

# Swarm Drones Technology

For Military Applications By ROPPOR

“A game-changer for battlefields”



The swarm drones technology presented here is realized by ROPPOR.

ROPPOR is an **advanced drone operating platform** developed by ChemEssen.

ROPPOR was launched commercially in December 2017. On April 3, 2018, the live demonstration of twenty swarm drones was successfully performed in the Government Complex Sejong, South-Korea.

Thousands of people witnessed the demonstration together with many VIPs including the chief of the Korean army, congressmen, and high-level officials from the government organizations & the Blue House (the Korean presidential residence).

A man in military camouflage is shown in profile, looking at a laptop. The laptop screen displays a map or interface. In the background, a large number of drones are flying in a swarm pattern against a dark sky. The text is overlaid on the image.

“Hundreds or thousands of drones  
can be controlled by a single operator.”

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Thanks to our proprietary wireless network technologies, the number of controllable drones is actually limitless if no video streaming is required. The video streaming is frequently unnecessary in many military drone operations.

“Control drone swarms from tens or hundreds of kilometers away.”

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In fact, the drone swarms can be controlled remotely without distance limit since ROPPOR controls drones with mobile telecommunication (3G or 4G) networks. This became possible thanks to our proprietary smart hardware module installed on the swarm drones.

As long as 3G or 4G networks are available, the drone swarms can be controlled from anywhere in the world, even from the other side of the globe.

In the absence of 3G or 4G networks, a dedicated long-range wireless network (100+ km) can be constructed exclusively for operating the swarm drones with ROPPOR.

A hand is shown in the foreground, clicking a mouse. In the background, a swarm of several black quadcopter drones is flying in a dark, hazy environment. The drones are arranged in a loose formation, with some larger than others. The overall scene is dimly lit, with a yellowish glow from the mouse click and the drones' lights.

“Control drone swarms with mouse clicks.”

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Set up the flight path and the target area with ROPPOR software and the computer map. The drone swarms will autonomously fly accordingly and accomplish the military mission. Just a few mouse clicks are required.



“Monitor critical areas in real-time.”

Send multiple reconnaissance drones to the multiple surveillance areas. Multiple live video streams in high resolution transmitted from the multiple drones are then provided simultaneously. Situations of the multiple critical regions can be monitored in real-time.



## “Autosave securely.”

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All the video streams and other technical data acquired from the drone operations are stored automatically on a dedicated server for later inquiries – they are never lost even if the drone crashes due to an unexpected accident.

The stored video files and technical data are protected under an advanced information security system against unauthorized accesses.

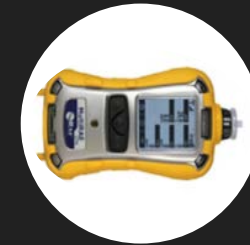
“Attach military equipment as needed.”



Perform various different military operations by simply attaching various different military equipment such as small bombs, CBR (chemical, biological, and radiological) sensors, decontamination sprayers, EO/IR (Electro Optical Infra-Red) cameras, etc.



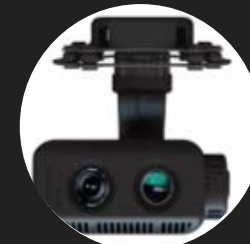
Small Bomb



CBR



Decontamination Sprayer



EO/IR Camera



A swarm of approximately 15 drones is flying in a formation over a battlefield. In the foreground, the silhouettes of several soldiers are visible, some holding rifles. The background is a hazy, orange-tinted sky, suggesting a sunset or sunrise. The overall scene is dark and dramatic, emphasizing the military application of drone technology.

# “The heart of a game-changer for battlefields in South-Korea.”

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The Republic of Korea Armed Forces declared the dronebot troops based on our swarm drones technology as the heart of the game changer for the future battlefields.

The dronebot troops are scheduled to be deployed as early as the first half of 2019.



# ROPPOR



Contact Us

**ROPPOR Website**

<https://www.roppor.com>

**ChemEssen Website**

<http://www.chemessen.com>