



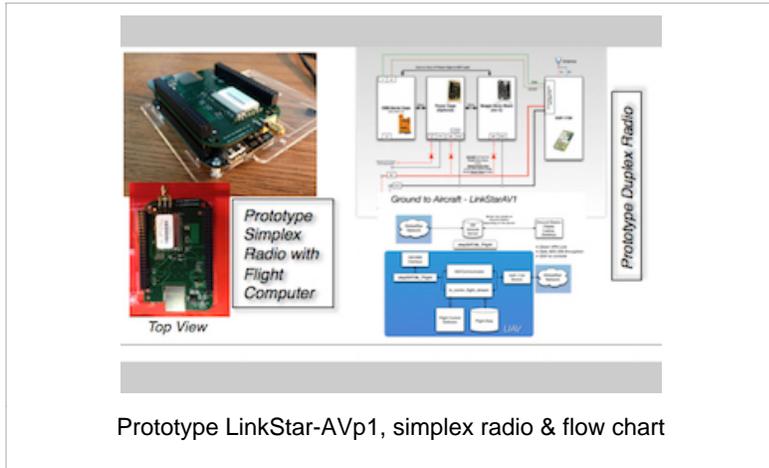
# A low cost, secure radio communications system for UAVs

sci\_zone

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## OBJECTIVES

- Identification of System Level Requirements.
- Prototype (brass board) Hardware Development
- Is\_comm\_flight\_stream Development
- Implementation of Baseline Secure Communications Link
- Integration with QS/VMS and QS/Xen
- Technology Demonstrations
- Bi-Monthly Status Reports
- Development and Delivery of the Final Report



## ACCOMPLISHMENTS

### NOTABLE DELIVERABLES PROVIDED

- System level requirements were developed for NASA and UAS community.
- A prototype of the LinkStar-AVp1 duplex radio system was created.
- Prototype radio supports UAS payload data and control data
- Prototype radio supports secure CNPC under controlled conditions.
- A prototype simplex radio with flight computer was developed.
- Radios work beyond line of sight.
- Prototype communications software Is\_comm\_flight\_stream was developed
- Is\_comm\_flight\_stream provides secure communications
- Software contained on secure virtual machine, integrated with LS/VMS
- Software can work with any radio system.
- Prototype system on remote, internet accessible demo computer
- Tech demos have led to matching funds for research/commercialization.

### KEY MILESTONES MET

- System requirements developed
- Prototype/brassboard of LinkStar-AVp1 created
- Prototype of simplex radio system created
- Prototype of Is\_comm\_flight\_stream created
- Integrated software with LS/Xen and LS/VMS
- Tech demos at NASA, conferences and customers.
- Bi-monthly status reports submitted
- Final report submitted.

## FUTURE PLANNED DEVELOPMENTS

### PLANNED POST-PHASE II PARTNERS

- NASA
- Boeing
- Globalstar
- DJI

### PLANNED/POSSIBLE MISSION INFUSION

- NASA test flights
- Boeing RADSat Program
- DARPA high altitude test balloon flight
- DJI related product rollout
- Globalstar product rollout
- State of Michigan matching funds

### PLANNED/POSSIBLE COMMERCIALIZATION

- NASA Programs
- Government customers
- Boeing UAS and Satellite Programs
- Utility, Agriculture, and Oil Industry
- DJI customers
- Globalstar Customers
- UAS "Prosumers"
- General Aviation

CONTRACT (CENTER)	NNX15CC68P (GRC)	SOLICITATION-PHASE	SBIR 2015-I
SUBTOPIC	A2.02 Unmanned Aircraft Systems Technology	TA	N/A

