



# LVC Drone Control Simulator

LVC 드론 시뮬레이터

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## LVC (Live Virtual Constructive) and Digital Twin-based **drone tactical training simulator**

LVC : Live Virtual Constructive

- LVC (Live Virtual Constructive) and Digital Twin-based drone tactical training simulator
  - Contributing to enhancing mission capability by applying advanced ICT technology and creating circumstances for drone tactical training
  - Providing realistic training environments through the realistic virtual reality modelling of actual geographical features and realistic video
  - Continuous education and training through the real-time transition from actual drones to virtual drones
  - Contributing to strengthening drone operability and tactical mission capability through a variety of education and training in a realistic virtual environment
  - Preventing accidents and saving costs through repetitive learning in a virtual environment
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LVC Drone Control Simulator

# Live Virtual Constructive

Enhancing training efficiency and eliminating training-related limits by forming the training environment linking an actual drone(Live) and a drone in virtual environment



Changing a drone operated in real environment with a drone in virtual environment

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Operation of drones in real and virtual environment at the same time.

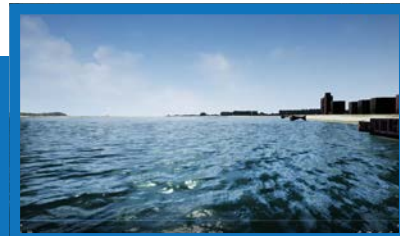
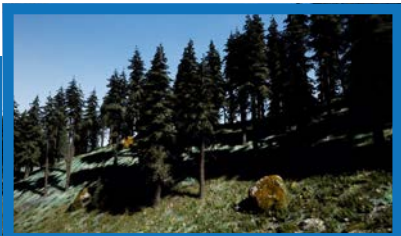
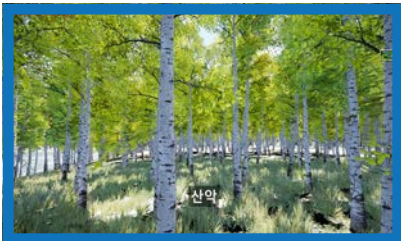
# Digital Twin

Securing the effects of education and training by continuing education and training using virtual drones, after using actual drones, through the integrated control of actual drone and virtual drone on the basis of Digital Twin



# Implementation of realistic virtual environment

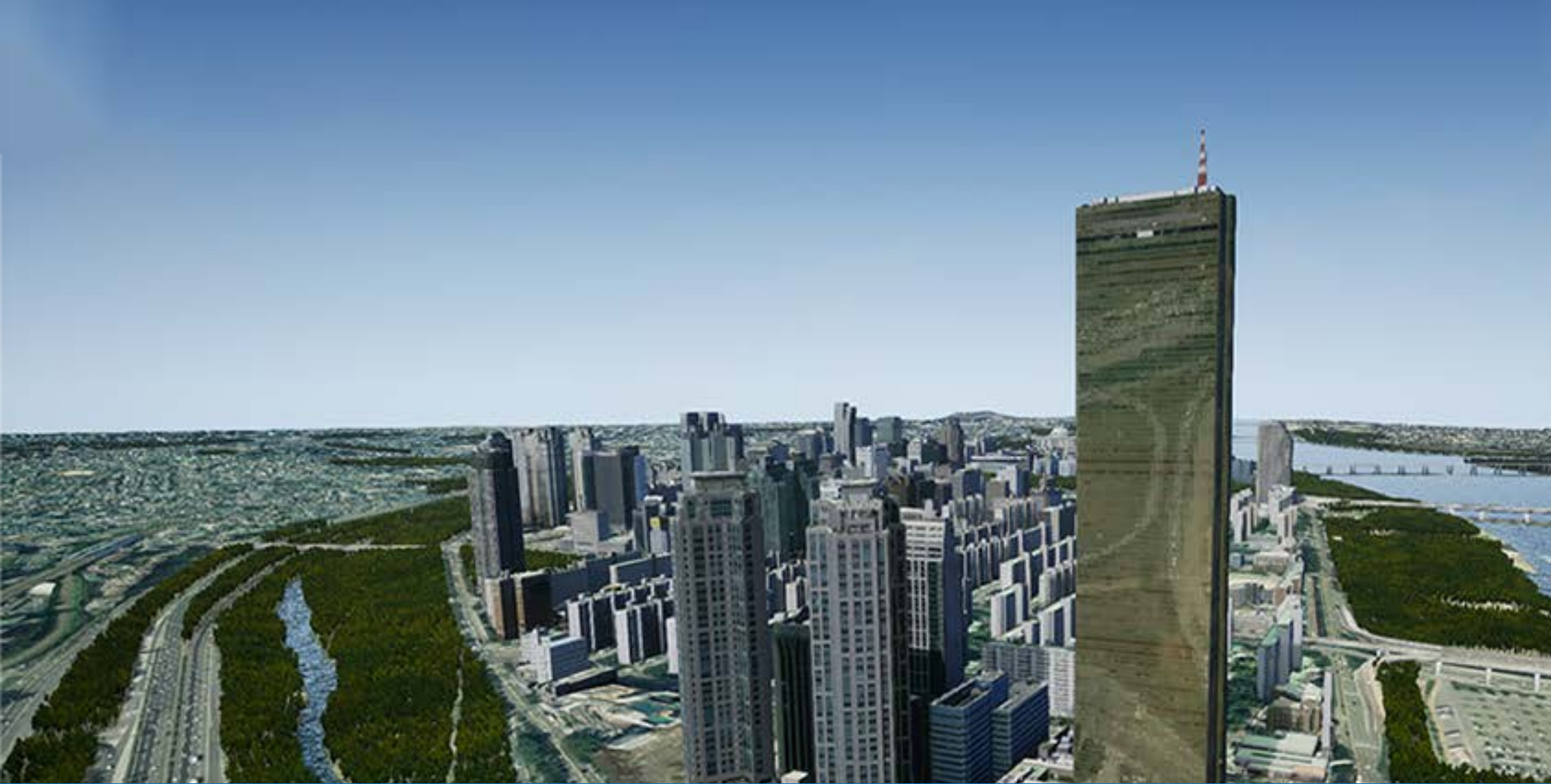
Enabling realistic images by implementing the actual geography of Korea using high precision 3D data and a sophisticated physical engine





- 1. Mountainous geography
- 2. Mountainous geography
- 3. Rivers, seas
- 4. Rivers, seas
- 5. Wooded areas
- 6. Wooded areas

1	3	5
2	4	6



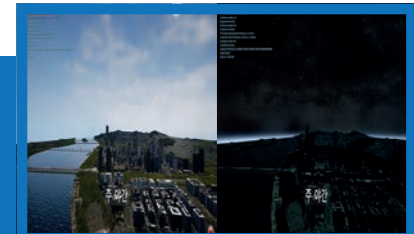
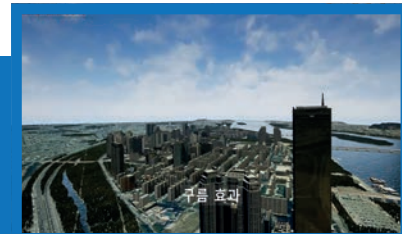
- 1
- 2
- 3
- 4
- 5
- 6

- 1. Rain
- 2. Snow
- 3. Dust
- 4. Fog
- 5. Cloud
- 6. Day/Night



# A variety of meteorological effects

Meteorological environment effects including rain, snow, fog, day, and night



# Camera modes with various focuses

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Camera modes with various points of view, including Pilot FPV and Drone Follow View





1. Controller's focus
2. Drone camera focus
3. A third party focus





1

2

1. Daytime optics image 4. Red highlight

3

4

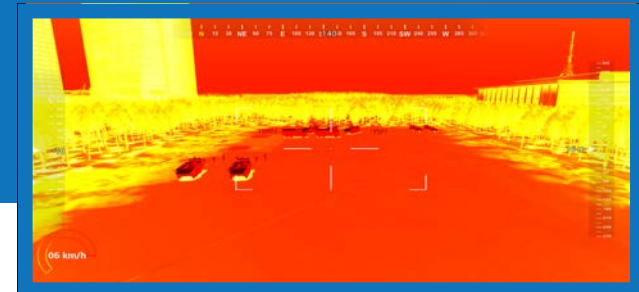
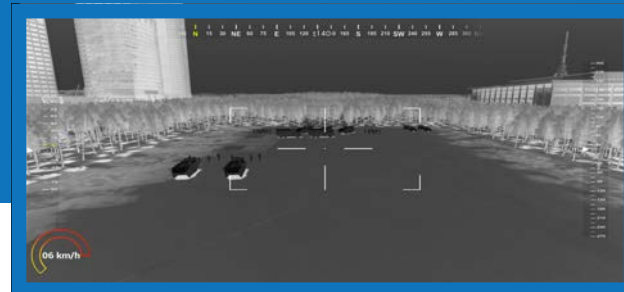
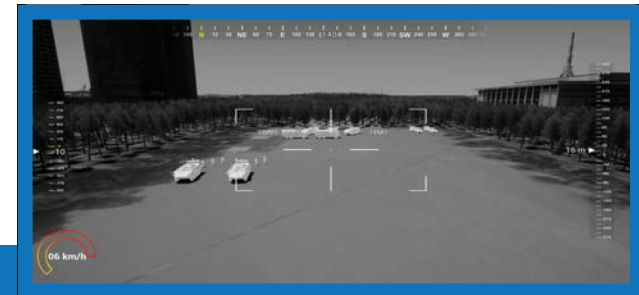
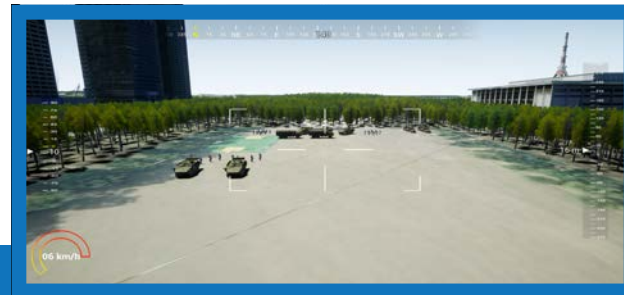
2. White highlight

3. Black highlight



# Implementation of Virtual EO/IR sensor functions

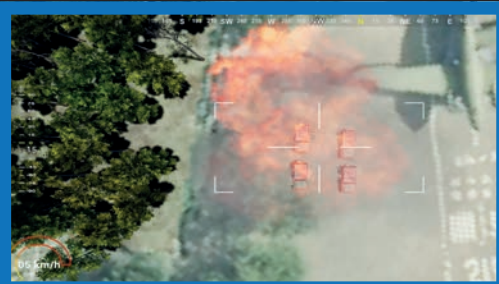
Development and application of virtualization technologies of EO/IR camera images for performing diverse kinds of tactical training, including monitoring and patrolling during the day and at night and target identification training



# Applications

## - National Defense

Realistic education and training reflecting a variety of scenarios, including control education/training, monitoring, patrolling, tracking, and targeting



- |   |   |
|---|---|
| 1 | 2 |
| 3 | 4 |

1. Monitoring training
2. Patrolling training
3. Targeting training
4. Control education training

# Applications – Public Sector/Disasters

Improving the operability of equipment through learning in dangerous situations in the public sector and during disasters



1

2

1. Fire suppression/extinguishing

2. Facility safety check

3

4

3. Forest management

4. Rescue

**D2** INNOVATION