CNBIT
POINT CLOUD & BIG DATA INFORMATION TECHNOLOGY

Company Introduction

2018. 11

Company

CNBIT
POINT CLOUD & BIG DATA INFORMATION TECHNOLOGY

Status

Company Name	CNBIT
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Foundation	31 May 2018
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Phone & Fax	T +82-010-4631-7235 / F 031-383-2331

Location
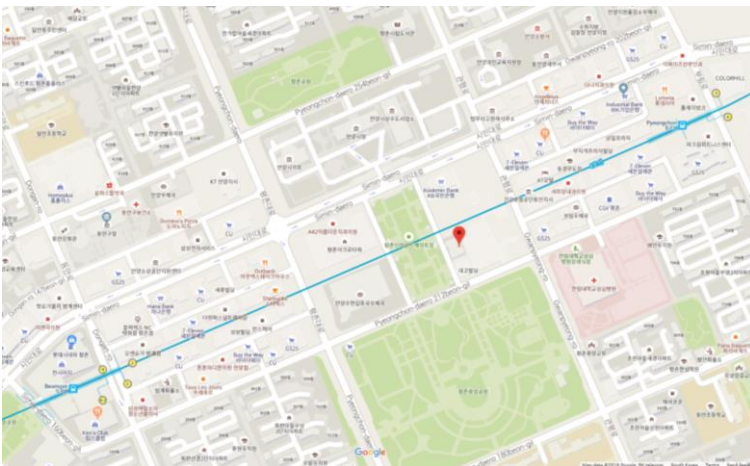
Business Areas

Spatial data collection and database construction

- Gather spatial information from a wide range of surveying equipment such as earth, air, and indoors.
- Extracts 2D and 3D data through Point Cloud
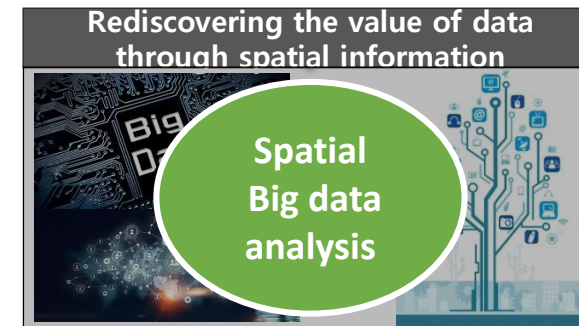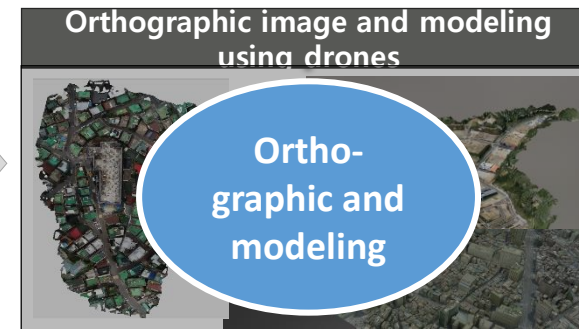- 3D · 4D data processing
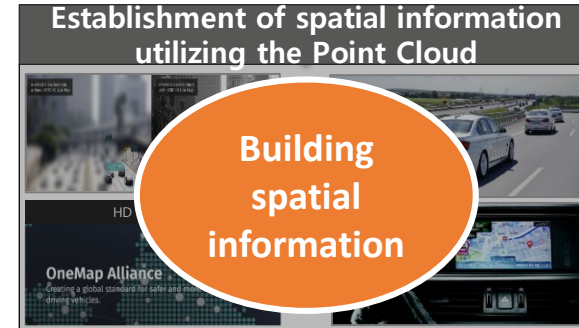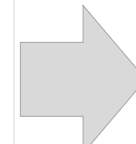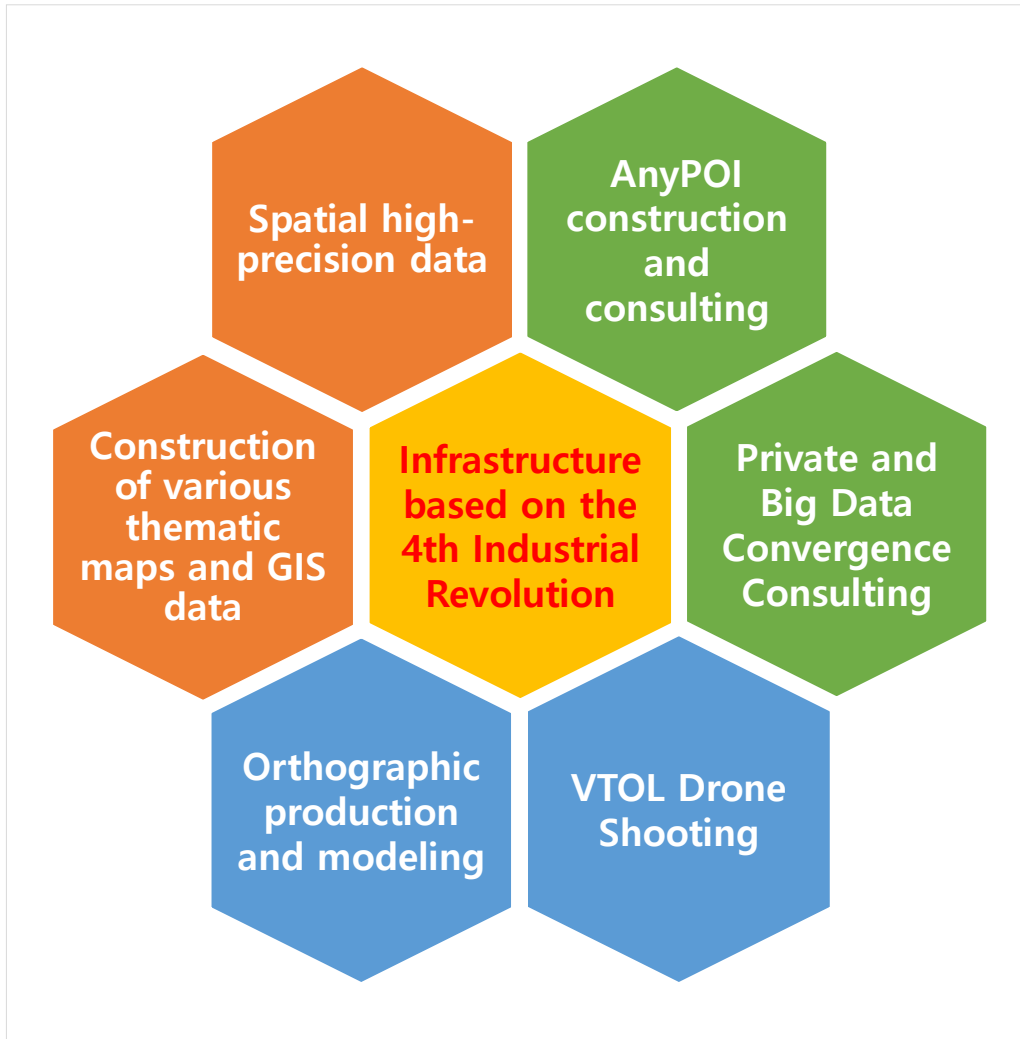- Point cloud data fusion

Orthographic and 3D modeling using drone

- Orthographic image production through VTOL (Vertical landing and landing type fixed wing drones)
- 3D modeling with high resolution orthoimage

Big Data Analysis and Consulting

- Construct and provide AnyPOI
- Public data-based research Big Data Utilization
- Providing public and private large data fusion services
- Big data analysis result visualization
- Big data analysis systematized

Vision

"The trend of Increasing utilization to spatial information and big data."

- Spatial high-precision data
- AnyPOI construction and consulting
- Construction of various thematic maps and GIS data
- **Infrastructure based on the 4th Industrial Revolution**
- Private and Big Data Convergence Consulting
- Orthographic production and modeling
- VTOL Drone Shooting

Establishment of spatial information utilizing the Point Cloud

Building spatial information

Orthographic image and modeling using drones

Ortho-graphic and modeling

Rediscovering the value of data through spatial information

Spatial Big data analysis

Introduction of Products

- ➤ **nebula–DSLR**
- ➤ **nebula–LP**
- ➤ **nebula–AP**
- ➤ **Wingtra One**
- ➤ **TIMMS**
- ➤ **ORBIT**

Products

Collection ▶ Processing ▶ Service

Data collecting device

Applanix AP-20E / Nikon D850 / 10.5mm Lens

nebula–DSLR

- Panoramic image collecting device mounted on vehicle
- DSLR electronic shutter mode
  (Improved durability, 5 million times shuttering test)
- Coordinate value collection with INS
  (Coordinate accuracy improved within 10cm)
- Simultaneous control of firmware & DSLR PC control mode
  - Image and log file is paired and saved together
- Controlling by Wifi
- Automatic data transmission through 5G network

Products

Data collecting device

Applanix AP-20E / Quanergy M8 / Velodyne HDL-32E

nebula–LP

- High precision mobile mapping collection device mounted on vehicle
- FOG type high precision inertial navigation system and LiDAR sensor coupled tightly
- Built-in module for synchronization and data collection
- Controlled by Wifi
- Light weight and low power
- The possibility of Integration and nebula-DSLR

Products

**Collection** ➡ Processing ➡ Service

Data collecting device

Applanix AP-20E / Quanergy M8
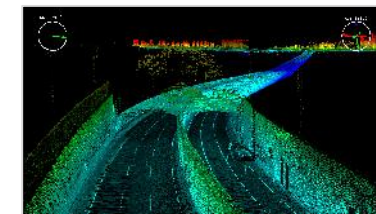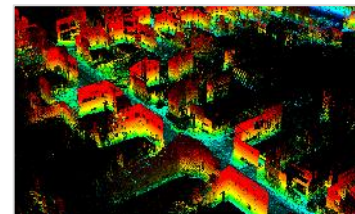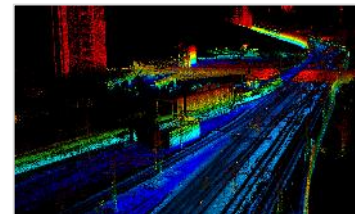
nebula–AP

- The device for High precision mobile mapping acquisition mounted drone.
- Possibility to collect local data that can not be accessed by vehicles.
- Perfect combination FOG-type high precision inertial navigation device with LiDAR sensor.
- Built-in operation module for synchronization and data acquisition.
- Control via Wifi.
- Lightweight (within 5Kg) and low power.

Products

Data collecting device

VTOL / Sony RX1RII / 35mm Lens
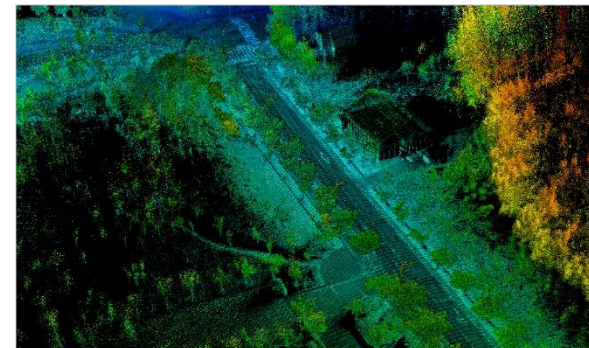
Wingtra One

- Performs professional aerial survey combining high resolution and accuracy
- Supporting Vertical Take-Off and Landing (VTOL)
- Maximum flight duration up to 55 minutes
- Operates with flight plan only, no navigator required
- Gurantees robustness and safety


<2018년 2월 1일 연세대학교 교내 촬영>

Products
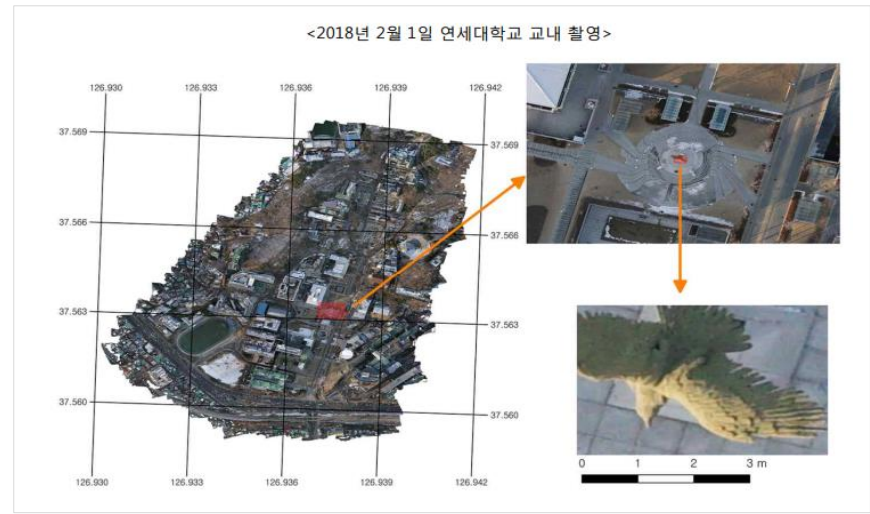
Data collecting device

Spherical Camera / LiDAR / IMU

TIMMS

- High-precision mobile mapping device for INDOOR usage.
- Apply high precision IMU guaranteeing an accurate outcome with 3cm without helping GPS.
- Interlocking data collection between LiDAR and Camera.
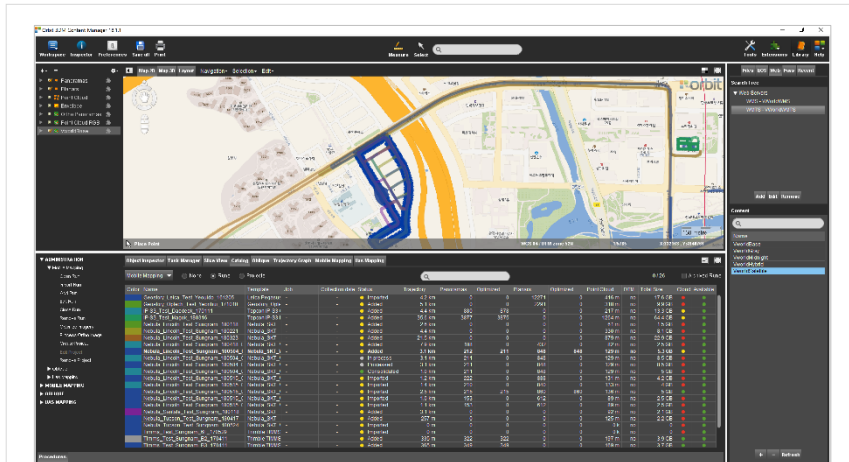- Generating close to real-world model data.

Products

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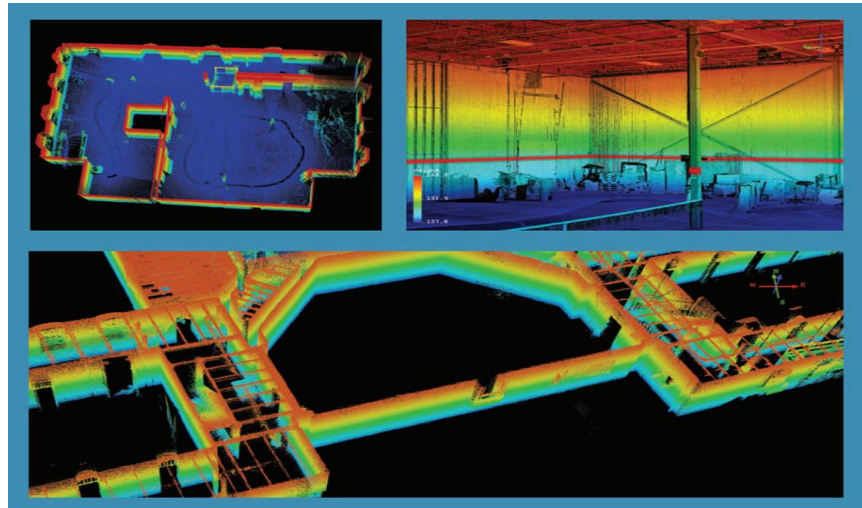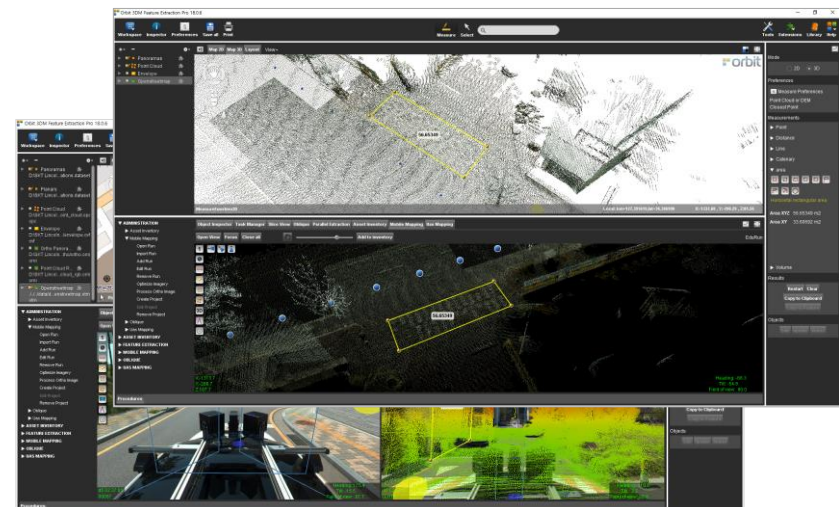
Data processing software

3DM Content Manager & Feature Extraction

3DM Content Manager & Feature Extraction

- Desktop-based data management, editing, and extraction solutions
- 3D point cloud data and image management
- Supporting mobile mapping project sharing
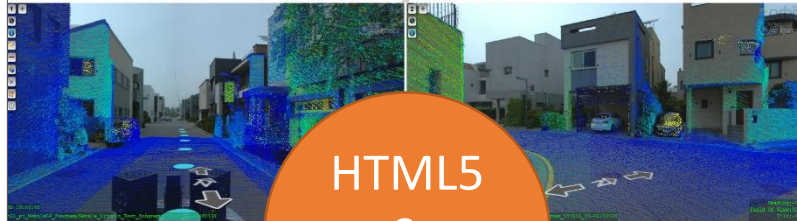- Supporting templates for various collection equipment configurations
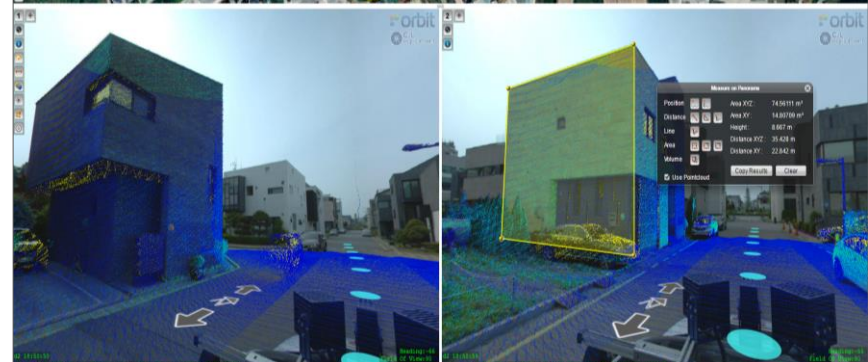
Products

수집 ➡ 가공 ➡ **서비스**

Service Software

3DM Publisher

3DM Publisher

- Server-based data management and editing solutions
- Supporting 3D point cloud data and image-based service
- Supporting Web and mobile device
- Supporting Flash or HTML5

HTML5 & FLASH

Introduction of Business

- ➢ **BigData(Any-POI)**
- ➢ **Building spatial information**
- ➢ **Orthographic and 3D modeling**
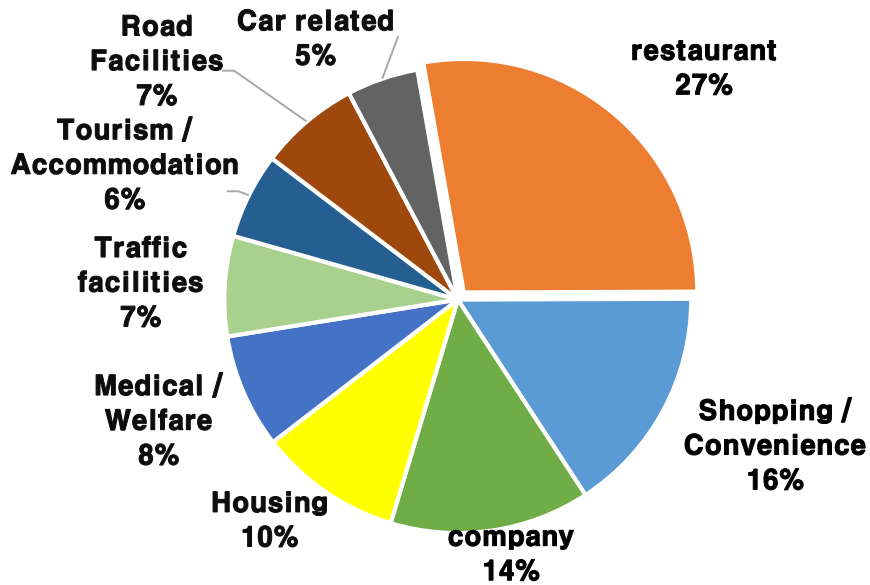
Bigdata (AnyPOI)

As-is

Field image acquisition
+ Collection of user registration information

To-be

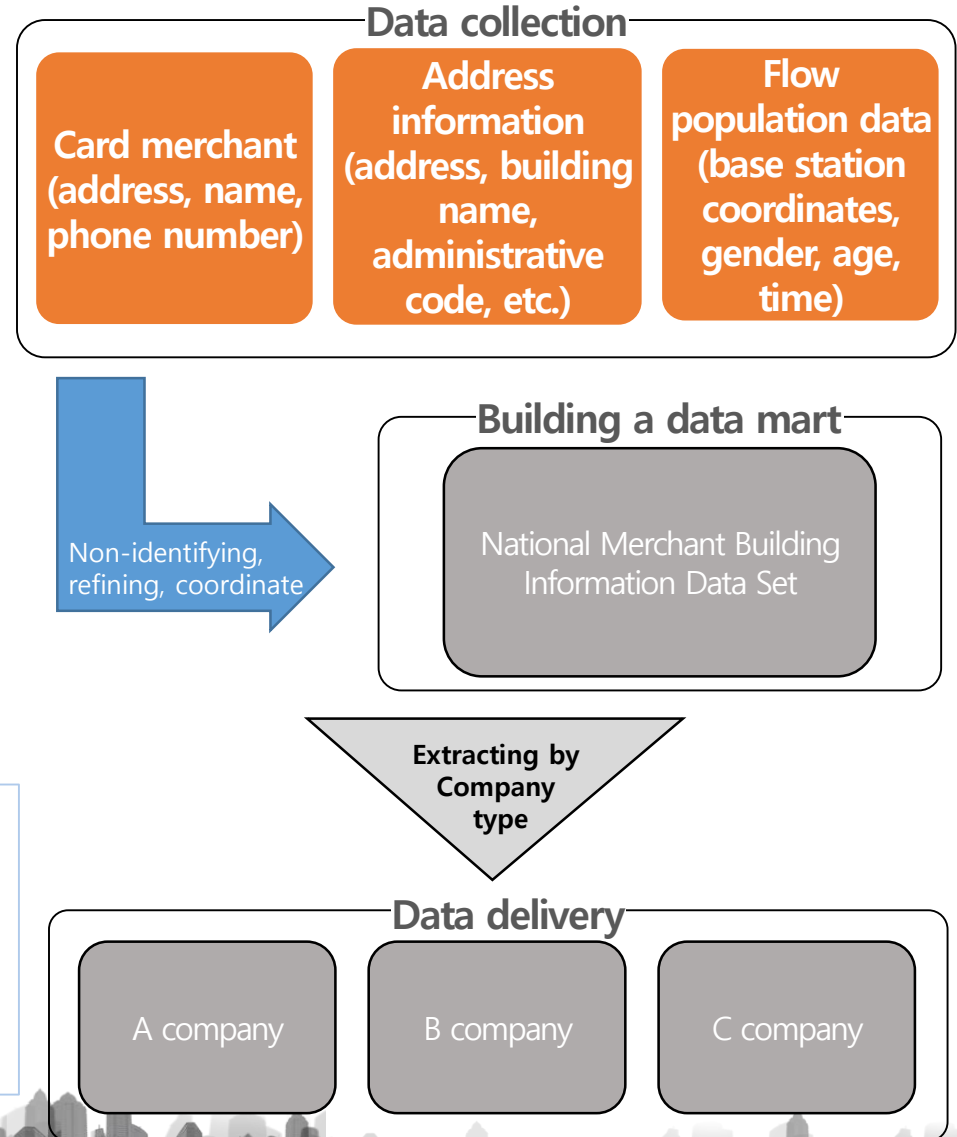Creation the new POI through public and private(card, telecom) big data.

Bigdata (Any-POI)

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Navigation user pattern analysis

- Road Facilities 7%
- Car related 5%
- restaurant 27%
- Tourism / Accommodation 6%
- Traffic facilities 7%
- Medical / Welfare 8%
- Housing 10%
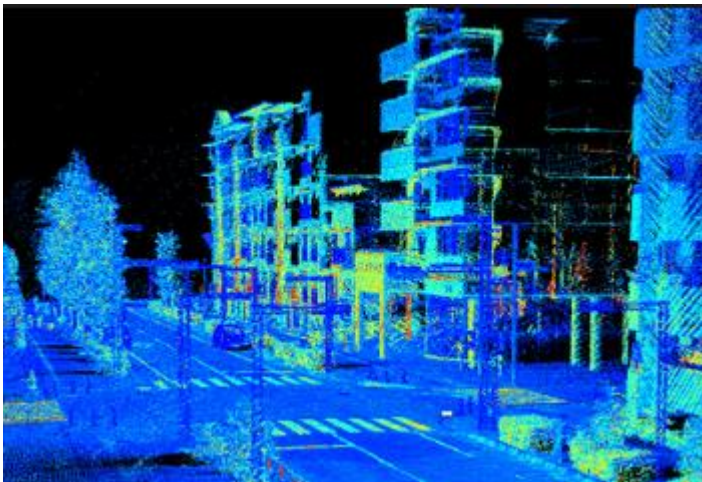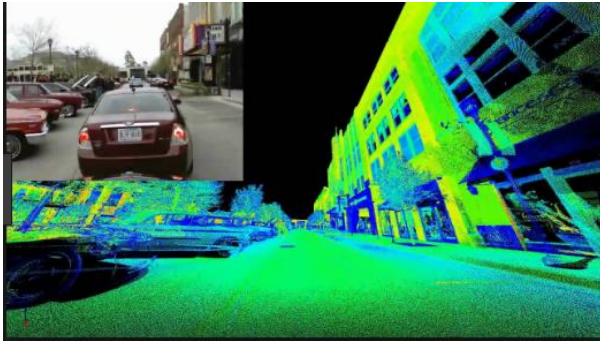- company 14%
- Shopping / Convenience 16%

Approximately, 40% of navigation researches are concentrated on the business with high card consumption and on the place has a high floating population.

> It can be esay to create a new POI if a data mart is constructed by merging new address data, credit card merchant information, and mobile phone's flowing population.

Building a data mart

Data collection

| Card merchant (address, name, phone number) | Address information (address, building name, administrative code, etc.) | Flow population data (base station coordinates, gender, age, time) |

Non-identifying, refining, coordinate

Building a data mart

National Merchant Building Information Data Set

Extracting by Company type

Data delivery

| A company | B company | C company |

Spatial information

Various business projects supported by 3D point cloud data get form MMS and Dron.

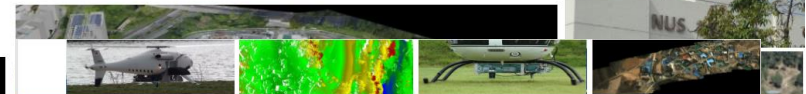### Drones in 3D modeling and mapping

Prof. em. Dr. Armin Gruen

c/o Chair of Information Architecture, ETH Zurich

Institute of Theoretical Physics, ETH Zurich

agruen@geod.baug.ethz.ch

1. **Introduction**
2. **Experiences from projects**
3. **Conclusions**

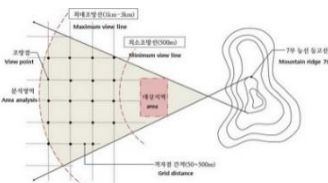**Data Acquisition System**

Spatial information

Connectivity by sector

Drone courier

Disaster and safety applications
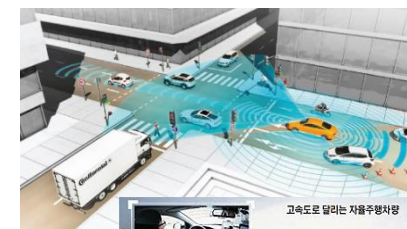

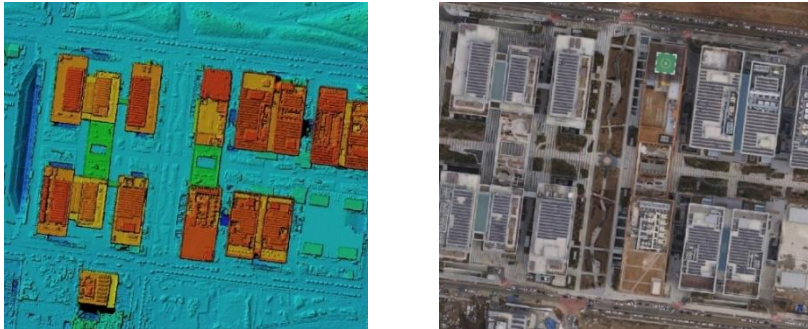**Applying landscape and location analysis**

Construction supervision

UAV 3D Cube-way

정밀지도
Hybrid Map

Application of 5G network construction plan

Applied autonomous driving technology

Spatial information

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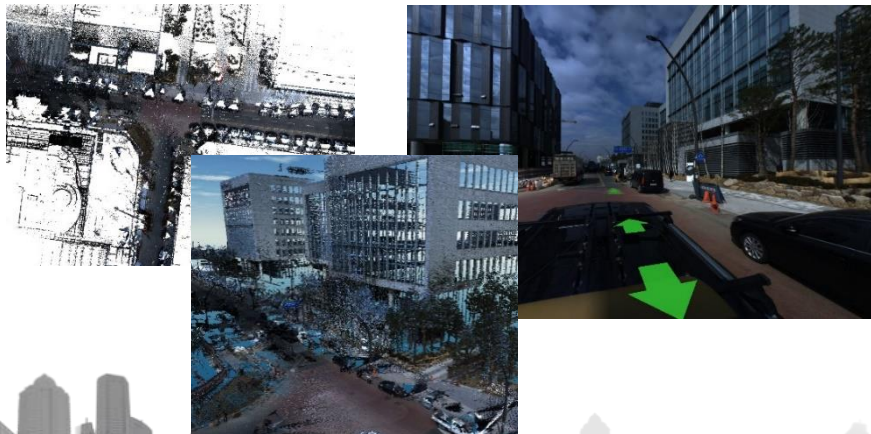
Each outcome

Drone Map

Construction of Drones map using DSM and Orthographic Image

HyBrid Map

MMS Results

3D Cube Way

Orthographic Image
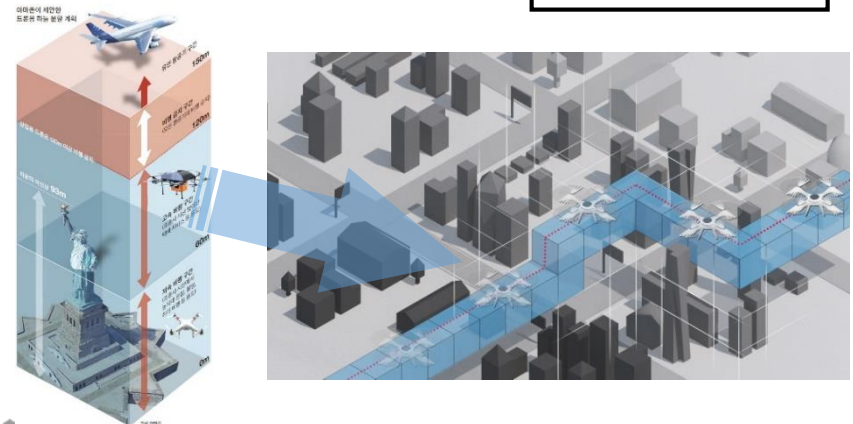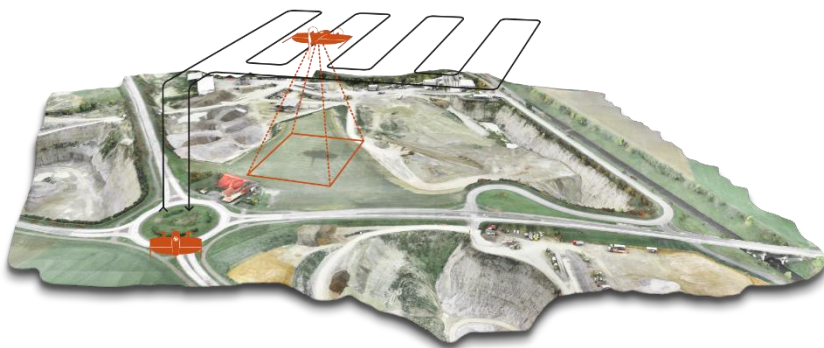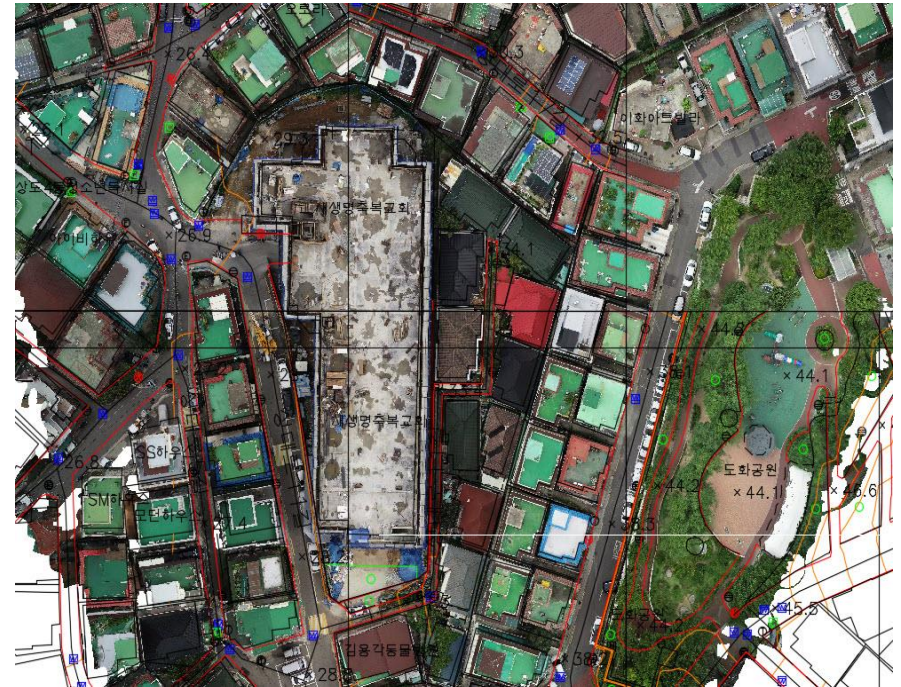

Data Collection (WINGTRA)

VTOL / Sony RX1RII / 35mm Lens

Orthophoto production

1: 1,000 Numerical maps and overlaps (accuracy verification)

Orthographic Image

Create 3D Object

Orthophoto 250Piece / Pix4d / Context Capture

3D Print

- Detailed representation using 3D printer
- Can be used in various fields such as architecture, civil engineering
- Various types of products can be produced

Production using 3D printer

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