

Others

Ours

**CCTV** 마포대교남단



실제 상황과 30초~3분 정도 차이를 낳을 수 있습니다.  
경찰청(VTIC)(LIVE) 제공

전체화면

**CCTV** 원효대교남단 **TECH TREE**



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경찰청(VTIC)(LIVE) 제공

전체화면

**CCTV** 한강대교남단

# AROUND.



노량진수산물시장앞



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경감형(UTIC)(LIVE) 제공

전체화면

닫기



여의교북단

TECH TREE



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경감형(UTIC)(LIVE) 제공

전체화면

닫기



노량진수산물시장앞

# twin



여의교북단 여의교남단



여의도공원



여의공원



여의도국민은행



국회도서관



국회

# AROUND. twin

## ■ Key Features

### Planning

- Simulates urban development, architecture, and infrastructure for optimal site-specific plans.

### Simulators

- Provides accurate data for safe testing of UAM, vehicles, ships and aviation systems in realistic environments.
- Testbed for AI systems.

### Simulation

- Visualizes physical phenomena like wind, flooding, and population density for better decision-making.

## ■ Advantage

### Precision Data

- Implements distortion-free spatial data using PSM (Photogrammetry Software Mapping) technology, RTK GPS, and Ground Control Points

### Realistic Physics

- Simulates physical phenomena like light reflection, collisions, and gravity for highly realistic virtual environments.

### Integration

- Integrates traffic, weather, and population data to provide richer simulation results and analyses.

**AROUND.twin** delivers high-precision 3D digital twins and tailored solutions with accuracy and detail matching reality. As a one-stop solution, it supports various industries, including urban simulation, physical phenomenon prediction, aviation, and autonomous vehicle simulation, enabling effective analysis, visualization, and decision-making in complex environments.

More than just a single-purpose tool, AROUND.twin bridges the gap between reality and virtual environments, providing a unified platform that drives innovation across industries. It helps clients solve complex challenges and design a better future efficiently and comprehensively.

## ■ Use Cases

### Smart City Development

- Optimize city planning and infrastructure with advanced simulations.

### Disaster Management

- Predict and prepare for natural disasters with virtual modeling.

### AI Testbed

- Safely test autonomous systems in a controlled environment.

### Data for Training Simulators

- Safely tests and identifies risks in virtual environments for operations and training.

### Military Applications

- Simulate battlefield scenarios for strategy and combat training.

## ■ Delivered value

### Problem Solving

- Simulates and resolves real-world challenges with data-driven insights.

### Efficiency

- Streamlines workflows and optimizes resource use.

### Cost Savings

- Reduces testing costs and prevents errors.

### Success Rates

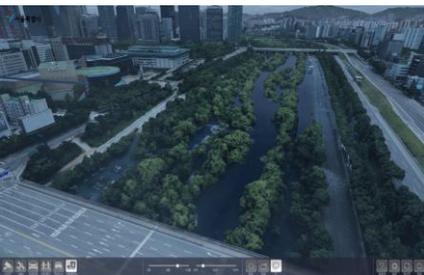
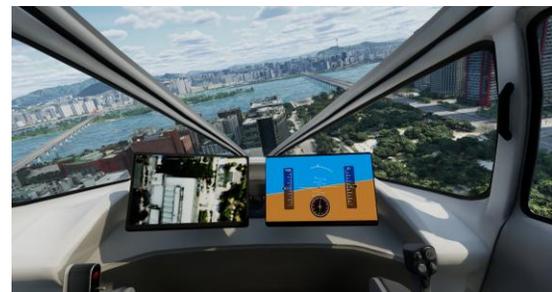
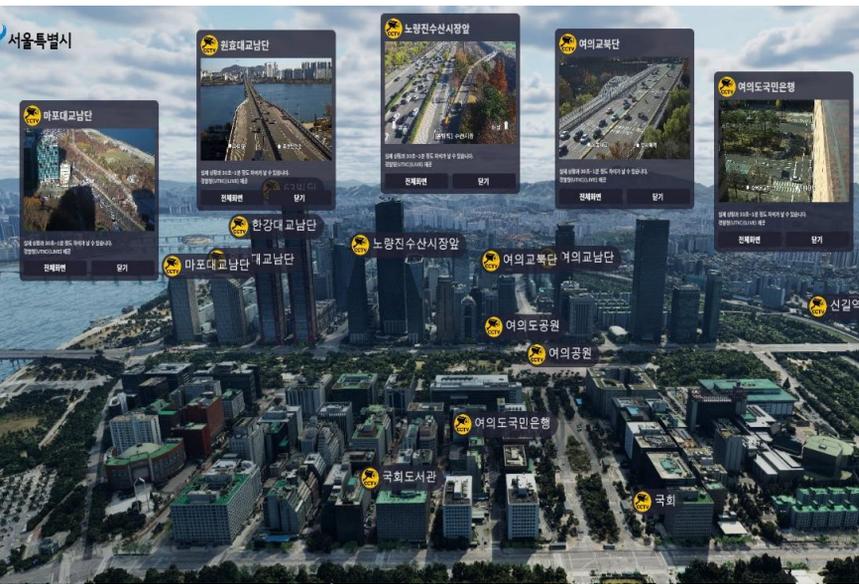
- Delivers precise simulations for better planning.

### Collaboration

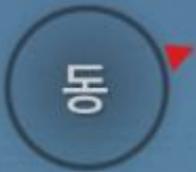
- Enhances communication with clear visualizations and real-time interaction.



# Infinity All-in-One Digital Twin Solution



※ 본 제작물은 소비자의 이해를 돕기 위해 제작된 것으로 실제와 차이가 있을 수 있습니다.



축소

# AROUND.



확대





view



# AROUND. view



## ■ Key Features

### Visualization of Future Buildings and Environments

- Generates realistic 3D models of unbuilt structures, complexes, and development plans, enhancing competitiveness in the pre-sale market.
- Accurately visualizes factors such as transportation networks, development plans, views, and sunlight exposure, improving client understanding and trust.

### Virtual Tour Functionality

- Offers interactive virtual tours, allowing clients to explore properties without physical limitations.
- Provides a comprehensive visual representation of site conditions and environments, boosting marketing and persuasion efforts.

### Intuitive User Interface (UI)

- Supports devices like touchscreens, VR, and AR, enabling users to intuitively explore and interact with information.
- Delivers customizable visualization solutions for apartment showrooms, exhibition halls, and online platforms.

**AROUND.view** is an innovative visualization solution for real estate marketing and development projects. Since its launch in 2020, it has been successfully utilized by major construction companies such as Hyundai Engineering & Construction, Hoban Construction, HDC Hyundai Development Company, SK Ecoplant, Xi S&D, Jeil Construction, and Dongmoon Construction in apartment showrooms and projects.

AROUND.view creates near-realistic 3D representations of future buildings and surrounding environments, addressing the shortcomings of the pre-sale market. It provides intuitive and reliable location information to clients and stakeholders, enabling better decision-making.

More than just 3D modeling, AROUND.view serves as a strategic tool for successful sales and development projects. It simplifies complex information and sets a new standard for digital innovation in the real estate and construction markets.

## ■ Use Cases

### Real Estate Sales Showroom

- Enhances sales competitiveness by offering clients virtual tours that feel like real property visits.

### Development Project Presentations

- Visually explains future development plans to investors and stakeholders, aiding in persuasion.

### Community Communication

- Simulates the impact of development projects on local environments, fostering public understanding and support.

## ■ Delivered value

### Improved Client Persuasion

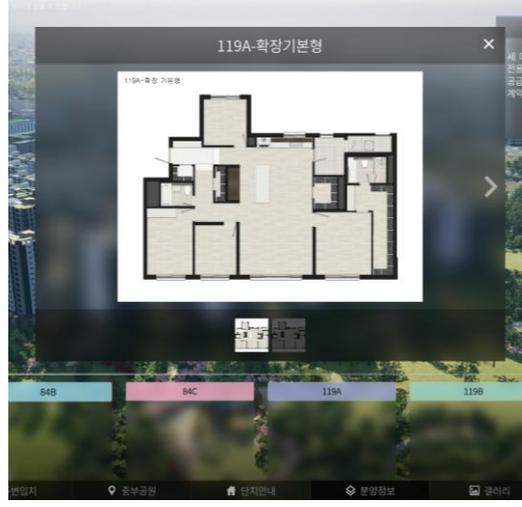
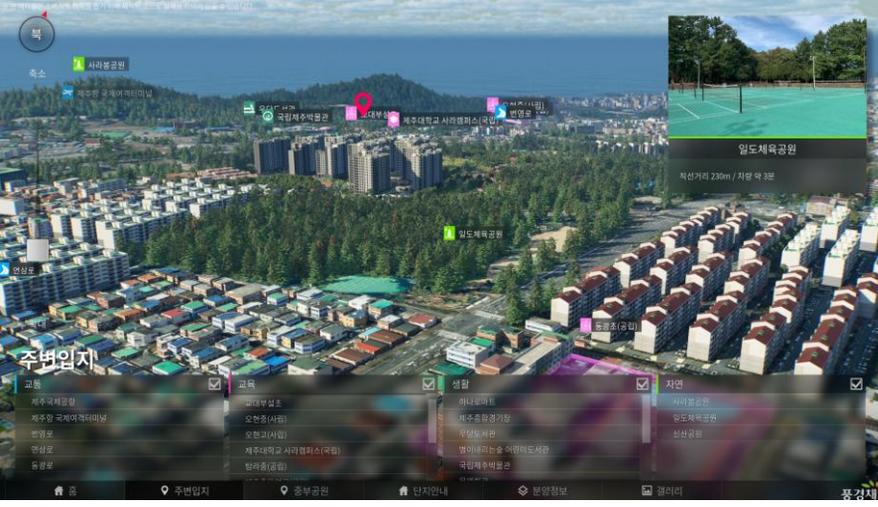
- Realistic visualization of future buildings and site information increases sales success rates.

### Cost Savings

- Reduces unnecessary revisions and conflicts by improving client understanding and trust during the sales phase.

### Efficient Decision-Making

- Facilitates faster, more accurate decisions among project stakeholders through intuitive and precise visualization.



# Visualize the Future, Realize the Potential





**AROUND.**

# map



# AROUND. map

## ■ Key Features

### High-Quality Digital Twin Data

- Accurate 3D data of terrain, buildings, and roads.
- Distortion-free, high-resolution data using PSM technology.

### User Customization

- Flexible data processing, integration, and environment reconfiguration.
- Supports Unreal Engine, Unity, and other platforms.

### Data Integration and Applications

- Easily integrates with GIS data and APIs.
- Applicable to construction, urban planning, disaster management, aviation simulation, and metaverse creation.

## ■ Advantage

### High-Precision Data Construction

- Provides spatial data with a resolution of up to 5 cm, ensuring realistic and accurate representations.

### Realistic Environmental Modeling

- Capable of detailed representation of terrain elevation, building structures, and natural elements, making it ideal for simulations and analytical tasks.

### Scalability and Compatibility

- Allows dataset expansion based on customer requirements and supports integration into diverse workflows with compatibility across multiple software platforms.

AROUND.map is a digital twin data solution that provides customers with the flexibility to configure and utilize environments and data according to their specific needs. Based on high-resolution datasets including terrain, buildings, roads, and natural elements, AROUND.map allows buyers to restructure data models or integrate additional information as required.

With precise data and customizable features, it meets the diverse demands of various industries, enhancing project efficiency and success rates. AROUND.map has been widely implemented as an indispensable solution in the digital twin data market, delivering tangible value to its users.

## ■ Use Cases

### Smart City Development

- Supplies foundational data for urban planning and environmental analysis, supporting the early stages of city development projects.

### Mobility Testing

- Provides terrain and infrastructure data necessary for testing airtaxi systems, autonomous vehicles, and other transportation solutions.

### Disaster Management

- Offers detailed data for simulations to prepare for natural disasters such as floods, landslides, and wildfires.

### Metaverse Content

- Serves as a foundational dataset for creating virtual reality (VR) and augmented reality (AR) environments.

## ■ Delivered value

### Cost and Time Savings

- Enables immediate use of high-precision data, reducing the costs and time required for data construction.

### Increased Project Success Rates

- Delivers tailored solutions optimized for specific project requirements, enhancing outcomes.

### Flexible Usability

- Allows data to be customized and expanded for various industries and purposes, providing versatility and adaptability.



# Empower Your Projects with Precision Data



There is no substitute for us



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