

END STATE
S O L U T I O N S

UAS Airspace Integration and Operations



Charlton Evans, CEO

cevans@endstatesolutions.com

(509) 310-3980

Russ Torgerson

Director, Aviation Services

rtorgerson@endstatesolutions.com

(907) 942-4880

Chevron and ESS Proprietary

Overview

- **What** - UAS integration to the NAS in the Gulf Coast region
 - Pipeline patrols up to 12NM (for now!)
- **When** - TBD per Chevron planning, not immediately
- **Why**
 - Routine patrols and required per regulation
 - Improved data capture-AI driven
 - FAA confidence in safety case
- **How....**

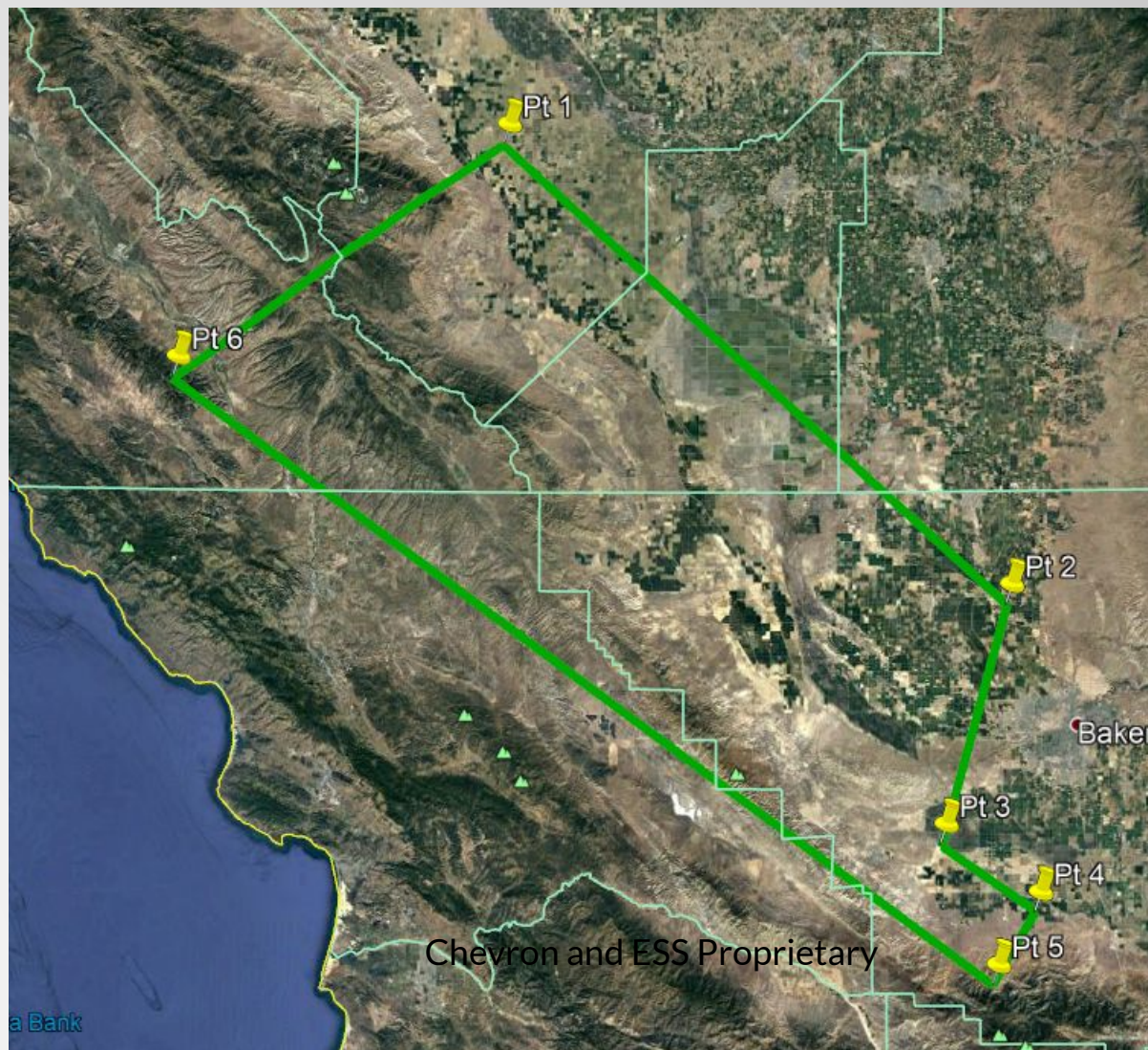
AiRanger History of Integration

- 5+ years to airworthiness and operational approvals
 - 2 OEMs, Multiple suppliers
- On board DAA (Echodyne radar)
- Some historic accomplishments:
 - DAA Approval for 91.113(b)
 - 44807 Exemption for Airworthiness
 - Like a TC for 91 Operations
 - Stress test the system starting in Dec 2024

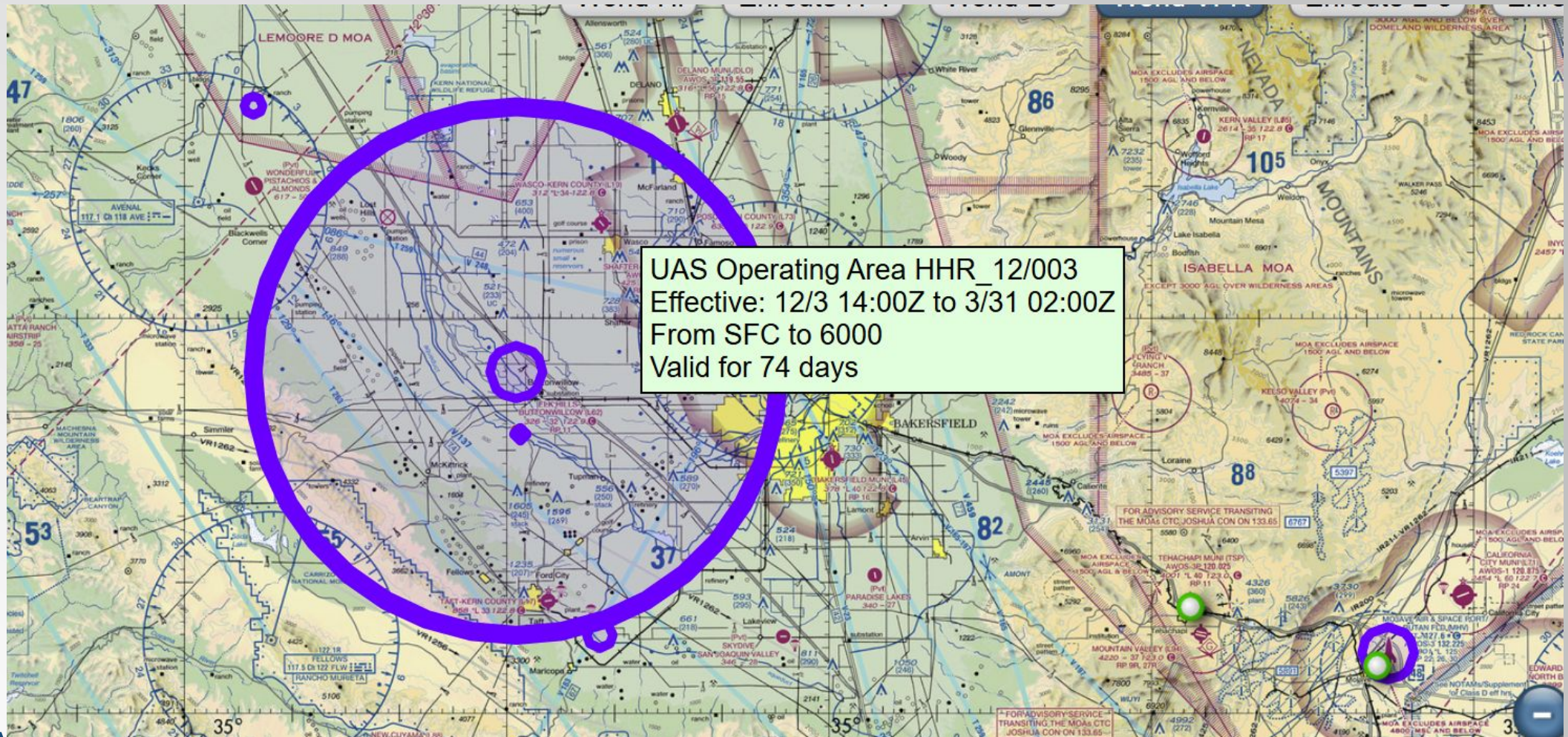
AiRanger History of Integration



Current Ops

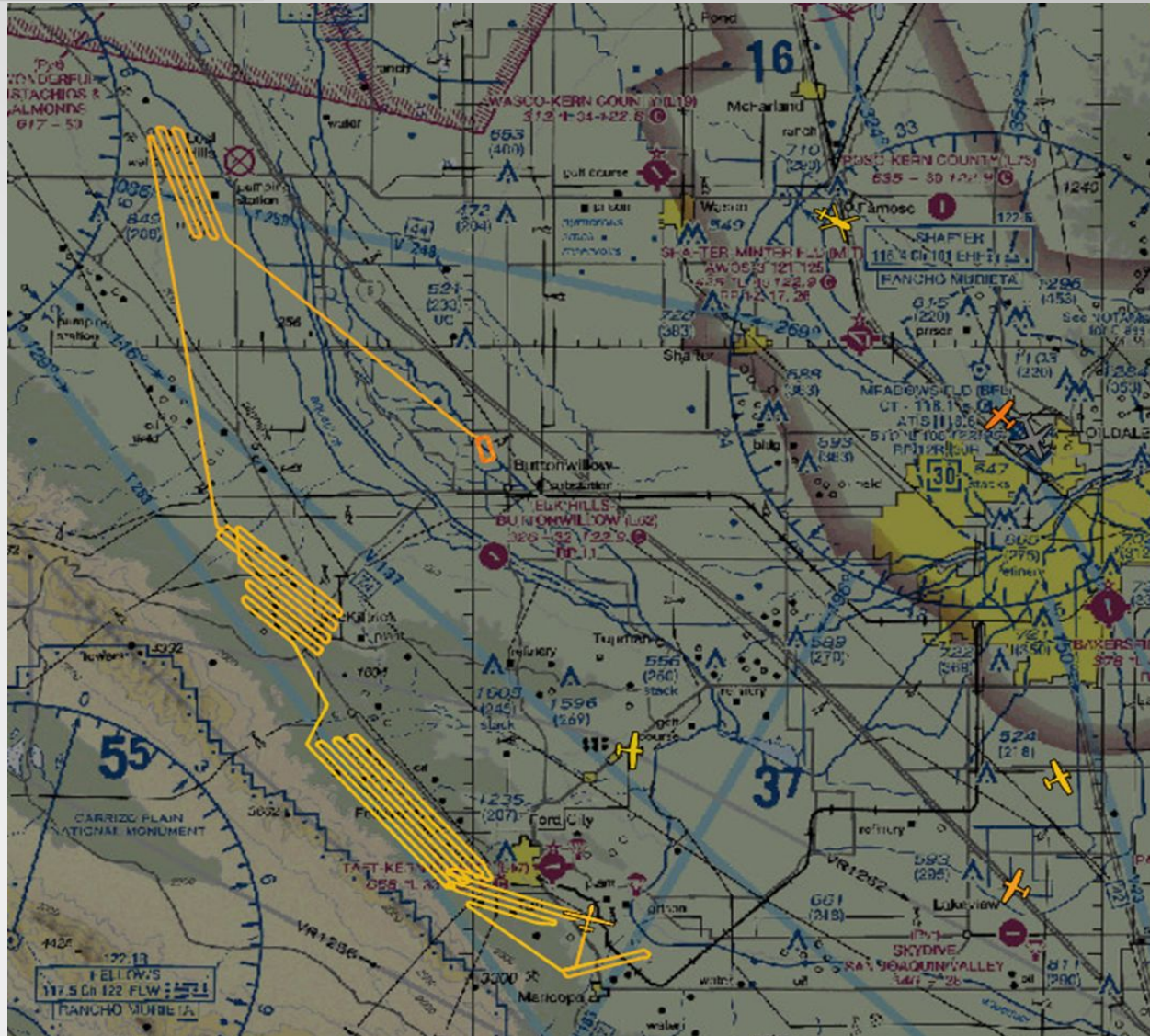


Current Ops



Current Ops - Real Time Airspace Integration

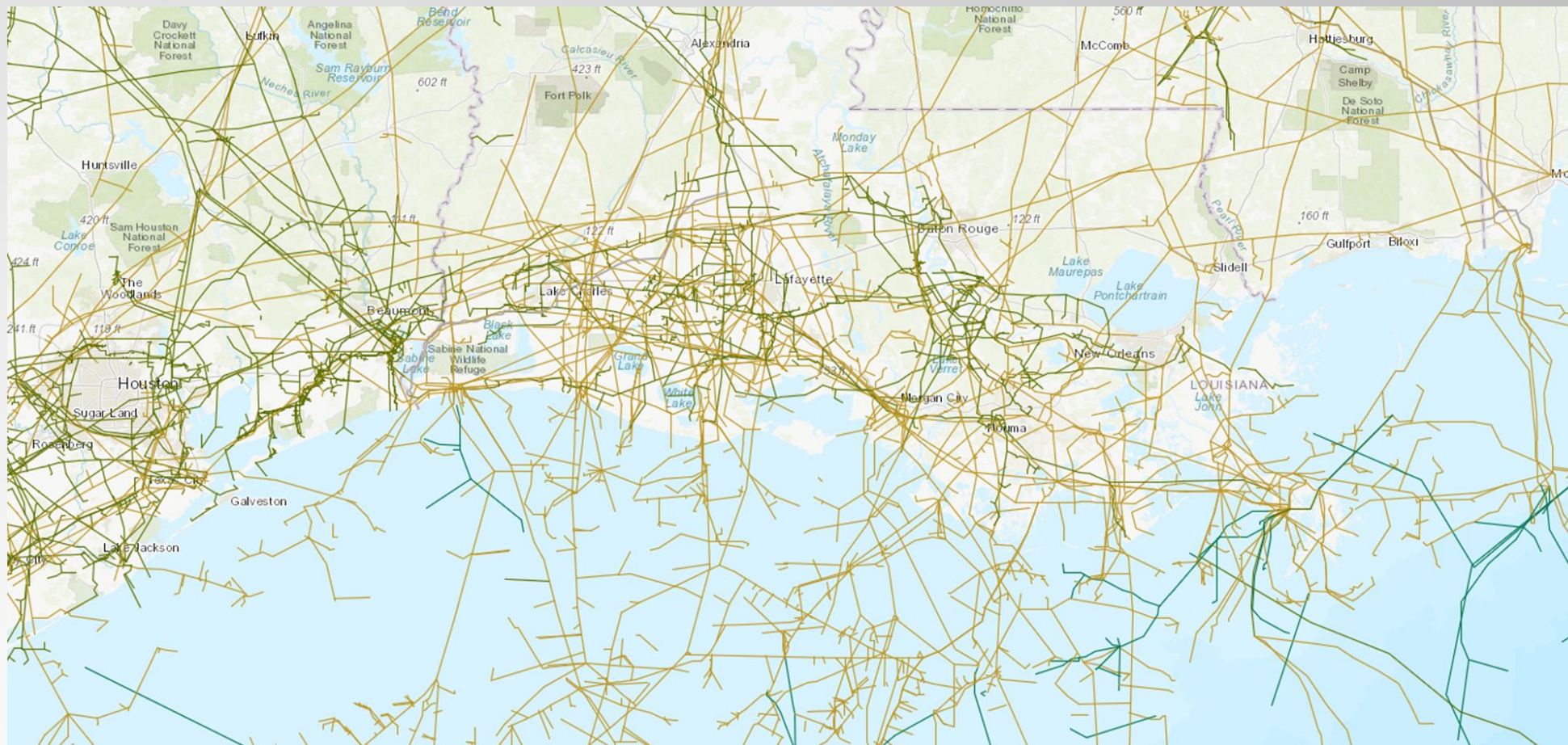
SVJ ops on
12/06/2024
3500' AGL



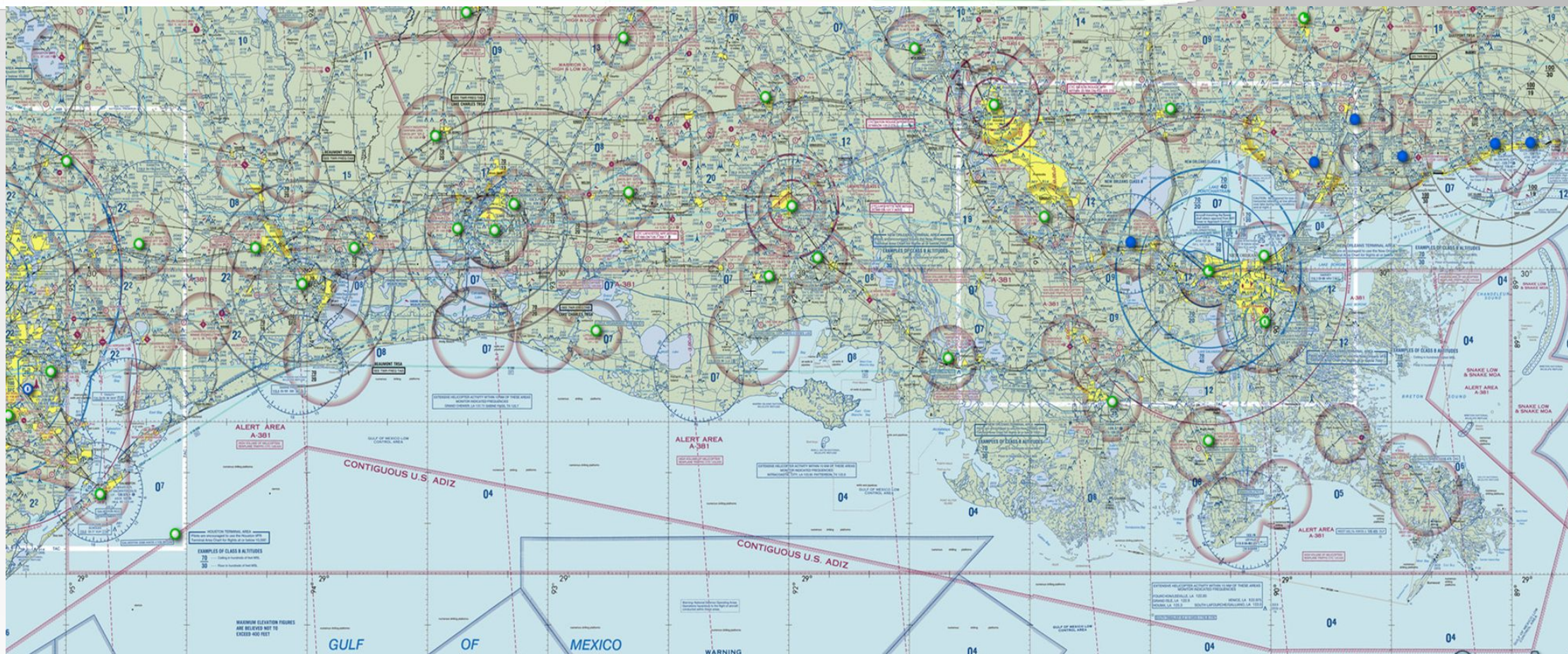
Current Ops

- Day VFR only
- Launch and recover under visual observers
- Operating altitude - 3000'-5000' AGL true BVLOS
- Cruise speed - 60-70 Kts
- Flight Plan
- ATC Comms
- Commercial pilots
- Sortie time: 6 plus hours

Future Ops



Future Ops



Risk Mitigation

- Well-defined operational volumes and procedures
- Real-time deconfliction through DAA and communications protocols
- Extensive testing and validation of systems before deployment
- Clear contingency procedures for system anomalies
- Collaborative approach and transparency with FAA

Airspace Integration Normalization

- Propose developing shared airspace procedures together
- Establish communication protocols between UAS and helicopter operators (currently comms on CTAF, ATC)
- Create joint working group to address concerns and optimize integration
- Share operational data to continuously improve safety measures

*Helping clients see through the
smoke and achieve their desired
END STATE.*



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cevas@endstatesolutions.com
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