

# NSF AERPAW: Platform Overview, Digital Twin Based Experiment Workflow, and Research Examples



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## PLATFORM OVERVIEW

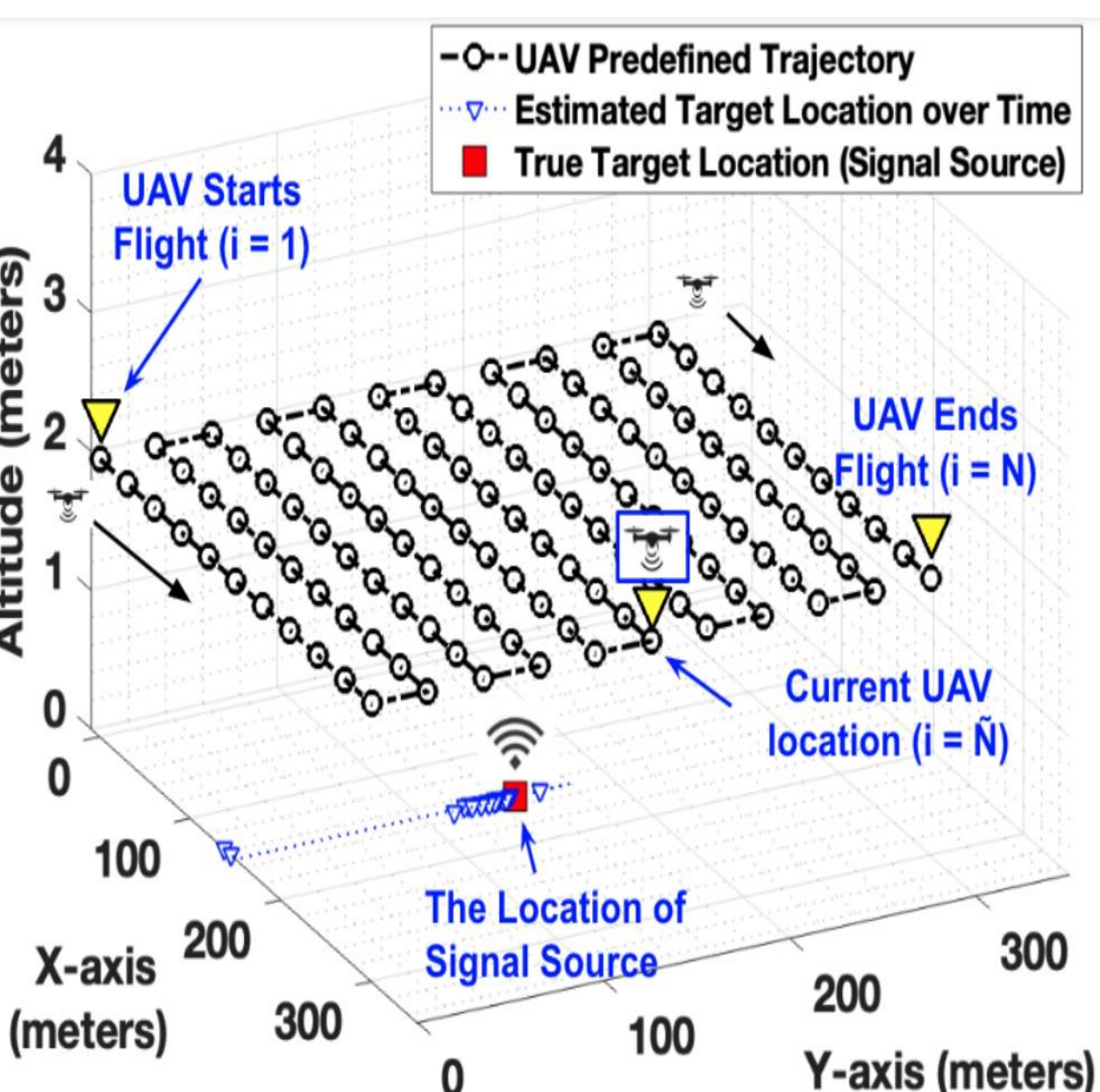
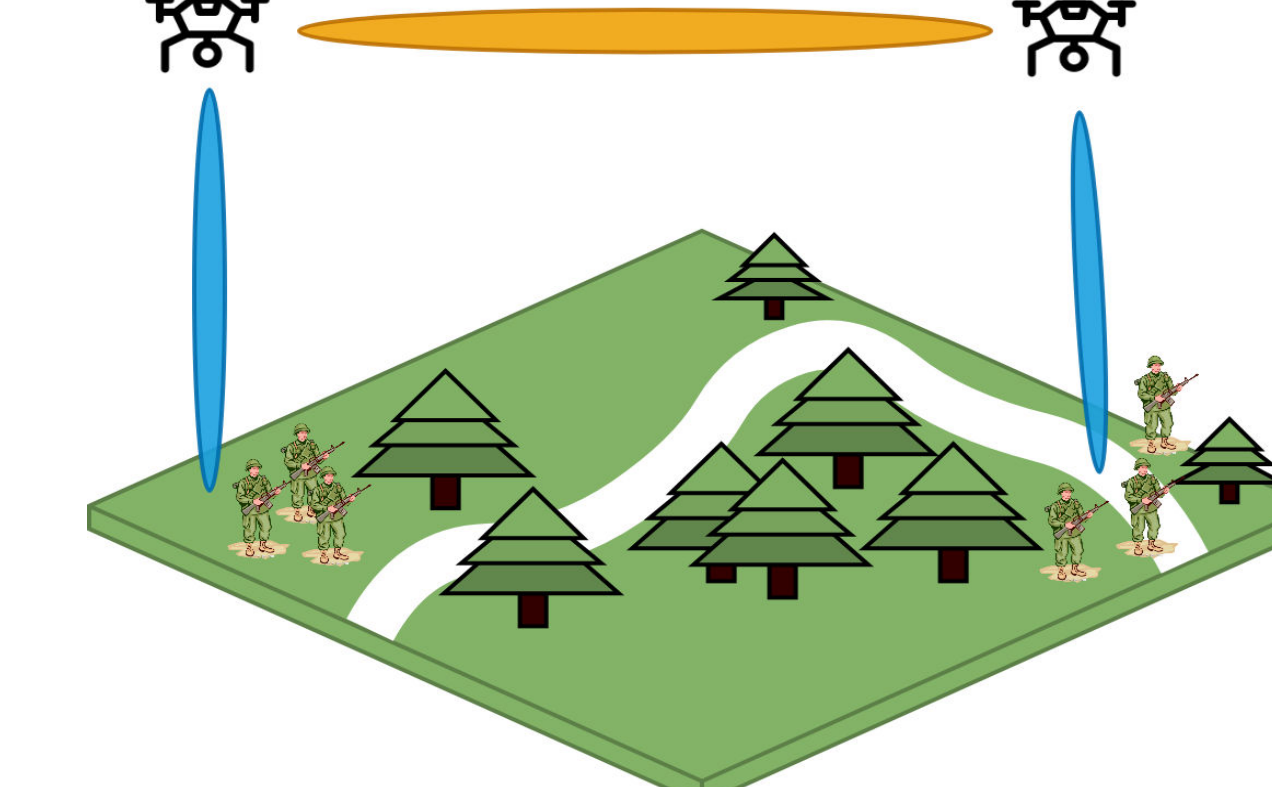
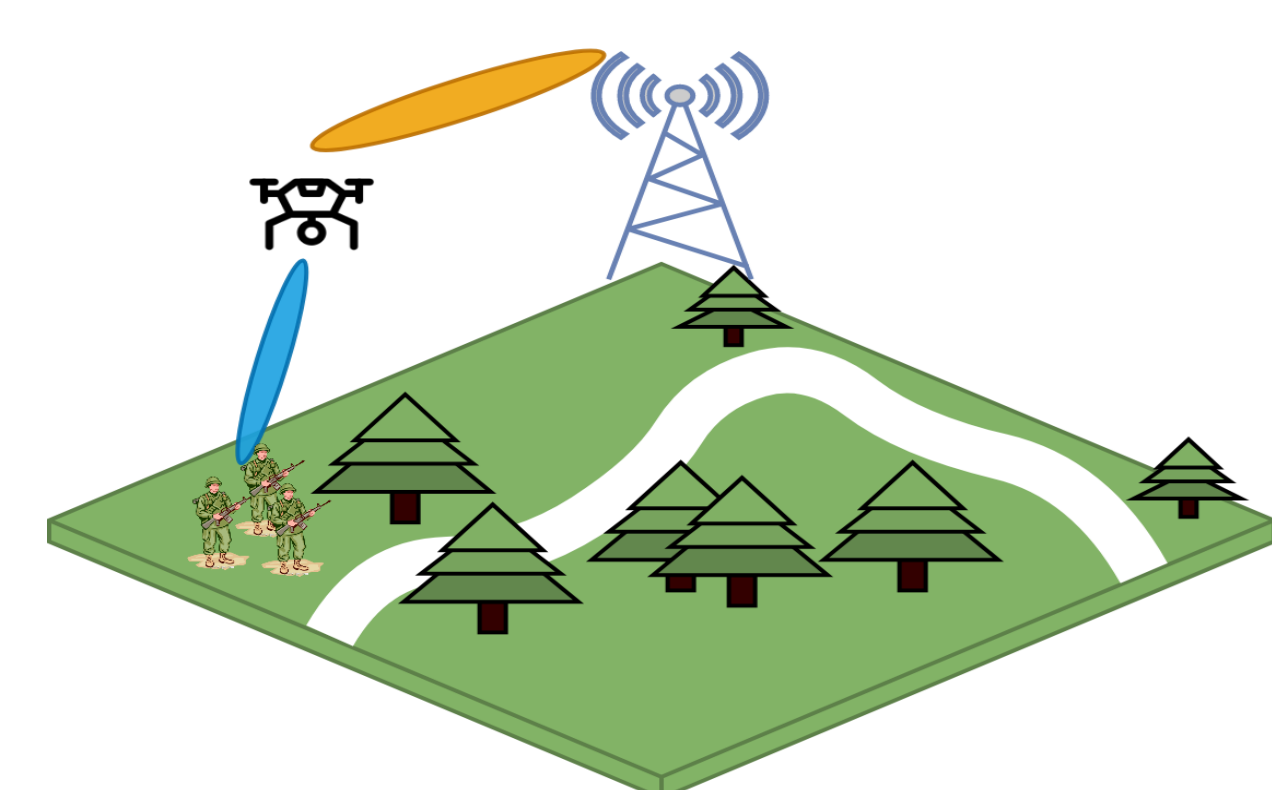
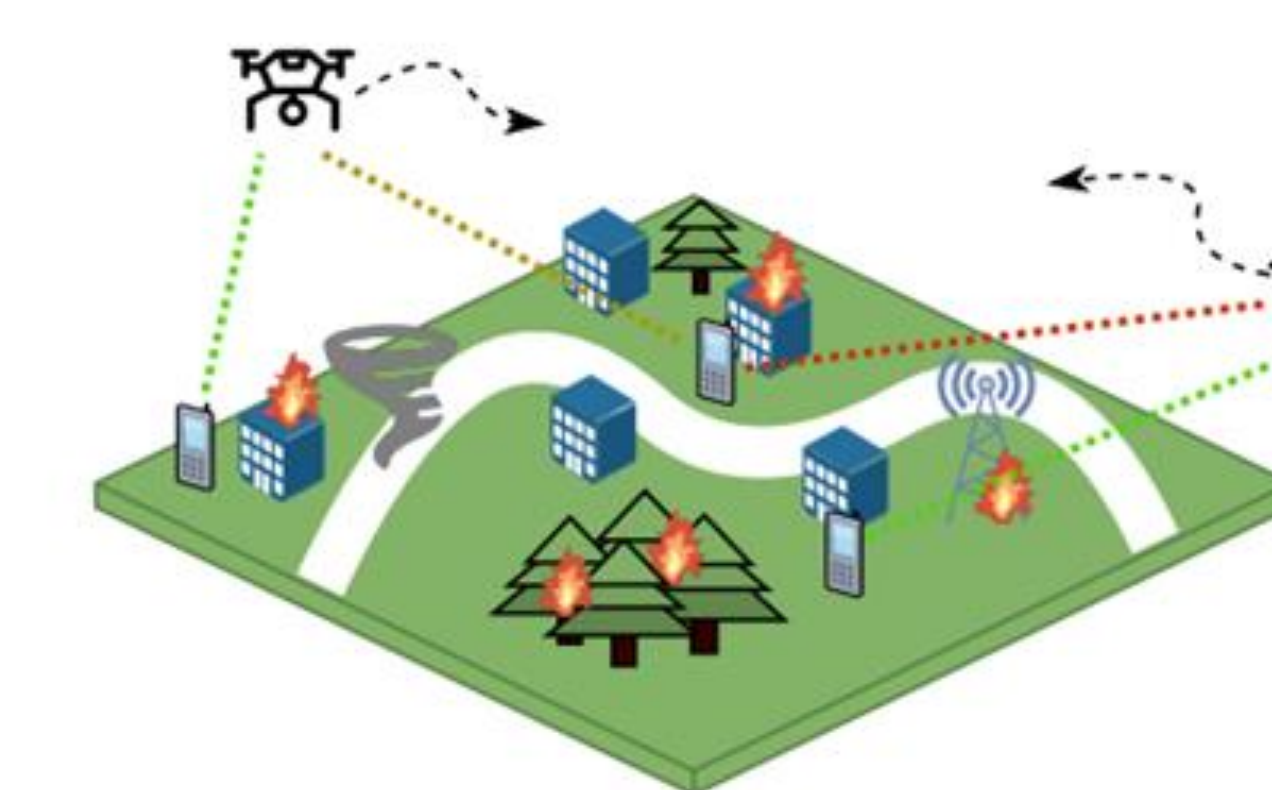
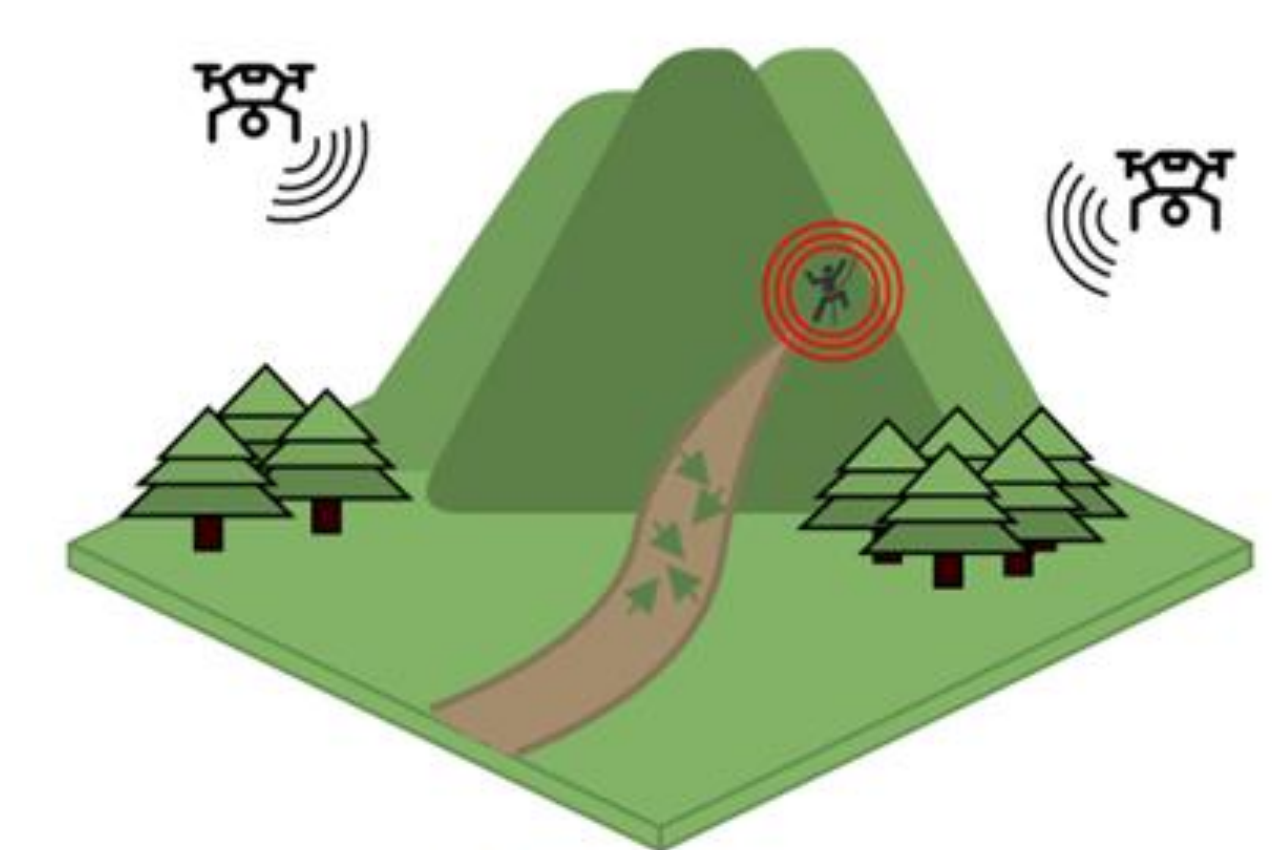
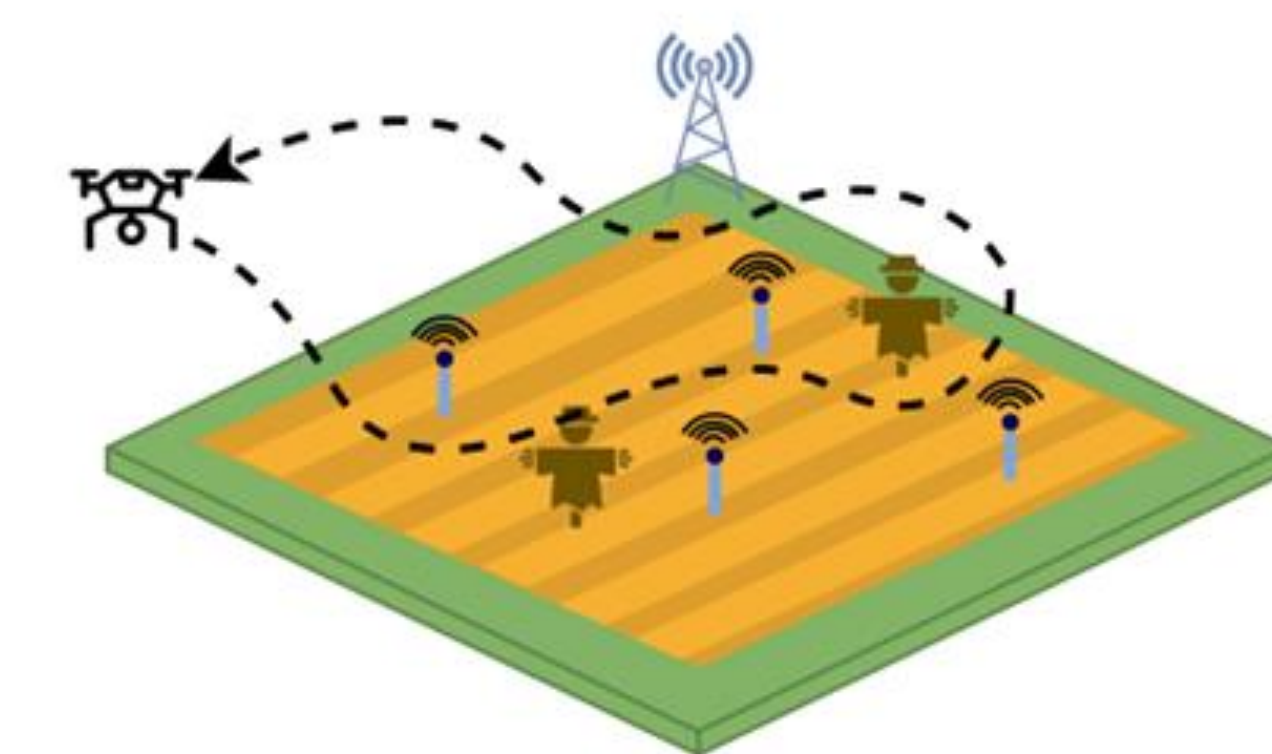
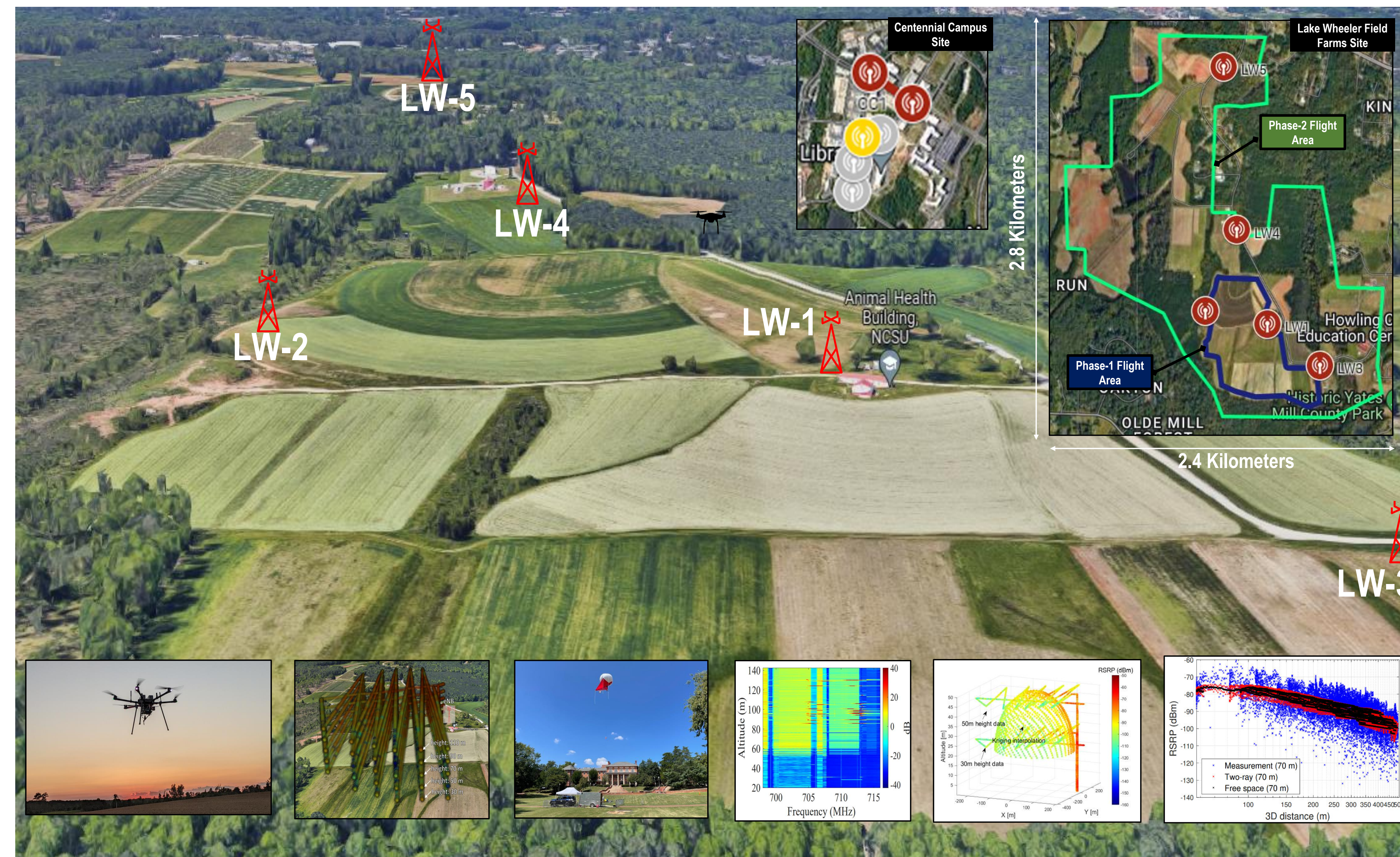
- Aerial Experimentation and Research Platform on Advanced Wireless (AERPAW), is one of the four PAWR platforms funded by NSF.
- AERPAW supports remotely-programmable experiments with software defined radios (SDRs), commercial wireless equipment, and custom-designed programmable drones designed by researchers and students at NC State
- All public and private entities (academia, industry, government) are welcome to use the facility

## AERPAW DIGITAL TWIN

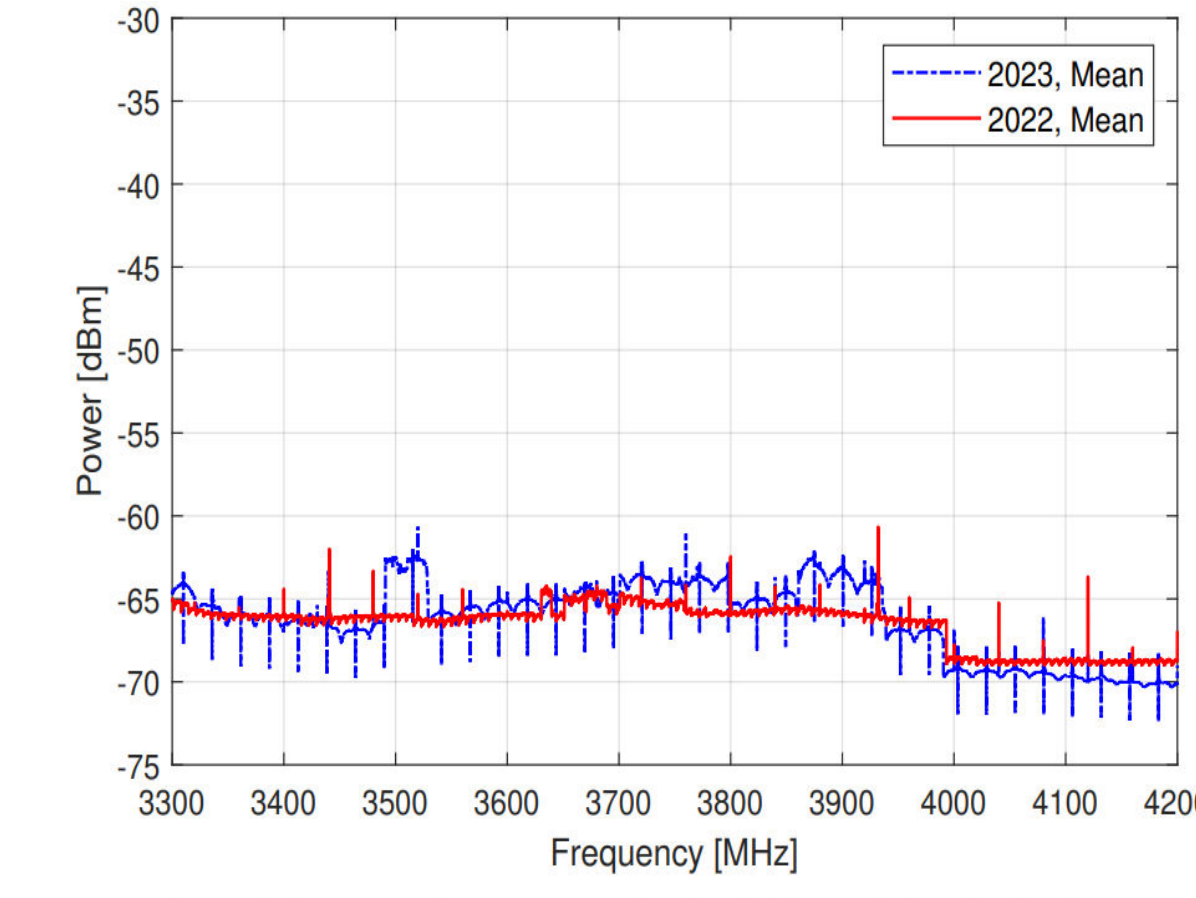
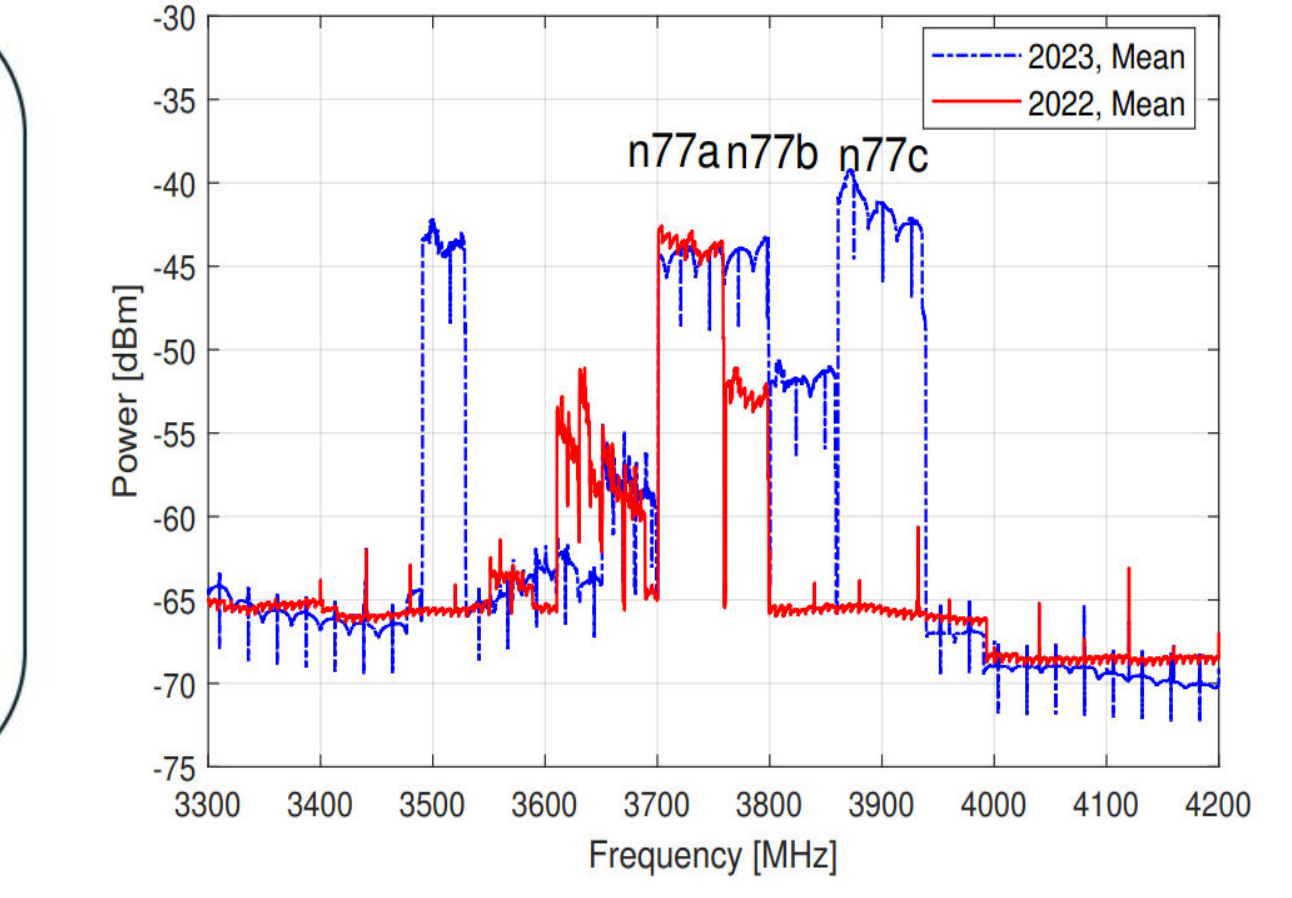
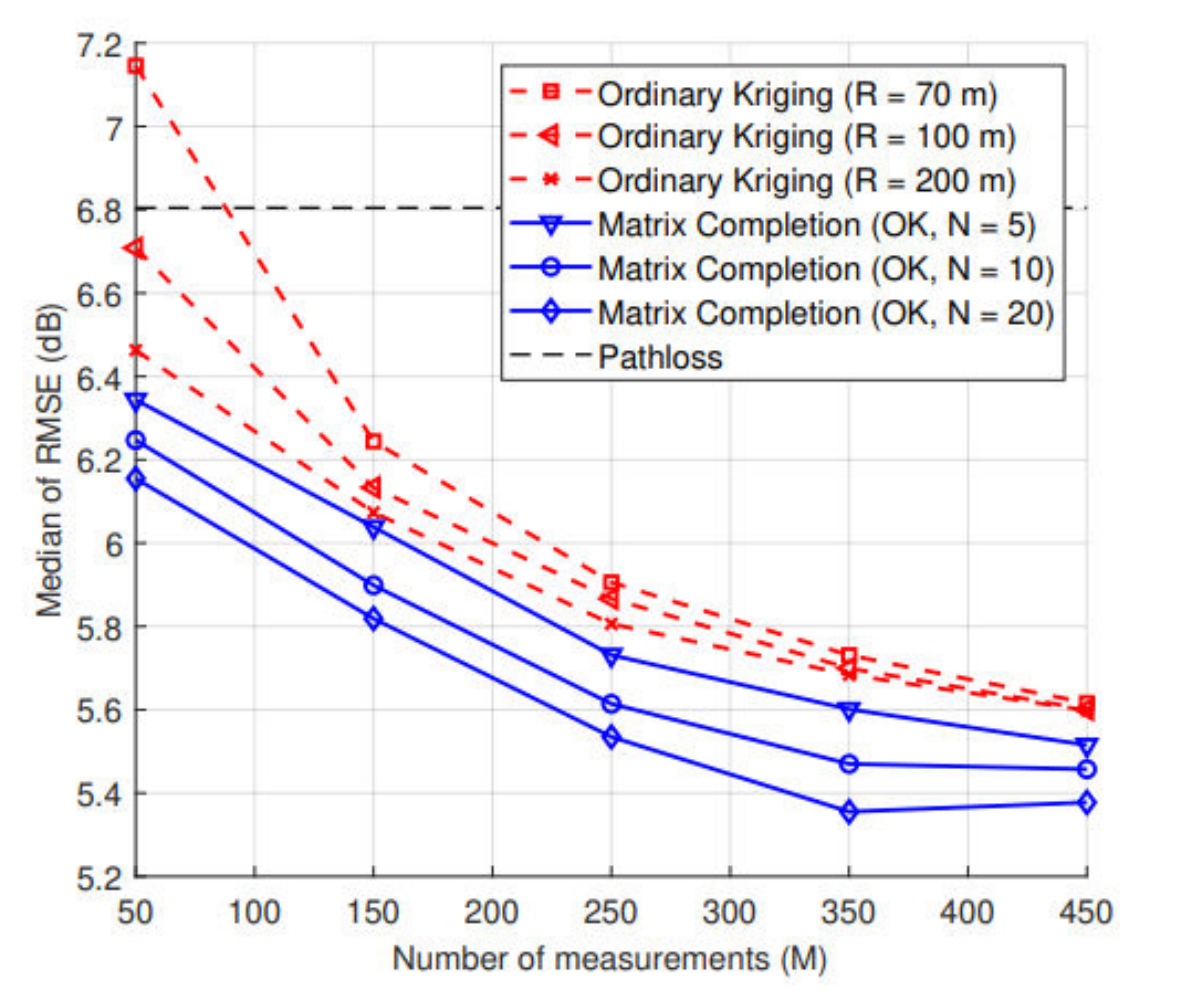
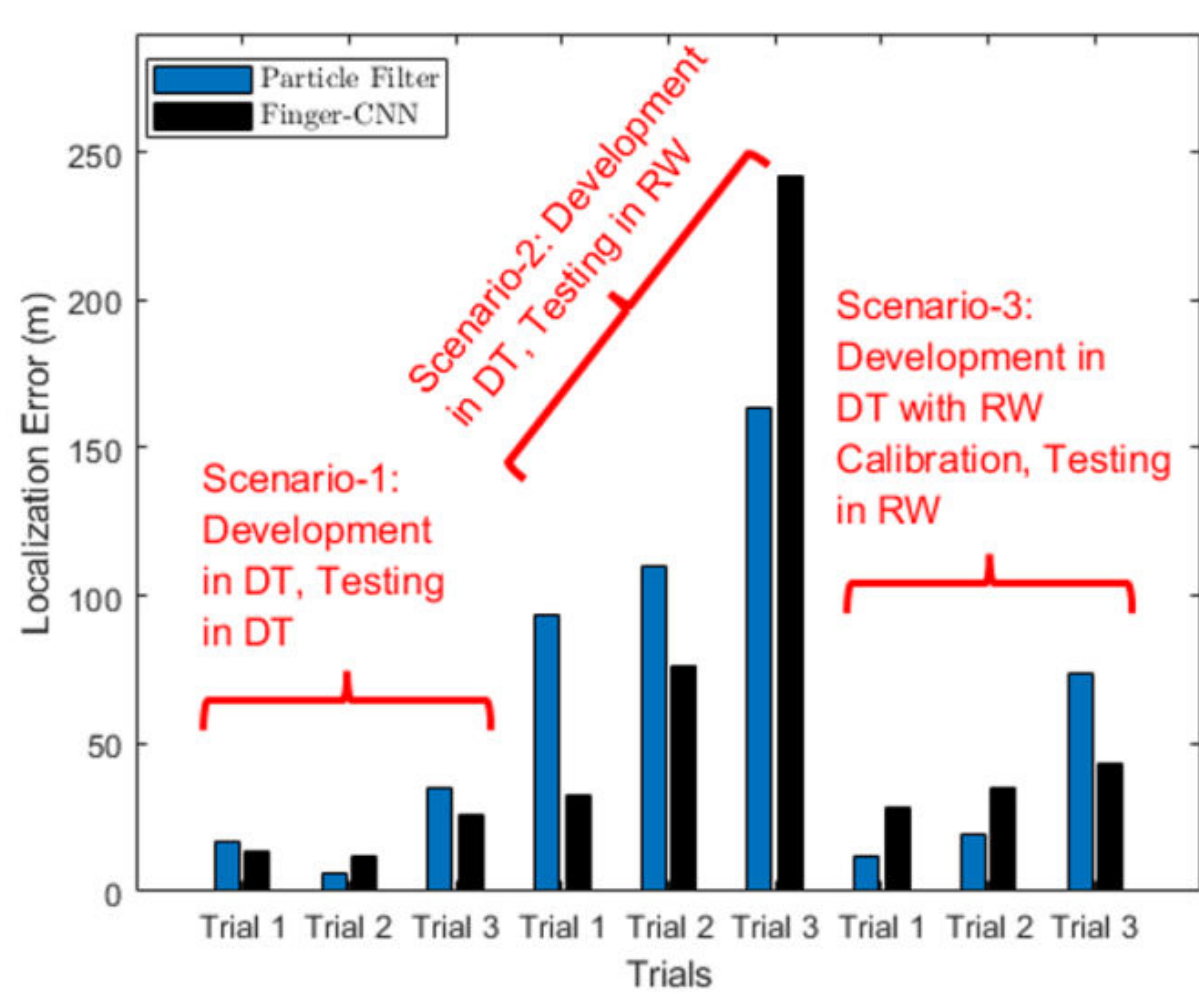
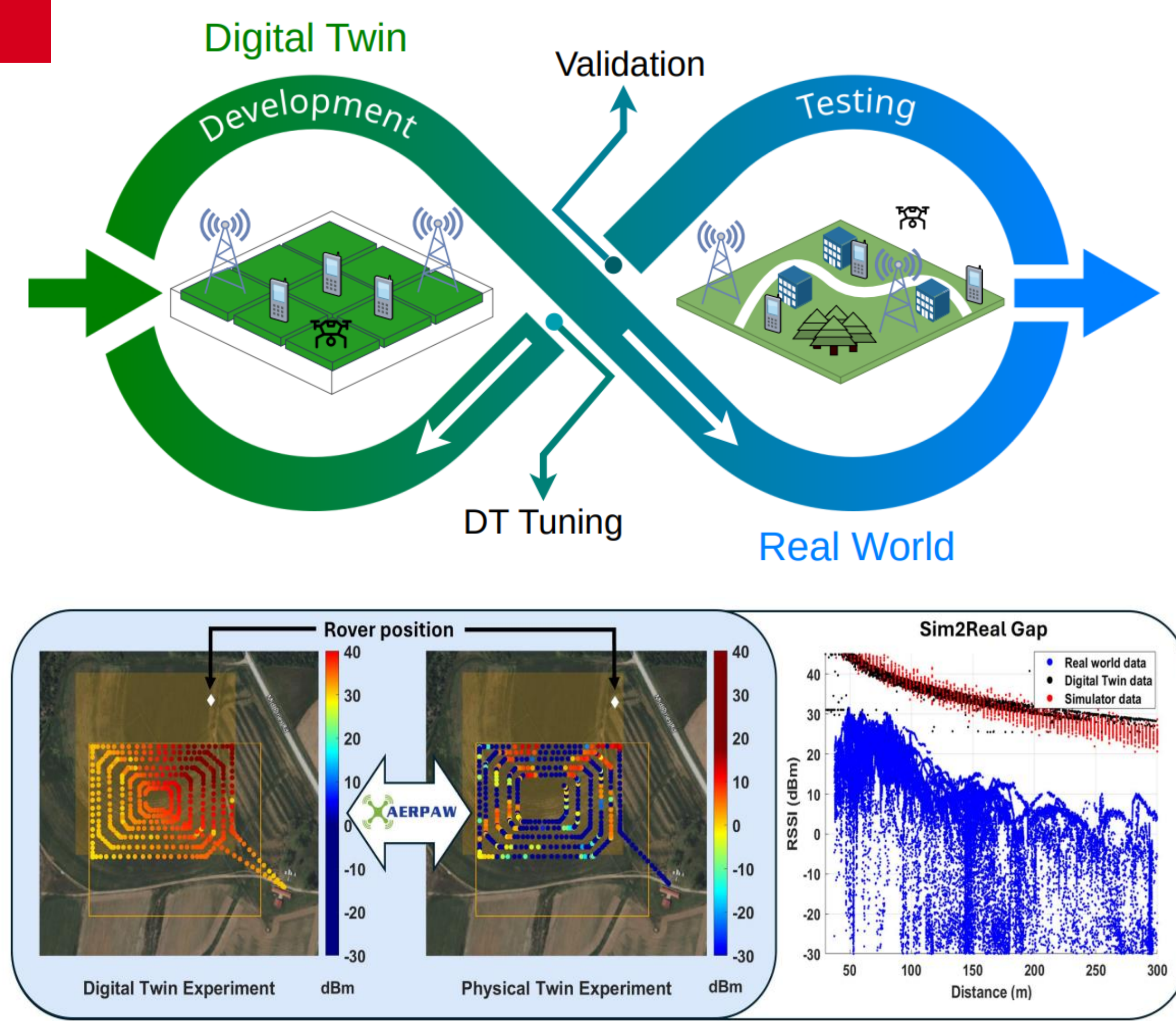
- Our drones and radios (4G/5G) are fully programmable
- Canonical experiments are developed remotely in software containers in AERPAW's digital twin
- Experiment containers can be moved seamlessly between digital twin and testbed (physical twin) environments
- Bring your own device and custom experiments supported

## REPRESENTATIVE RESEARCH EXAMPLES

- AERPAW Find a Rover (AFAR) Challenge, 3D spectrum measurements and modeling, 3D spectrum interpolation



Eagles (University of North Texas)  
 3 Minute Average Error: 32.2 m  
 10 Minute Average Error: 27.66 m



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