

**Stratospheric Observatory for Infrared Astronomy
(SOFIA)
Ball Aerospace Conformal AIRLINK Antenna
System, Statement of Work (SOW)**



Revision 1.1
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1. Background

a. The National Aeronautics and Space Administration (NASA) Stratospheric Observatory for Infrared Astronomy (SOFIA) (Boeing 747SP aircraft) is being modified to include InMARSAT communications. Because of the nature of current aircraft modifications NASA has chosen to install a custom AIRLINK conformal antenna system from Ball Aerospace.

2. Scope

a. The scope of work shall include engineering design, equipment purchase, installation services and documentation of the Ball Aerospace AIRLINK High Gain Antenna System.

b. The selected vendor shall be responsible for the engineering design of the AIRLINK antenna plates specifications which at a minimum include matching the aircraft radii and creating a custom non-interference mounting bolt pattern.

c. The selected vendor shall be required to work within SOFIAs aggressive flight schedule and limited downtime.

3. Period of Performance

a. The current window of opportunity for the physical installation of the antenna system is mid-August through end-of-September. All engineering design, equipment purchasing and equipment delivery will have to be accomplished prior to this window of opportunity.

b. It is the selected vendors' responsibility to meet the stated window of opportunity for installation.

c. An exception to the complete physical installation requirement will be granted for delayed sub-components which will be installed inside the aircraft. Receipt and installation of the externally mounted and through hull components is the crucial part of meeting the installation window of opportunity.

d. The window of opportunity for physical installation may change at the discretion of NASA for any number of reasons. NASA will be responsible for keeping the vendor updated with any schedule changes.

4. Place of Performance

a. All work shall take place at the Dryden Aircraft Operations Facility (DAOF) in Palmdale, CA.

5. Work Requirements

a. The vendor shall be responsible for the following tasks:

b. Kickoff: i. Vendor shall create a detailed project plan including schedule, documentation and engineering design plan, installation plan and test plan.

ii. Vendor shall present the project plan to the SOFIA Project Management team.

iii. Vendor shall coordinate with SOFIA Project Management to create an installation schedule. The schedule shall be agreeable to both parties.

c. Design Phase: i. Vendor shall work with the SOFIA Project team to gather requirements

ii. Vendor shall create a design package based on the collected requirements to be presented at the Preliminary Design Review (PDR) meeting

d. Build Phase: i. Vendor shall procure an AIRLINK High Gain Antenna Systems (HGAS) with the specifications approved at the PDR

ii. Vendor shall provide a method of accountability for all tools and materials brought onto NASA property

iii. Vendor shall install the AIRLINK HGAS system following standard safety practices, reference: Dryden Safety Requirements 01 35 14.11 40

iv. Vendor shall seal and paint the antenna plates per acceptable Boeing and NASA guidelines

v. Vendor shall install backing plate and all associated control units

vi. Vendor shall route and attach all cabling

vii. Vendor shall label all cabling per SOFIA wiring numbering schema

e. Documentation Phase: i. Vendor shall provide documentation which will cover the following areas (vendor may provide other documentation as deemed necessary): (all documents are deliverables, paper or electronic is acceptable forms of delivery) 1. Operation

2. Maintenance

3. Preventive Maintenance

4. Installation

5. Design

6. Parts Listing

7. Safety

8. Inspection

9. Testing Documentation and Results

10. Drawings: Mechanical and Electrical

12. Project Specification Certification Plan

f. Project Handoff/Closure: i. Vendor shall provide SOFIA Project Management two copies of all documentation

ii. Vendor shall present a review of the project covering all work done and any issues that may be outstanding to the SOFIA Project Team

iii. Vendor shall conduct a inspection of all work areas to ensure all tools and work materials are accounted for

iv. Vendor shall turn-in their badges

6. Schedule / Milestones

a. The list below consists of the initial milestones identified for the Ball Aerospace AIRLINK HGAS project. Actual dates will be set after the Period of Performance begins. Milestone payments occur when key milestones are met.

Item	Description	Date	Milestone Payment
I.	Period of Performance begin	2 weeks from Award date	N/A
II.	Kick-Off Meeting	March / April 2013 (one day)	N/A
III.	Design Meeting	April 2013	N/A
IV.	Preliminary Design Review (PDR)	April /May 2013	20% Milestone Payment with PDR approval
V.	Approval for HGAS purchase	April /May 2013	N/A
VI.	Critical Design Review	June/July, 2013	30% Milestone Payment with CDR approval
VII.	Inventory Equipment	October 2013	N/A
VIII.	Installation (SOFIA schedule driven)	Nov/Dec 2013	N/A
IX.	Ground Test / Certification (follows installation)	Nov/Dec	50% Final Payment upon completion and Government acceptance

7. Acceptance Criteria

- a. For the Ball Aerospace AIRLINK HGAS Project the acceptance of all deliverables will reside with the SOFIA Project Team lead. The team lead will also be the responsible party for signing off all tasks. The team lead will appoint appropriate personnel for inspecting the different phases of the project.
- b. Once all project tasks have been completed, the project will enter the review and closure stage. During this stage the vendor shall provide an end of project report to the SOFIA Project team. The acceptance and sign-off by the team lead will acknowledge acceptance of all project deliverables and that the vendor has met all assigned tasks.
- c. Any discrepancies involving completion of any project tasks or disagreements between SOFIA Project Management and the chosen vendor shall be referred to both organizations' contracting offices for review and discussion.

8. Other Requirements

- a. All vendor employees that will be working at the DAOF shall have to submit security clearance paperwork and receive a security badge for access to the DAOF and SOFIA.
- b. All Personal Protective Equipment (PPE) required by the Occupational Safety and Health Administration (OSHA) shall be the responsibility of the vendor.