NEW MEXICO TECH
SCIENCE · ENGINEERING · RESEARCH UNIVERSITY

Sole Source Application and Determination Form

A sole source determination is not effective until the sole source application for determination has been posted on the Purchasing website for thirty (30) calendar days without protest and is subsequently approved in writing by the Vice President of Administration and Finance.

1. Name of Department: ICASA
   Contact Name: Jordan Gonzales
   Phone: 575-517-7987
   Email: jgonzales@icasa.nmt.edu

2. Name of Prospective Vendor: L3Harris Technologies, Inc.
   Contact Name: Josh Miller
   Phone: 1-585-242-4368
   Email: Josh.Miller@L3Harris.com
   Estimated Cost: $42,338.50
   Duration (for Services or Professional Services – limited to four years): N/A

3. Purpose/need for purchase and detailed list of items of tangible property, services, or professional services:

The RF-410D is a software-defined radio frequency power amplifier built to reliably increase the range of RF communications. This particular amplifier is radio-agnostic yet will be paired with NMT's L3Harris PRC-117G radios in the Playas Research and Training Center (PRTC). ICASA and its customers rely heavily on RF Communications for event coordination and command & control (C2) of aircraft and ground-personnel. ICASA has observed and our customer has reported a weak signal strength while using our PRC-117G radios for long-distance communications. These RF-410D PA's will greatly increase the power of our outgoing signals and increase our effective range of communications. ICASA is requesting approval for sole source procurement of two RF-410D amplifiers and their supporting hardware (cable assemblies, power supplies, and transit cases).

4. Detailed explanation of criteria developed for this purchase:

The ICASA Operations Team has received reports from our event participants that RF transmissions from our primary command and control (C2) air-to-ground radios have poor range. We need to ensure that our customers have stable, unimpeded communication with their air assets to ensure range safety, situational awareness, and event coordination. Maximizing radio performance depends on various factors, some of which cannot be controlled (e.g. weather, receiver performance, etc). Of the ones that can be controlled, the Operations Team has utilized high quality radios, antennas, and feedlines for clean signal output. However, this is not enough and the radios are tied to a specific wave form and frequency. Therefore, increasing the output power is one of the few cost-effective solutions to improve performance. Our recommended solution is to increase the output power (variably) of our C2 radios from 10 Watts to 50 Watts using amplifiers from L3Harris. We recommend procurement of two (2) L3Harris radio amplifiers to be deployed with our PRC-117G radios.

5. Provide a detailed, sufficient explanation of the reasons, qualifications or unique capabilities of the prospective vendor that make that prospective vendor the one source for providing the items of tangible property, services, or professional services:

Tactical military-standard hardware like the RF-410 can only be purchased from L3Harris or their authorized resellers. ICASA has an ongoing relationship with an Air Force Sales Engineer from L3Harris who provides budgetary quotes and consultation. ICASA has purchased L3Harris hardware from this contact before and is an NMT approved vendor.

6. Provide a detailed, sufficient explanation of how the items of tangible property, services, or professional services is/are unique and how this uniqueness is substantially related to the intended purpose of the department/grant:

There are many commercially available amplifiers with similar output power performance to the RF-410D. Unfortunately, amplifiers are sensitive to input power and risk burnout with improper tuning, are laboratory-type equipment and poorly resist environmental exposure, or lack RF sensing capabilities and filtering which requires manual interaction and tuning when the radio's frequency or waveform are changed. The RF-410D is designed specifically for L3Harris radios and built to maximize radio performance in harsh conditions with limited user interaction. It is imperative that C2 nets be supported with robust and stable hardware.

- Resistance to environmental exposure:
    a. MIL-STD-810G compliant for shock, vibration, sand, dust, salt for, and rain.
    b. Resistance to extreme operating temperatures (-40F to 140F)
- Mode and waveform support:
    a. Nearly all PRC-117 Narrowband waveforms (FM, AM, SINCGARS, HAVEQUICK, SATURN, P25)
    b. Various wideband and SATCOM waveforms
- Software defined architecture for future upgrades to support emerging waveforms

- Selectable RF sensing and Radio Control modes to maximize performance with limited user interaction.

7. Please provide a narrative description department's due diligence in determining a basis for the procurement. Include:
    a. method used to research and review other available sources (i.e. list of potential vendors from Purchasing, internet, state pricing agreements, purchasing cooperatives)
    b. list of vendors contacted, the date and method of contact (i.e. email, phone call)
        i. Potential Vendors and Hardware
            1. L3Harris – RF-410D & RF-7800M
                a. Email correspondence with L3Harris sales engineer supporting ICASA's requests. Multiple instances of correspondence between 2022 and 2025.
            2. General Dynamics Mission Systems – UPA-55 VHF/UHF PA
                a. July 2022 – Coordination with our federal contract radio representative (Gary Ford from Motorola)
            3. ABP Automated Business Power Inc. – ABP-75WMBK
                a. November 2024 – Contacted by our partners at 16th Air Force to acquire quote and help with market research
            4. UltraLife Communications Systems – A-350 Multiband Amplifier
                a. July 2025 via vendor online inquiry portal
    c. documentation explaining why:
        i. those vendors cannot provide the required items of tangible property, services, or professional services
        ii. other similar items of tangible property, services, or professional services cannot meet the intended purpose of department/grant:

General Comparison Matrix

Product	Manufacturer	Price Ea	Freq Range (MHz)	Radio Agnostic?	Power Output (W)	30-512 MHZ capable?	LOS & SATCOM?	Software Defined?	Limited manual interaction	DAMA, HAVEQUICK, SINCGARS?
RF-410D	L3Harris	13.3k	30-2600	✓	50	✓	✓	✓	✓	✓
RF-7800H	L3Harris	23k	30-2000	X	50	✓	✓	✓	✓	✓
UPA-55	GDMS	34k +	VHF / UHF	X	50	X	X	?	X	X
A-350	Ultralife		30-512	✓	50	✓	✓	X	X	X
ABP-75WMBK	ABP	12.3k +	30-512	✓	75	✓	✓	X	X	✓

Comparison Narrative:

a. Through market research we identified 5 potential options for radio power amplifiers. Our search was narrowed based on the following requirements ranked in order of importance:

1. Minimum of 50W RF output power
2. Compatible with L3Harris PRC-117G radios, ideally radio-agnostic
3. Supports AM/FM LOS communications
4. Reasonably priced based on comparable models ($10k – $15k)
5. Technical support available from vendor and a positive existing relationship (sales or tech support) with ICASA

b. Based on these requirements we worked with L3Harris and GDMS sales engineers to identify power amplifiers that would best fit our needs. The GDMS UPA-55 was quickly ruled out due to its price and comparatively poor technical capabilities. Similarly, the RF-7800 from L3Harris was ruled out due to its high cost. L3Harris provided a very attractive option in the RF-410D which satisfies all 5 requirements defined above.
c. Jordan Gonzales consulted with ICASA mission partners and radio subject matter experts (SMEs) at 16th Air Force (Chad Kaimi and John Rubio) to aid in market research. Chad and John identified another attractive option from Automated Business Power (ABP) and contacted the vendor for a quote. The ABP-75WMBK is a great option and fulfils 4 out of 5 requirements.
d. Jordan Gonzales reached out to UltraLife for information on the A-350 but has not heard back. This item slightly less capable than the ABP-75WMBK but fulfils 4 out of 5 requirements.

Why the L3Harris RF-410D over the ABP 75WMBK?

Either of these options would fulfil our imitate needs at PRTC. The RF-410D comes at a slightly higher price but comes stock with an impressive list of capabilities and its software-defined architecture boasts fast upgrades to support emerging and future waveforms. Additionally, L3Harris technologies are common in foreign and domestic DoD operations which aligns with PRTC's goal to provide customers access to an environment analogous to what they will face in-theatre.

Quote Acknowledgements

1. RF-410D Amplifier unit cost is $13.3k but the quote total is $42k.
    a. This quote total includes two RF-410Ds and all the required supporting equipment (power supplies, transport cases, and cable assemblies)
2. ABP-75WMBK Amplifier unit cost is $12.3k and the quote total is $24.6k.
    a. This quote total does not include power supplies or cable assemblies. We'd estimate the complete quote to be between $30k and $40k.

I certify I have performed thorough and diligent research and analysis to determine that L3Harris is the only source capable of providing the required RF-410D Radio Amplifiers and the associated accessories. I understand that violations of the New Mexico Procurement Code (Chapter 13, Article 1 NMSA 1978) can carry severe penalties. I affirm that the information provided in this Sole Source Determination is true and accurate to the best of my knowledge and belief.

3. Name, Title:
   ICASA,
   Contact Name: Jordan Gonzales
   Phone: 575-517-7987
   Research Engineer I

AdobeSign/Date
Aug 8, 2025

Email: jgonzales@icasa.nmt.edu

Review: Purchasing Services (Name, Title): Meradeth Montoya
Assistant Director of Purchasing

AdobeSign/Date
Meradeth Montoya 8/26/2025

Website Posting Date: 8/28/25

Posting Expiration Date: 9/27/25

Protested (Yes/No):

Approval: Delilah A. Walsh
Vice President of Administration and Finance

AdobeSign/Date

Version: July 2025