



Leveraging Aerial Robotics for Environmental Discovery

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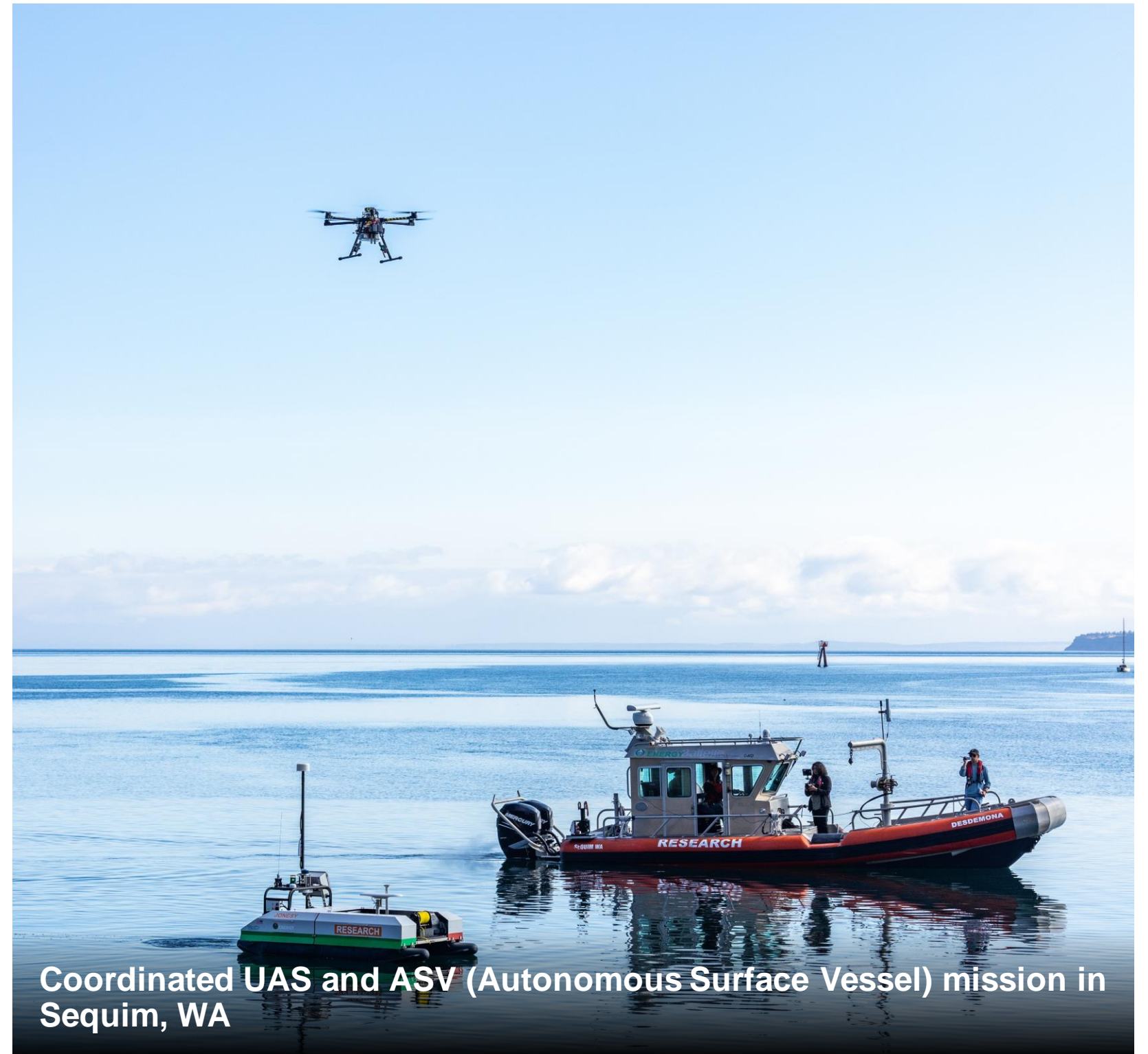


PNNL is operated by Battelle for the U.S. Department of Energy



sUAS Work at PNNL

- Aerial Imagery (RGB, Thermal, Hyperspectral)
- Photogrammetry
- Radiation Detection
- Sample Collection
- Radio Relay
- AI/ML Edge Analytics
- Subsurface Mapping
- Fish Tag Monitoring



Robotics and Autonomous Systems Lab (RASL) sUAS



Skydio 2
MTOW: 1.75 lbs



Freefly Alta X
Maximum Take-Off Weight (MTOW): 76.9 lbs



Aurelia X8 MAX
MTOW: 52.7 lbs



Aurelia X6 (qty:3)
MTOW: 36 lbs



BoxBotix Mercury
MTOW: 15.1 lbs



SwellPro SplashDrone 4
MTOW: 9.2 lbs

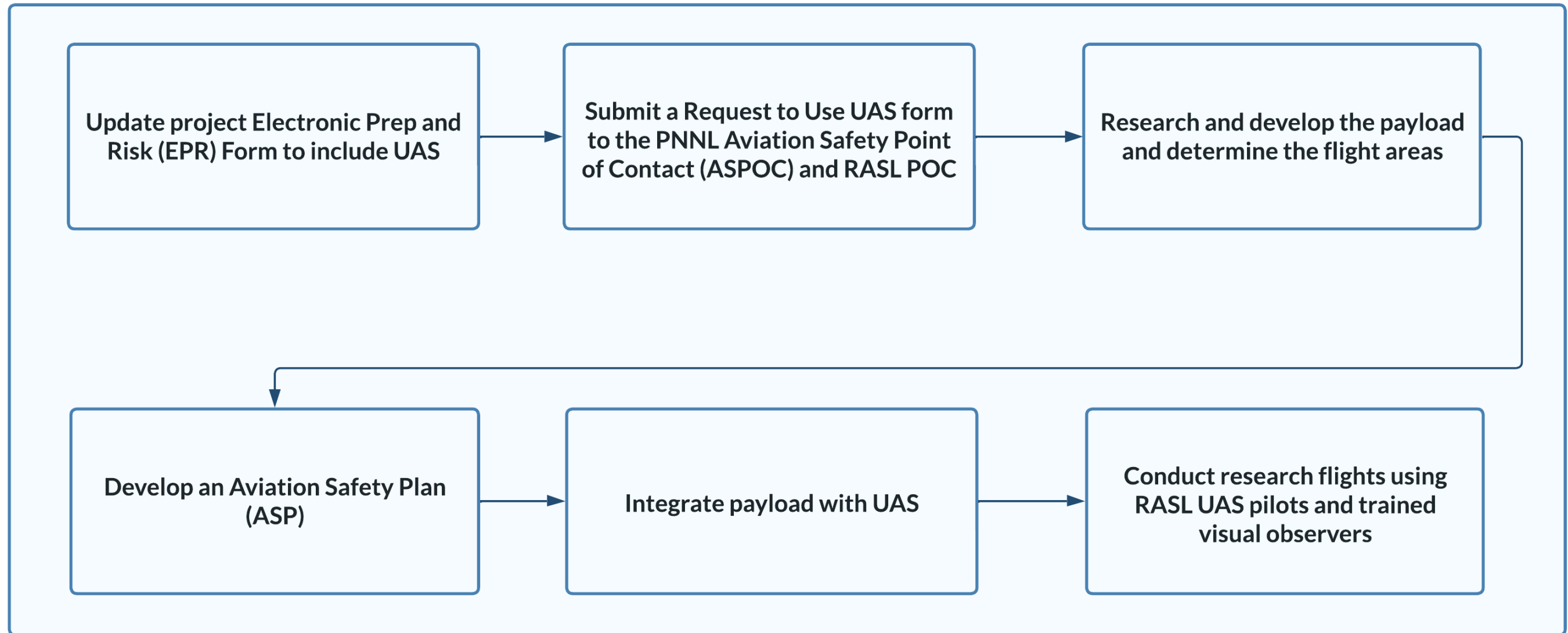


Holybro X500 V2 (qty:4)
MTOW: 5 lbs



X2-V (qty:3)
MTOW: 5 lbs

PNNL UAS (Unmanned Aerial System) Project Use Flow Map



Important Considerations

- US NDAA Compliance
- FAA COA vs. Part 107
- RF Spectrum Management
- Data Collection and Processing
- Site Specific Restrictions
- Payload Impact to Flight
- Ground Control Station Impact on Operations/Safety
- Emergency Procedures



Flight Records

- Flight/Battery Logs
- Aircraft Logs
- Payload Data
- Aircraft Video/Photos
- DOE OAM Reporting



Large UAS Operations



NASC ArcticShark TOW: 650 lbs

Wingspan: 22 ft; Max Payload: 70 lbs; Endurance: 8+hrs with 12 lbs payload



Thank you

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