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Application of Combining Unmanned Vehicles and IBAC Mobile for Military Biodefense

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Importance

The biological pathogens released by the enemy on the battlefield may cause a health threat to humans through the transmission of air or droplets. Therefore, we also highlights the importance of sampling, monitoring, and research on biological aerosols in biodefense.

Highlights

- The application of unmanned vehicles can expand the energy protection for enabling rapid actions in many aspects of military biodefense.
- For various battlefield environments, a real-time detection and sampling system for biological aerosols that combines unmanned vehicles and IBAC mobile, which can perform system monitoring and unmanned sampling.

Innovation

- The unmanned vehicles not only served as surveillance and reconnaissance, but also used in attacks today.
- Instantaneous Biological Analyzer and Collector (IBAC) : a real-time detection and sampling system for airborne biological aerosols (eg. spores, viruses, and protein toxins).
- The unmanned vehicles combinated with IBAC-1 is used to collect biological aerosol samples on battlefields.

Core Mission

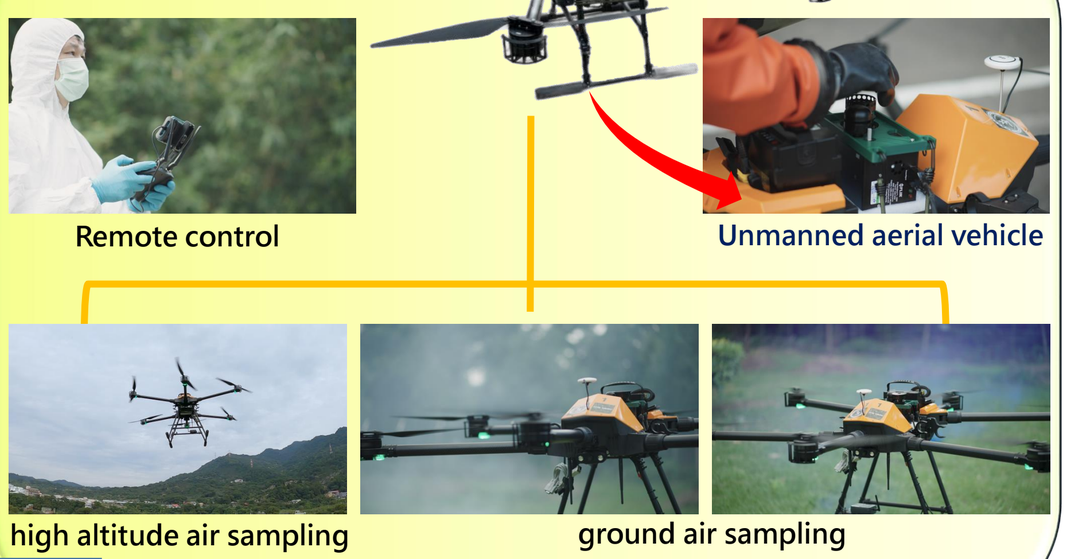
- Development of rapid detection techniques
- Establishment of biological epidermic disaster response mechanism

Unknown pathogens in air

PAST

PRESENT

■ Sampling by the unmanned ground vehicle and IBAC 1



■ Sampling by the Unmanned aerial vehicle and IBAC 1

Real time detectiion

next-generation gene sequencing (NGS)

microbial culture identification

mass spectrometer analysis