Lorenza S. Ladao
Sr. Subcontract Administrator
SLAC MS 01
lladao@slac.stanford.edu
+1-650-926-3214

December 16, 2021

TO ALL OFFERORS

Subject: Request for Proposal (RFP) SLAC_ 322698(LL)

Description: Procurement of Inductively Coupled Plasma (ICP) Tools

Dear Prospective Offerors,

You are invited to submit a firm-fixed-price proposal in accordance with Line Items in Section B of this RFP and the proposal preparation requirements and other applicable provided documents. **Your proposal must be received no later than Friday, January 28, 2022, 5:00 PM Pacific, and be valid for 90 days after submission. Submissions can be provided by electronic files in PDF format.**

Please make certain your business proposal includes the following documents as specified in the Section L – "Instructions to Offerors (ITO)," and also noted below:

1. Section B - Complete pricing under Supplies or Services and Price/Costs;
2. Section E – Inspection & Acceptance
3. Section F - Deliveries or Performance
4. Section K - Representations and Certifications;
5. Attachment L-1 - "Offeror's Technical & Business Proposal Qualification Matrix Checklist."
6. Attachment L-2 – "Offeror's Request for Clarifications." Complete and e-mail this form to the Procurement Specialist prior to the closing date of the RFP, for any questions/clarifications regarding this proposal. **The last day to submit questions/clarifications is no later than Monday, January 24, 2022.**
7. Attachment L-3 – Buy American Act Certification.
8. Attachment L-4 - Small Business Subcontracting Model" as required by the Prime Contract, FAR 52.219-9, when the award is to a Large Business Subcontract. A copy of a Model Small Business Subcontract Plan is included in this RFP for information purposes only and can be used as a guide or model in preparing the Subcontract plan by the **Successful Offeror**. Note that the subcontracting plan is not required to be submitted at the time of proposal submittal.

Marking of Proprietary/Confidential Information. Offerors shall properly mark and identify with a restrictive legend or information markings on pages of the proposal that contain Proprietary/confidential information.

Proposals shall be signed by an authorized representative of the offeror and to be provided via e-mail to the Procurement Representative's attention, Lorenza Ladao at lladao@slac.stanford.edu.

Technical, contractual, and administrative questions should be directed to the undersigned, in writing, at lladao@SLAC.stanford.edu. The Procurement Representative is the **SOLE** point of contact. All exchanges of source selection information between the University and Offerors will be controlled by the Purchasing Specialist. Any communication to any other SLAC employee or contractor regarding this solicitation may be grounds for disqualification.

Note that SLAC will be on Holiday Shutdown from Saturday, December 18, 2021, through Sunday, January 2, 2022. During these days, no one will be present to provide assistance or responses. Normal Business hours will resume Monday, January 3, 2022.

Your participation in Stanford University's (SLAC) procurement process is appreciated.

Sincerely,

Lorenza S. Ladao
Sr. Subcontract Administrator

SUBCONTRACT

Section A – Subcontract Form			
1. Subcontract Number:		**3. Type of Subcontract:** Firm Fixed Price	
2a. Solicitation Number: RFP_SLAC_322698(LL)	**2b. Offers Due By (Date):** January 28, 2022	**2c. Offers Due By (Time):** 5:00 PM PST	
4a. Subcontract Administrator: Lorenza S. Ladao	**4b. Email Address:** lladao@slac.stanford.edu	**4c. Telephone:** 650-926-3214	**4d. Fax:** 650-926-3063

5. Issued By: The Board of Trustees of the Leland Stanford, Jr. University as Manager Operator of SLAC National Accelerator Laboratory (SLAC) 2575 Sand Hill Road Menlo Park, CA 94025	**6. Submit Invoices To:** SLAC National Accelerator Laboratory Accounts Payable 2575 Sand Hill Road Menlo Park, CA 94025 Bldg. 041, M/S: 85
7. Name and Address of Seller: TO ALL OFFERORS: PLEASE COMPLETE	**8. Project Site:** SLAC National Accelerator Laboratory 2575 Sand Hill Road Menlo Park, CA 94025

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(X)	Sec	Description	(X)	Sec	Description
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☒	B	Supplies or Services and Prices/Costs	☒	I	Specific Subcontract Clauses
☒	C	Specifications/Statement of Work	☒	J	List of Attachments
☒	D	Delivery, Shipping, Packing	☒	K	Representations and Certifications
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☒	F	Deliveries or Performance	☒	M	Evaluation Factors for Award
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10. Brief description of supplies or services being acquired:
Procurement of three (3) Inductively Coupled Plasma (ICP) tools with NRTL Certification and on-site training in accordance with the Section C, Statement of Work of this RFP.

11. Total Amount of Subcontract:
See Section B for Total Amount of Subcontract

12. Negotiated Agreement. The subcontractor agrees to furnish and deliver the items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this subcontract. The rights and obligations of the parties to this subcontract shall be governed by (a) this subcontract award, (b) the solicitation, and (c) the clauses, terms and conditions, representations, certifications, and specifications incorporated by reference in or attached to this contract.	**13. Award.** The Board of Trustees of the Leland Stanford, Jr. University, SLAC National Accelerator Laboratory accepts your offer dated _____ on this solicitation identified in item 2 above as reflected in this subcontract are subject to and governed by (a) this subcontract award, (b) the solicitation, and (c) the clauses, terms and conditions, representations, certifications, and specifications incorporated by reference in or attached to this contract.
☒ Seller is required to sign and return a copy of this document (Check if applicable)	The Board of Trustees of the Leland Stanford, Jr. University as Manager Operator of SLAC National Accelerator Laboratory (SLAC)
12b. Signature of person authorized to sign for seller:	**13b**. Signature of person authorized to sign:
12c. Name of Signer:	**13c**. Name of Signer:
12d. Title of Signer:	**13d**. Title of Signer:
12e. Date:	**13e**. Date:

Section B – Supplies or Services and Prices

LINE-ITEM NO.	SUPPLIES/SERVICES	QTY	UNIT	UNIT PRICE	Total Price
	Procurement of the following three (3) Inductively Coupled Plasma (ICP) Tools in accordance with the detailed specification requirements as set forth in Section C - Statement of Work/Technical Specifications dated August 25, 2021.				
001	Inductively Coupled Plasma- Chemical Vapor Deposition (ICP-CVD) Deposition Tool	1	EACH	$	$
002	Inductively Coupled Plasma (ICP) Metal Etch Tool	1	EACH	$	$
003	Inductively Coupled Plasma (ICP) Oxide Etch Tool	1	EACH	$	$
004	NRTL certification for all three Inductively Coupled Plasma (ICP) tools	1	LOT	$	$
005	Hands-On Tool Training on-site at SLAC for two people.	1	LOT	$	$
				Total Subcontract Value USD	**$**
				Subcontract Funded Amount USD	**$**

DUNS Number:	
ECCN:	
FOB: Destination – Menlo Park , CA USA	
Payment Terms will be Net 30 Unless Otherwise Stated:	
Discounts (if applicable) [Educational, University, Quantity, etc]	

Section C
Statement of Work
Technical Specifications for Inductively Coupled Plasma Systems
August 25, 2021

Scope:
This specification provides requirements for three Inductively Coupled Plasma (ICP) tools. Differences between each system are summarized in table 1.

SLAC National Accelerator Laboratory is building a 5,500 square foot ISO 5 (Class 100) cleanroom for superconducting device fabrication and acquiring new state-of-the-art tools to support mission critical objectives. The ICP tools are critical for fabrication of superconducting devices and sensors on 150 mm substrates.

Each ICP tool described herein shall contain an isolated load lock, a process chamber, power supplies with matching network, vacuum system, gas pod, pressure control system, electronic control rack and centralized computer control. The system requires both manual and automatic recipe computer control of etch and/or deposition steps. Table 1 summarizes the process gases for each system, while the detailed specifications below are for each tool.

Tool name	DEP6	ICP1	ICP3
Purpose	SiO2/SiNx deposition	Metal etcher	SiO2/SiNx etcher
Process gases	SiH4, Ar, O2, SF6, N2, N2O, NH3, CF4	Ar, O2, CF4, SF6, CHF3, CH4, Cl2, BCl3	Ar, O2, CF4, SF6, CHF3, C4F8

Table 1: Summary of process gases for each ICP tool

This SOW outlines the supply and training for three Inductively Coupled Plasma (ICP) tools that meets or exceeds the required specifications.

The vendor shall:

- Provide all new items. Prototypes, one-off systems, demonstration models, used or refurbished instruments will not be considered for award.
- Supply the installation manual, utility requirements, and a diagram showing the tool footprint, measurements, and wall penetrations for the system within 4 weeks after the award.
- All on-site work shall be scheduled with the Technical Point of Contact (TPOC) prior to arrival to do the work. Within four weeks of the completion of the work, the vendor shall provide the TPOC a report of the work done, the results of the acceptance test, and any issues identified.
- Each tool must be listed or labeled by a Nationally Recognized Test Laboratory (NRTL) per OSHA, Cal-OSHA and NFPA 70E Article 350 requirements, or be field evaluated by a

NRTL per NFPA 70E Article 350.6 prior to shipment to confirm compliance with US safety standards. Provide 2 copies of each NRTL Field Evaluation Report or certificate to SLAC.

- Supply a one-year warranty on all parts and labor.
- After award of contract, the vendor shall supply a schedule for when the required work will be performed. The vendor shall provide monthly status updates to SLAC on a mutually agreed upon time schedule.
- Provide personnel that pass required government background checks to be issued badges for work on site and follow SLAC COVID protocols.
- Provide hands-on tool training for two people for at least five days at the SLAC installation site.

ICP Tool #1: DEP6

DEP6 is an ICPCVD tool that will be used to deposit dielectric material including but not limited to SiO2 and SiNx for research and development on superconducting devices and sensors. The system shall support silicon and sapphire substrates up to 150mm diameter.

The required DEP6 system specification:

1. Be constructed with materials that are compatible for use in an ISO 5 (Class 100) cleanroom.
2. Be constructed such that any surface which comes in contact with a process chemical shall be constructed of material which is resistant to that chemical.
3. The system shall utilize single point connections for any necessary house facilities (such as chilled water, compressed air, vent gas, each process gas).
4. The deposition system requires an internal electrical distribution restricted to a single external power connection for 208V, 3-phase, and 60 Hz.
5. Include appropriate interlocks to ensure that the tool is safely operated. The system shall meet all SEMI S2 safety standards or OSHA standards.
6. The supporting frame of the deposition system should have heavy-duty casters, leveling pads and mounting connections for seismic anchoring.
7. During transport to final location, the system components shall be able to pass through the main doors that are 8 feet tall and 6 feet wide. Further assembly of components may take place inside the cleanroom.
8. Be able to deposit silicon dioxide and silicon nitride.
    a. The system shall be specifically designed for high uniformity across 150 mm wafers.
    b. The system shall be able to control plasma sources and gas handling specifically designed for maximum flexibility of etch and deposition parameters.
    c. The system shall contain cleaning recipes to ensure the cleanliness of the deposition chamber.
    d. The system shall have substrate surface cleaning capabilities.
9. The system shall be able to operate in an automated, computer- controlled manner:
    a. Specifically, the system shall be able to automatically:
        i. Have a user manually load a substrate into a load-lock.
        ii. Vacuum pump out the load lock.
        iii. Automatically load the substrate into the process chamber.
        iv. Perform a preprogrammed recipe on the substrate in the process chamber.
        v. Monitor the conditions of the recipe including an endpoint that is controlled by software.
        vi. Return the substrate to the load lock once the process is completed.

b. The system must be able to operate according to one recipe that can control all the modules simultaneously.
c. The system shall be able to store and edit recipes to control the system using only software that is integrated into the system, no other software or hardware is to be required.
d. The system shall be able to meet all requirements while not being connected to the internet or a network. It shall be able to function as a stand-alone unit.
e. The system shall be able to enter a manual mode for maintenance and troubleshooting.

10. Include all computer systems, power supplies, and all ancillary equipment required for the system to operate.
11. The control software shall also have the following capabilities:
    a. Setting process parameter limits accessible only to administrator level access.
    b. Be capable of data logging of all monitored process parameters.
    c. Be able to operate within a secure network domain.
    d. Be equipped with a Microsoft Windows 10 operating system.
    e. Have an integrated recipe editor for developing and modifying recipes.
12. Have recipes that shall allow setting and ramping of etch and deposition parameters including but not limited to time, powers, and pressure during the course of a deposition process as well as looping of multiple deposition recipe steps
13. Consist of a system with a process chamber and a load lock.
    a. The system shall have an automated vacuum load lock to transport wafers in and out of the process chamber such that the chamber does not need to be vented between process runs.
    b. The transport arm shall handle silicon and sapphire substrates up to 150mm diameter.
14. Contain a load lock system with a base pressure of 100 mTorr or less with a vacuum system containing an oil-free, dry pump, a view port and pressure gauge 10^-6 Torr to 1 ATM.
    a. This pump shall be able to be pumped independently from the main process chamber vacuum system
15. Include a process chamber that shall:
    a. Achieve a base pressure of less than 1 x 10^-6 Torr in 6 hours or less.
    b. Be able to reach and maintain a base pressure of less than 1 mTorr in 2 min or less after each process.
    c. Be equipped with a throttle valve and controller for independent control of process gas flow and chamber pressure.
        i. The process chamber pressure control shall be able to maintain the process pressure setpoint to ± 5 % during the deposition process.
        ii. The process chamber operating pressure range shall be able to be set within a range of at least 1 to 30 mTorr.
    d. Include a rough vacuum provided using an oil-free, dry pump.
        i. This vacuum system shall be able to be pumped independently from the load lock vacuum system.
    e. Achieve a high vacuum using a corrosive resistant magnetically levitated turbomolecular pump. The vendor shall provide this turbomolecular pump.
    f. Be equipped with a heater or heaters to heat the chamber and pump down pipework up to a minimum of 60°C to minimize process deposition.

g. Include an optical window that allows direct vertical viewing of the center of the wafer for visual endpoint detection

16. Include a process gas pod that shall allow for the independent delivery of at least 9 process gasses, including but not limited to: 100% SiH4, Ar, O2, SF6, N2, N2O, NH3, CF4. Each independent process gas delivery line shall:
    a. Be equipped with 7 standard gas-lines and MFC for non-hazardous gases
    b. Be equipped with 2 by-pass gas-lines and MFC for hazardous gases
    c. Be equipped with digital Mass Flow Controllers (MFCs) that control gas flow with a precision of ± 5 % and an accuracy of ± 5 %.
    d. Be able to handle 100% Silane gas at max of 100 sccm
17. Include plasma source(s) that shall:
    a. Contain high density plasma sources with controllable ion energy and density.
    b. Be capable of sustained Inductively Coupled Plasma (ICP) power from a range of at least 0 to 3000 W with ± 5 % or better precision and repeatability.
    c. Be equipped with a radio frequency (RF) or equivalent bias power supply that operates in a range of at least 0 to 300 W with ± 2 % or better precision and repeatability.
        i. The RF power supply shall be capable of programmable pulsed operation during processing.
18. Include a substrate handling system that shall:
    a. Be capable of and include all necessary hardware to process wafers with up to 150 mm SEMI spec wafer lateral dimensions.
    b. Be capable of centering the wafer on the etch electrode to within ± 2.0 mm or less.
    c. Be capable of loading, unloading, and processing wafers.
    d. Accomplish wafer clamping and cooling (preferring an electrostatic chuck; mechanical clamping is acceptable) and active He backside pressure control. This system shall
        i. Have an edge exclusion of 7 mm or less.
        ii. Be capable of plasma cleaning the substrate stage and clamping mechanism without a substrate loaded.
19. Chillers for this tool shall be water-cooled chillers.
20. Be equipped with an integrated Optical Emission Spectroscopy (OES) automatic endpoint detection system that shall:
    a. Work on a substrate with 150 mm SEMI spec wafer lateral dimensions with one SEMI standard 57.5 mm flat with 1.0 % or less open area.
    b. Provide variable wavelength (200-850 nm) spectrometer
    c. Works with time intervals down to 1 sec.
    d. Be integrated into the process control software for endpoint purpose.
    e. Not require any position alignment.
    f. Be part of the process chamber.
    g. Have algorithms that are user programmable and data can be reprocessed on the same computer as the tool for process optimization.
        i. Preference will be given to vendors that provide a system that can more accurately determine the endpoint of the deposition.
21. Be capable of depositing stoichiometric SiO2 and SiNx, and silicon-rich SiO2 and silicon-rich SiNx at room temperature by varying gas ratio, pressure, and power. The tool shall:
    a. Be able to perform RF clean with Ar on substrate surface
    b. Be able to deposit 350 nm SiO2 at 20C to the following specifications:
        i. Uniformity of +/- 2% or less with 7 mm edge exclusion or less

ii. Index of refraction n between 1.4 to 1.46
iii. Film stress between 0 - 200 MPa compressive

c. Be able to deposit 350 nm Si-rich SiO2 at 20C to the following specifications:
   i. Uniformity of +/- 2% or less with 7 mm edge exclusion or less
   ii. Index of refraction n between 1.47 to 2
   iii. Film stress between 0 - 200 MPa compressive
d. Be able to deposit 350 nm SiNx at 20C to the following specifications:
   i. Uniformity of +/- 3% or less with 7 mm edge exclusion or less
   ii. Index of refraction n = 2
   iii. Film stress between 0 - 200 MPa compressive
e. Be able to deposit 350 nm Si-rich SiNx at 20C to the following specifications:
   i. Uniformity of +/- 3% or less with 7 mm edge exclusion or less
   ii. Index of refraction n between 2.1 and 3
   iii. Film stress between 0 - 200 MPa compressive
f. Be able to perform chamber cleaning to the following specifications:
   i. Standard clean recipe for every 2-10 microns of film being deposited
   ii. Interleave mode of cleaning for cleaning after each deposition or at a regular interval

Acceptance Testing both at the factory site and SLAC site

Before shipping the system, the vendor shall provide SLAC a standard factory acceptance report demonstrating that the 3 ICP tool performs according to the vendor's standard factory acceptance test. SLAC reserves the right to be present during the factory acceptance test. The vendor shall provide SLAC with a schedule of the factory acceptance test at least 4 weeks prior to the test to ensure that SLAC has enough time to arrange for travel to the factory.

After system installation, the vendor shall demonstrate the system performs according to system specifications using a standard site acceptance test. In addition to the standard site acceptance test, the Vendor shall demonstrate that the tools can perform the etch defined below. The system must meet these before it will be accepted.

Be capable of depositing stoichiometric SiO2 and SiNx, and silicon-rich SiO2 and silicon-rich SiNx at room temperature by varying gas ratio, pressure, and power. The tool shall:

1. Reach process chamber base pressure of 2 x 10^-6 Torr within 6 hours from atmosphere
2. Achieve the load-lock base pressure of 100 mTorr within 10 minutes from atmosphere
3. Be able to deposit 350 nm SiO2 at 20C to the following specifications:
   a. Uniformity of +/- 2% or less with 7 mm edge exclusion or less
   b. Index of refraction n between 1.4 to 1.46
   c. Film stress between 0 - 200 MPa compressive
4. Be able to deposit 350 nm Si-rich SiO2 at 20C to the following specifications:
   a. Uniformity of +/- 2% or less with 7 mm edge exclusion or less
   b. Index of refraction n between 1.46 to 2
   c. Film stress between 0 - 200 MPa compressive

5. Be able to deposit 350 nm SiNx at 20C to the following specifications:
    a. Uniformity of +/- 3% or less with 7 mm edge exclusion or less
    b. Index of refraction n around 2
    c. Film stress between 0 - 200 MPa compressive
6. Be able to deposit 350 nm Si-rich SiNx at 20C to the following specifications:
    a. Uniformity of +/- 3% or less with 7 mm edge exclusion or less
    b. Index of refraction n between 2 and 3
    c. Film stress between 0 - 200 MPa compressive
7. Be able to perform RF clean using Ar on substrate surface
8. Be able to perform chamber cleaning to the following specifications:
    a. Standard clean recipe for every 2-10 microns of film being deposited
    b. Interleave mode of cleaning for cleaning after each deposition or at a regular interval
9. Have programmable parameter ramping capability for powers, pressures, and times for both etch and passivation phases

ICP Tool #2: ICP1

ICP1 is an ICP etch tool that will be utilized to etch metal films including but not limited to Niobium or Aluminum for research and development for superconducting devices and sensors. The tool shall include a process chamber, isolated load-lock, control rack, vacuum system, pressure control system, centralized computer control, safety components, and external support frame. The system shall support silicon and sapphire substrates up to 150mm diameter. The system shall include automatic endpoint detection capabilities.

The required ICP1 system specification:

1. Be constructed with materials that are compatible for use in an ISO 5 (Class 100) cleanroom.
2. Be constructed such that any surface which comes in contact with a process chemical shall be constructed of material which is resistant to that chemical.
3. The system shall utilize single point connections for any necessary house facilities (such as chilled water, compressed air, vent gas, each process gas).
4. The etch system requires an internal electrical distribution restricted to a single external power connection for 208V, 3-phase, and 60 Hz.
5. Include appropriate interlocks to ensure that the tool is safely operated. The system shall meet all SEMI S2 safety standards or OSHA standards.
6. The supporting frame of the etch system should have heavy-duty casters, leveling pads and mounting connections for seismic anchoring.
7. During transport to final location, the system components shall be able to pass through the main doors that are 8 feet tall and 6 feet wide. Further assembly of components may take place inside the cleanroom.
8. Be able to perform niobium and aluminum etch with selectivity to a photoresist mask and to dielectrics material (such as Si, SiO2 and SiNx)
    a. The system shall be specifically designed for high uniformity across 150 mm wafers.
    b. The system shall be able to control plasma sources and gas handling specifically designed for maximum flexibility of etching parameters.
    c. The system shall contain cleaning recipes to ensure the cleanliness of the etch chamber.

d. The system shall have substrate surface cleaning capabilities.

9. Be able to operate in an automated, computer- controlled manner:
    a. Specifically, the system shall be able to:
        i. Have a user manually load a substrate into a load-lock.
        ii. Automatically vacuum pump out the load lock.
        iii. Automatically load the substrate into the process chamber.
        iv. Perform a preprogrammed recipe on the substrate in the process chamber.
        v. Monitor the conditions of the recipe including an endpoint that is controlled by software.
        vi. Return the substrate to the load lock once the process is completed.
    b. The system must be able to operate according to one recipe that can control all the modules simultaneously.
    c. The system shall be able to store and edit recipes to control the system using only software that is integrated into the system, no other software or hardware is to be required.
    d. The system shall be able to meet all requirements while not being connected to the internet or a network. It shall be able to function as a stand-alone unit.
    e. The system shall be able to enter a manual mode for maintenance and troubleshooting.
10. Include all computer systems, power supplies, and all ancillary equipment required for the system to operate.
11. The control software shall also have the following capabilities:
    a. Setting process parameter limits accessible only to administrator level access.
    b. Be capable of data logging of all monitored process parameters.
    c. Be able to operate within a secure network domain.
    d. Be equipped with a Microsoft Windows 10 operating system.
    e. Have an integrated recipe editor for developing and modifying recipes.
12. Have recipes that shall allow setting and ramping of etch parameters including but not limited to time, powers, and pressure during the course of an etch process as well as looping of multiple etch recipe steps
13. Consist of a system with a process chamber and a load lock.
    a. The system shall have an automated vacuum load lock to transport wafers in and out of the process chamber such that the chamber does not need to be vented between process runs.
    b. The transport arm shall handle silicon and sapphire substrates up to 150mm diameter.
14. Contain a load lock system with a base pressure of 100 mTorr or less with a vacuum system containing an oil-free, dry pump, a view port and pressure gauge 10^-6 Torr to 1 ATM.
    a. This pump shall be able to be pumped independently from the main process chamber vacuum system
15. Include a process chamber that shall:
    a. Achieve a base pressure of less than 1 x 10^-6 Torr in 6 hours or less.
    b. Be able to reach and maintain a base pressure of less than 1 mTorr in 2 min or less after each process.
    c. Be equipped with a throttle valve and controller for independent control of process gas flow and chamber pressure.

i. The process chamber pressure control shall be able to maintain the process pressure setpoint to ± 5 % during the etch process.
ii. The process chamber operating pressure range shall be able to be set within a range of at least 1 to 30 mTorr.

d. Include a rough vacuum provided using an oil-free, dry pump.
i. This vacuum system shall be able to be pumped independently from the load lock vacuum system.

e. Achieve a high vacuum using a corrosive resistant magnetically levitated turbomolecular pump. The vendor shall provide this turbomolecular pump.
f. Be equipped with a heater or heaters to heat the chamber and pump down pipework up to a minimum of 60°C to minimize process etch.
g. Include an optical window that allows direct vertical viewing of the center of the wafer for visual endpoint detection

16. Include a process gas pod that shall allow for the independent delivery of at least 8 process gasses, including but not limited to: Ar, O2, CF4, SF6, CHF3, CH4, Cl2, BCl3. Each independent process gas delivery line shall:
    a. Be equipped with 5 standard gas-lines and MFC for non-hazardous gases
    b. Be equipped with 3 by-pass gas-lines and MFC for hazardous gases
    c. Be equipped with digital Mass Flow Controllers (MFCs) that control gas flow with a precision of ± 5 % and an accuracy of ± 5 %.
    d. Be equipped with hazardous gas lines heating kit used for low vapor pressure gases.
17. Include plasma source(s) that shall:
    a. Contain high density plasma sources with controllable ion energy and density.
    b. Be capable of sustained Inductively Coupled Plasma (ICP) power from a range of at least 0 to 3000 W with ± 5 % or better precision and repeatability.
    c. Be equipped with a radio frequency (RF) or equivalent bias power supply that operates in a range of at least 0 to 300 W with ± 2 % or better precision and repeatability.
        i. The RF power supply shall be capable of programmable pulsed operation during processing.
18. Include a substrate handling system that shall:
    a. Be capable of and include all necessary hardware to process wafers with up to 150 mm SEMI spec wafer lateral dimensions.
    b. Be capable of centering the wafer on the etch electrode to within ± 2.0 mm or less.
    c. Be capable of loading, unloading, and processing wafers.
    d. Accomplish wafer clamping and cooling (preferring an electrostatic chuck; mechanical clamping is acceptable) and active He backside pressure control. This system shall
        i. Have an edge exclusion of 2 mm or less.
        ii. Be capable of plasma cleaning the substrate stage and clamping mechanism without a substrate loaded.
19. Chillers for this tool shall be water-cooled chillers.
20. Be equipped with an integrated Optical Emission Spectroscopy (OES) automatic endpoint detection system that shall:
    a. Work on a substrate with 150 mm SEMI spec wafer lateral dimensions with one SEMI standard 57.5 mm flat with 1.0 % or less open area.
    b. Provide variable wavelength (200-850 nm) spectrometer
    c. Works with time intervals down to 1 sec.
    d. Be integrated into the process control software for endpoint purpose.

e. Not require any position alignment.
f. Be part of the process chamber.
g. Have algorithms that are user programmable, and data can be reprocessed on the same computer as the tool for process optimization.
    i. Preference will be given to vendors that provide a system that can more accurately determine the endpoint of the etch.

21. Be equipped with an integrated 670 nm Laser interferometer endpoint detection system that shall:
    a. Work on a substrate with 150 mm SEMI spec wafer lateral dimensions with one SEMI standard 57.5 mm flat with 1.0 % or less open area.
    b. Mounted to a viewport above the chamber
    c. Include a CCD camera to produce a real-time image
    d. Be integrated into the process control software for endpoint purpose.
22. Be capable of atomic layer etching (ALE) at very low bias to minimize damage with self-limited steps and cyclic etch process.
23. Be capable of etching niobium and aluminum films at room temperature by varying gas ratio, pressure, and power. The tool shall:
    a. Be able to perform an etch of 2 um wide by 60 um or greater length on 200 nm thick niobium film on top of Si or SiO2 to the following specifications:
        i. Cross wafer uniformity better than +/- 5 %
        ii. Etch profile between 85 - 90 degrees
        iii. An etch rate of greater than 125 nm/min
    b. Be able to perform an etch of 2 um wide by 60 um or greater length on 300 nm thick niobium film on top of Si or SiO2 to the following specifications:
        i. Cross wafer uniformity better than +/- 5 %
        ii. Etch profile between 45 - 60 degrees
        iii. An etch rate of greater than 125 nm/min
    c. Be able to perform an etch of 2 um wide by 10 um or greater length on 300 nm thick Aluminum or Aluminum oxide or combinations of Al/AlOx/Al films on top of Si or SiO2 to the following specifications:
        i. Cross wafer uniformity better than +/- 5 %
        ii. Etch profile between 85 - 90 degrees
        iii. An etch rate of greater than 125 nm/min
    d. Be able to perform O2 clean on substrate surface
    e. Be able to perform the etch chamber cleaning recipes:
        i. between F-based etch recipes and Cl-based etch recipes
        ii. to ensure the cleanliness of the etch chamber

Acceptance Testing both at the factory site and SLAC site

Before shipping the system, the vendor shall provide SLAC a standard factory acceptance report demonstrating that the ICP1 tool performs according to the vendor's standard factory acceptance test. SLAC reserves the right to be present during the factory acceptance test. The vendor shall provide SLAC with a schedule of the factory acceptance test at least 4 weeks prior to the test to ensure that SLAC has enough time to arrange for travel to the factory.

After system installation, the vendor shall demonstrate the system performs according to system specifications using a standard site acceptance test. In addition to the standard site acceptance test, the Vendor shall demonstrate that the tools can perform the etch defined below. The system must meet these before it will be accepted.

Be capable of etching niobium and aluminum films at room temperature by varying gas ratio, pressure, and power. The tool shall:

1. Reach process chamber base pressure of 2 x 10^-6 Torr within 6 hours from atmosphere
2. Achieve the load-lock base pressure of 100 mTorr within 10 minutes from atmosphere
3. Be able to perform an etch of 2 um wide by 60 um or greater length on 200 nm niobium film on top of Si or SiO2 to the following specifications:
    a. Cross wafer uniformity better than +/- 5 %
    b. Etch profile between 85 - 90 degrees
    c. An etch rate of greater than 125 nm/min
4. Be able to perform an etch of 2 um wide by 60 um or greater length on 300 nm niobium film on top of Si or SiO2 to the following specifications:
    a. Cross wafer uniformity better than +/- 3 %
    b. Etch profile between 45 - 60 degrees
    c. An etch rate of greater than 125 nm/min
5. Be able to perform an etch of 2 um wide by 10 um or greater length on 300 nm thick Aluminum or Aluminum oxide or combinations of Al/AlOx/Al films on top of Si or SiO2 to the following specifications:
    a. Cross wafer uniformity better than +/- 5 %
    b. Etch profile between 85 - 90 degrees
    c. An etch rate of greater than 125 nm/min
6. Be able to perform O2 clean on substrate surface
7. Be able to perform the etch chamber cleaning recipes:
    a. between F-based etch recipes and Cl-based etch recipes
    b. to ensure the cleanliness of the etch chamber
8. Have programmable parameter ramping capability for powers, pressures, and times for both etch and passivation phases.

ICP Tool #3: ICP3

ICP3 is an ICP etch tool that will be utilized to etch dielectric material including but not limited to SiO2 and SiNx for research and development for superconducting devices and sensors. The tool shall include a process chamber, isolated load-lock, control rack, vacuum system, pressure control system, centralized computer control, safety components, and external support frame. The system shall support silicon and sapphire substrates up to 150mm diameter. The system shall include automatic endpoint detection capabilities.

The required ICP3 system specification:

1. Be constructed with materials that are compatible for use in an ISO 5 (Class 100) cleanroom.

2. Be constructed such that any surface which comes in contact with a process chemical shall be constructed of material which is resistant to that chemical.
3. The system shall utilize single point connections for any necessary house facilities (such as chilled water, compressed air, vent gas, each process gas).
4. The etch system requires an internal electrical distribution restricted to a single external power connection for 208V, 3-phase, and 60 Hz.
5. Include appropriate interlocks to ensure that the tool is safely operated. The system shall meet all SEMI S2 safety standards or OSHA standards.
6. The supporting frame of the etch system should have heavy-duty casters, leveling pads and mounting connections for seismic anchoring.
7. During transport to final location, the system components shall be able to pass through the main doors that are 8 feet tall and 6 feet wide. Further assembly of components may take place inside the cleanroom.
8. Be able to perform SiO2 and SiNx etch with selectivity to a photoresist mask and to metal films (such as Nb and Al):
    a. The system shall be specifically designed for high uniformity across 150 mm wafers.
    b. The system shall be able to control plasma sources and gas handling specifically designed for maximum flexibility of etching parameters.
    c. The system shall contain cleaning recipes to ensure the cleanliness of the etch chamber.
    d. The system shall have substrate surface cleaning capabilities.
9. Be able to operate in an automated, computer- controlled manner:
    a. Specifically, the system shall be able to:
        i. Have a user manually load a substrate into a load-lock.
        ii. Automatically vacuum pump out the load lock.
        iii. Automatically load the substrate into the process chamber.
        iv. Perform a preprogrammed recipe on the substrate in the process chamber.
        v. Monitor the conditions of the recipe including an endpoint that is controlled by software.
        vi. Return the substrate to the load lock once the process is completed.
    b. The system must be able to operate according to one recipe that can control all the modules simultaneously.
    c. The system shall be able to store and edit recipes to control the system using only software that is integrated into the system, no other software or hardware is to be required.
    d. The system shall be able to meet all requirements while not being connected to the internet or a network. It shall be able to function as a stand-alone unit.
    e. The system shall be able to enter a manual mode for maintenance and troubleshooting.
10. Include all computer systems, power supplies, and all ancillary equipment required for the system to operate.
11. The control software shall also have the following capabilities:
    a. Setting process parameter limits accessible only to administrator level access.
    b. Be capable of data logging of all monitored process parameters.
    c. Be able to operate within a secure network domain.
    d. Be equipped with a Microsoft Windows 10 operating system.
    e. Have an integrated recipe editor for developing and modifying recipes.

12. Have recipes that shall allow setting and ramping of etch parameters including but not limited to time, powers, and pressure during the course of an etch process as well as looping of multiple etch recipe steps
13. Consist of a system with a process chamber and a load lock.
    a. The system shall have an automated vacuum load lock to transport wafers in and out of the process chamber such that the chamber does not need to be vented between process runs.
    b. The transport arm shall handle silicon and sapphire substrates up to 150 mm diameter.
14. Contain a load lock system with a base pressure of 100 mTorr or less with a vacuum system containing an oil-free, dry pump, a view port and pressure gauge 10^-6 Torr to 1 ATM.
    a. This pump shall be able to be pumped independently from the main process chamber vacuum system
15. Include a process chamber that shall:
    a. Achieve a base pressure of less than 1 x 10^-6 Torr in 6 hours or less.
    b. Be able to reach and maintain a base pressure of less than 1 mTorr in 2 min or less after each process.
    c. Be equipped with a throttle valve and controller for independent control of process gas flow and chamber pressure.
        i. The process chamber pressure control shall be able to maintain the process pressure setpoint to ± 5 % during the etch process.
        ii. The process chamber operating pressure range shall be able to be set within a range of at least 1 to 30 mTorr.
    d. Include a rough vacuum provided using an oil-free, dry pump.
        i. This vacuum system shall be able to be pumped independently from the load lock vacuum system.
    e. Achieve a high vacuum using a corrosive resistant magnetically levitated turbomolecular pump. The vendor shall provide this turbomolecular pump.
    f. Be equipped with a heater or heaters to heat the chamber and pump down pipework up to a minimum of 60°C to minimize process etch.
    g. Include an optical window that allows direct vertical viewing of the center of the wafer for visual endpoint detection
16. Include a process gas pod that shall allow for the independent delivery of at least 8 process gasses, including but not limited to: Ar, O2, CF4, SF6, CHF3, C4F8. Each independent process gas delivery line shall:
    a. Be equipped with 6 standard gas-lines and MFC for non-hazardous gases
    b. Be equipped with 1 by-pass gas-lines and MFC for hazardous gases
    c. Be equipped with digital Mass Flow Controllers (MFCs) that control gas flow with a precision of ± 5 % and an accuracy of ± 5 %.
    d. Be equipped with non-toxic gas lines heating kit used for low vapor pressure gases such as C4F8.
17. Include plasma source(s) that shall:
    a. Contain high density plasma sources with controllable ion energy and density.
    b. Be capable of sustained Inductively Coupled Plasma (ICP) power from a range of at least 0 to 3000 W with ± 5 % or better precision and repeatability.
    c. Be equipped with a radio frequency (RF) or equivalent bias power supply that operates in a range of at least 0 to 300 W with ± 2 % or better precision and repeatability.

i. The RF power supply shall be capable of programmable pulsed operation during processing.

18. Include a substrate handling system that shall:
    a. Be capable of and include all necessary hardware to process wafers with up to 150 mm SEMI spec wafer lateral dimensions.
    b. Be capable of centering the wafer on the etch electrode to within ± 2.0 mm or less.
    c. Be capable of loading, unloading, and processing wafers.
    d. Accomplish wafer clamping and cooling (preferring an electrostatic chuck; mechanical clamping is acceptable) and active He backside pressure control. This system shall
        i. Have an edge exclusion of 2 mm or less.
        ii. Be capable of plasma cleaning the substrate stage and clamping mechanism without a substrate loaded.
19. Chillers for this tool shall be water-cooled chillers.
20. Be equipped with an integrated Optical Emission Spectroscopy (OES) automatic endpoint detection system that shall:
    a. Work on a substrate with 150 mm SEMI spec wafer lateral dimensions with one SEMI standard 57.5 mm flat with 1.0 % or less open area.
    b. Provide variable wavelength (200-850 nm) spectrometer
    c. Works with time intervals down to 1 sec.
    d. Be integrated into the process control software for endpoint purpose.
    e. Not require any position alignment.
    f. Be part of the process chamber.
    g. Have algorithms that are user programmable and data can be reprocessed on the same computer as the tool for process optimization.
        i. Preference will be given to vendors that provide a system that can more accurately determine the endpoint of the etch.
21. Be equipped with an integrated 670 nm Laser interferometer endpoint detection system that shall:
    a. Work on a substrate with 150 mm SEMI spec wafer lateral dimensions with one SEMI standard 57.5 mm flat with 1.0 % or less open area.
    b. Mounted to a viewport above the chamber
    c. Include a CCD camera to produce a real-time image
    d. Be integrated into the process control software for endpoint purpose.
22. Be capable of etching SiO2 and SiNx films at room temperature by varying gas ratio, pressure, and power. The tool shall:
    a. Be able to perform an etch of 2 um wide by 2 um on 350 nm thick SiO2 film on top of niobium or Si to the following specifications:
        i. Cross wafer uniformity better than +/- 3 %
        ii. Etch profile between 85 - 90 degrees
        iii. An etch rate of greater than 125 nm/min
        iv. Greater than a 4:1 selectivity to a photomask
    b. Be able to perform an etch of 2 um wide by 20 um on 350 nm thick SiO2 film on top of niobium or Si to the following specifications:
        i. Cross wafer uniformity better than +/- 3 %
        ii. Etch profile between 45 - 72 degrees
        iii. An etch rate of greater than 125 nm/min
    c. Be able to perform an etch of 2 um wide by 20 um on 350 nm thick SiNx on top of niobium or Si to the following specifications:

i. Cross wafer uniformity better than +/- 3 %
ii. Etch profile between 85 - 90 degrees
iii. An etch rate of greater than 125 nm/min

d. Be able to perform O2 clean on substrate surface

Acceptance Testing both at the factory site and SLAC site

Before shipping the system, the vendor shall provide SLAC a standard factory acceptance report demonstrating that the ICP1 tool performs according to the vendor's standard factory acceptance test. SLAC reserves the right to be present during the factory acceptance test. The vendor shall provide SLAC with a schedule of the factory acceptance test at least 4 weeks prior to the test to ensure that SLAC has enough time to arrange for travel to the factory.

After system installation, the vendor shall demonstrate the system performs according to system specifications using a standard site acceptance test. In addition to the standard site acceptance test, the Vendor shall demonstrate that the tools can perform the etch defined below. The system must meet these before it will be accepted.

Be capable of Be capable of etching SiO2 and SiNx films at room temperature by varying gas ratio, pressure, and power. The tool shall:

1. Reach process chamber base pressure of 2 x 10^-6 Torr within 6 hours from atmosphere
2. Achieve the load-lock base pressure of 100 mTorr within 10 minutes from atmosphere
3. Be able to perform an etch of 2 um wide by 2 um on 350 nm thick SiO2 film on top of niobium or Si to the following specifications:
    a. Cross wafer uniformity better than +/- 3 %
    b. Etch profile between 85 - 90 degrees
    c. An etch rate of greater than 125 nm/min
    d. Greater than a 4:1 selectivity to a photomask
4. Be able to perform an etch of 2 um wide by 20 um on 350 nm thick SiO2 film on top of niobium or Si to the following specifications:
    a. Cross wafer uniformity better than +/- 3 %
    b. Etch profile between 45 - 72 degrees
    c. An etch rate of greater than 125 nm/min
5. Be able to perform an etch of 2 um wide by 20 um on 350 nm thick SiNx on top of niobium or Si to the following specifications:
    a. Cross wafer uniformity better than +/- 3 %
    b. Etch profile between 85 - 90 degrees
    c. An etch rate of greater than 125 nm/min
6. Be able to perform O2 clean on substrate surface
7. Be able to perform the etch chamber cleaning recipes to ensure the cleanliness of the etch chamber.
8. Have programmable parameter ramping capability for powers, pressures, and times for both etch and passivation phases.

Section D – Delivery, Shipping, Packing

A.1 Packaging

Packaging for the three (3) ICP tools shall contain tilt meter or shock sensors.

Please also refer to Section G – SLAC Terms and Conditions for Fixed Price Commercial Supplies and Services, Article 11, "Instructions for Packaging."

A.2 - Marking for Shipment

Exterior of shipping containers shall be adequately and properly marked for identification. All containers shall include the following minimum exterior marking:

a. Addressee:

SLAC National Accelerator Laboratory, Building 57

Attention: Project Manager (Subcontract # TBD)

2575 Sand Hill Road

Menlo Park, CA 94025

b. Shipper: TBD

c. The SLAC subcontract or purchase order number

Section E
Inspections and Acceptance

LINE-ITEM NO	INSPECT AT	INSPECT BY	ACCEPT AT	ACCEPT BY
001	Vendor/SLAC*	University	Vendor/SLAC*	University
002	Vendor/SLAC*	University	Vendor/SLAC*	University
003	Vendor/SLAC*	University	Vendor/SLAC*	University
004	Vendor/SLAC*	University	Vendor/SLAC*	University
005	SLAC	University	Vendor/SLAC	University

*Note:

a) Refer to Section C - Statement of Work dated August 25, 2021, for Acceptance Testing Requirements.

b) Preliminary Inspection and Acceptance at Vendor prior to delivery. SLAC Technical Team requires a standard factory acceptance report demonstrating that the 3 ICP Tools perform according to the Contractor's standard factory acceptance test. SLAC Project Team reserves the right to be present during the Factory Acceptance Test.

Section F – Deliveries or Performance

DELIVERY INFORMATION

LINE-ITEM NO	DELIVERY DATE	QUANTITY	SHIP TO ADDRESS
001	No Later Than (NLT) 12 Months ARO	1 Each	SLAC National Accelerator Laboratory
002	No Later Than (NLT) 12 Months ARO	1 Each	SLAC National Accelerator Laboratory
003	No Later Than (NLT) 12 Months ARO	1 Each	SLAC National Accelerator Laboratory
004	No Later Than (NLT) 12 Months ARO	1 Lot	SLAC National Accelerator Laboratory
005	No Later Than (NLT) 8 weeks after delivery of ICP Tools	1 Lot	SLAC National Accelerator Laboratory

Section G – General Terms and Conditions

The following attached SLAC National Accelerator Laboratory's Terms and Conditions applies to this Subcontract:

- SLAC Terms and Conditions for Fixed Price for Commercial Supplies and Services (December 2016).
- SLAC General Terms and Conditions for On Site "Green" Services Subcontract Rider (March 2021).
- SLAC General Terms and Conditions COVID-19 Rider for On-Site Contractors (November 2021).

1. DEFINITIONS

As used in the Subcontract the term:

a. "Buyer" means the Board of Trustees of the Leland Stanford Jr. University, or any duly authorized representative thereof, acting through SLAC National Accelerator Laboratory (SLAC) under its Management and Operating Contract with the United States Department of Energy (DOE).

b. "Commercial item" or "item" means "commercial item" as defined in 48 C.F.R. (Federal Acquisition Regulation, or "FAR") 2.101.

c. "Government" means the Government of the United States of America.

d. "Micro-Purchase Threshold" shall mean the threshold defined in FAR 2.101, as updated from time to time, which is $3,500 for supplies or $2,500 for services subject to the Service Contract Act, as of the revision date of these terms.

e. "Procurement Specialist" means Buyer's designated contracting officer with the authority to bind Buyer. Unless otherwise provided in writing herein, no other Buyer personnel or agents possess such authority.

f. "Seller" means the firm (individual person and/or entity) supplying the materials, supplies or services called for under the Subcontract. Seller may also be referred to as supplier, subcontractor or vendor.

g. "Simplified Acquisition Threshold" shall mean the threshold defined in FAR 2.101, as updated from time to time, which is $150,000 as of the revision date of these terms.

h. "Technical Representative(s) or Service Manager(s)," if one or more is designated in this Subcontract, Buyer's agent(s) for all technical inquiries and oversight. The Technical Representative or Service Manager has the authority to provide clarifying instruction or grant approvals in the manner defined in the Subcontract, but not to modify or amend any term of this Subcontract, nor to commit Buyer funds.

2. ENTIRE AGREEMENT AND ORDER OF PRECEDENCE

a. The Subcontract shall consist of any or all of the following documents: (1) Subcontract Section A or the Signed Purchase Order, including any special terms and conditions attached thereto (sometimes referred to as Section H); (2) these Standard Terms and Conditions and any On-Site Supplemental Terms and Conditions; (3) Sections B-F of the Subcontract (including the Scope of Work); (4) any other Buyer referenced and incorporated clauses, provisions, and documents; and (5) Seller's written and accepted proposal. These documents comprise the entire agreement between the parties and supersede all prior proposals, representations, negotiations, or agreements, whether written or oral.

b. Any conflicts and/or inconsistencies in the documents identified above comprising this Subcontract shall be resolved by giving precedence in the order they are listed above, with the first numbered item(s) having the highest precedence, and each following item(s) having successively lower precedence.

3. SELLER ACCEPTANCE OF THIS SUBCONTRACT

a. Seller's acknowledgement, commencement of performance, or acceptance of payment, whichever occurs soonest, shall constitute Seller's unqualified acceptance of the Subcontract.

b. Seller, by accepting the Subcontract, does hereby agree that (i) this Subcontract sets forth the entire agreement between the Buyer and the Seller and supersedes any prior offers, negotiations, and agreements concerning the subject matter of this Subcontract, and (ii) no form, document, or additional or differing terms supplied by the Seller shall constitute a part of the Subcontract or have any effect, regardless of where they are included, unless specifically and expressly accepted in writing by the Procurement Specialist.

4. PUBLICITY

Seller shall not release any advertising copy mentioning Buyer or quoting the opinion of any of Buyer's employees**.** Seller shall not state or imply in advertising or promotions that Buyer, the Government, or their employees endorse in any way Seller's products or services. The Seller and its employees, agents, or contracts shall not use or exploit "Stanford University," "SLAC," or any other trademark or logo owned by the Buyer or the Government, unless necessary to perform the Subcontract.

5. ASSIGNMENT

Neither the Subcontract nor any interest therein nor claim thereunder shall be assigned or transferred by the Seller except as expressly authorized in writing by the Procurement Specialist, provided that the Seller or its assignee's rights to be paid amounts due as a result of performance of the Subcontract may be assigned to a bank, trust company or other financing institution, including any Federal lending institution. Payments to an assignee shall be subject to setoff or recoupment for any present or future claims of Buyer against Seller.

6. PERMITS, LICENSES, AND APPLICABLE LAWS

In performance of the Subcontract, Seller shall, at its own expense, comply with all applicable local, state, and federal laws, orders, rules, regulations, and ordinances. Seller must, at its own expense, have and maintain the license(s) and/or certification(s) appropriate to its trade, issued by the relevant trade association, or regulatory or administrative agency.

7. TITLE AND RESPONSIBILITY

a. Title to the material and supplies Purchased hereunder shall pass to the Government at the point of delivery to the Buyer; and, if purchased F.O.B. Shipping Point, delivery to the carrier by the Seller shall be deemed delivery to the Buyer. No insurance charges will be allowed unless specifically authorized in the Subcontract.

b. Except as otherwise provided in the Subcontract (i) the Seller shall be responsible for the supplies covered by the Subcontract until they are delivered at the designated delivery point, regardless of the point of inspection; (ii) the Seller shall bear all risks as to rejected supplies after notice of rejection, except that the Buyer shall be responsible for the loss, or destruction of, or damage to, the supplies if loss, destruction or damage results from the gross negligence of officers, agents, or employees of the Buyer acting within the scope of their employment.

c. The actual total transportation charges paid to the carrier(s) by the consignor or consignee shall be reimbursed by the Seller.

8. TAX AND BUYER EXEMPTION

a. Except as may be otherwise provided in the Subcontract, the selling price includes all applicable Federal taxes in effect on the date of this Subcontract but does not include any State or local sales, use, or other tax directly applicable to the completed supplies or services covered by the Subcontract nor any other tax, duties, tariffs, and similar fees from which the Seller or this transaction is exempt. Upon request of the Seller, the Buyer shall furnish, unless no legal basis exists therefore, a tax exemption certificate or similar evidence of exemption with respect to any such tax not included in the Seller's price pursuant to this article.

b. For Sellers providing services, the Buyer will automatically withhold from any invoice paid appropriate taxes, if required by the U.S. Internal Revenue Service and the California Franchise Tax Board.

9. EXTRAS

Except as otherwise provided in the Subcontract no payment for extras shall be made unless such extras and the price therefore have been authorized in writing by the Buyer.

10. CHANGES

Changes to the Subcontract may be made only by the written agreement of the parties. Only the Buyer's duly authorized Procurement Specialist may agree to such changes on Buyer's behalf.

11. INSTRUCTIONS FOR PACKAGING

Packing and packaging shall be adequate to prevent damage when shipped by common carrier or method utilized. Seller shall be solely responsible for any damage resulting from improper packaging, containerizing, or lack thereof. The Seller shall indicate the Subcontract and/or Purchase Order number on each container or package. An itemized packing list shall be affixed to the outermost cover of each container or package. The use of environmentally sustainable packaging materials is required.

12. QUALITY OF ITEMS AND COUNTERFEIT PARTS

All Item(s), including any materials and supplies furnished by the Seller in performance of any services, shall as a minimum: (1) be new and genuine, or reconditioned and so identified and warranted as new, genuine and not of such age or so deteriorated as to impair their usefulness or safety; and (2) not contain any counterfeit or suspect materials, parts, or components. The furnishing of reconditioned Items must be specified in the Subcontract or approved by the Buyer's Procurement Specialist. Types of materials, parts, and components known to have been counterfeit or suspect include, but are not limited to: electrical components, piping, fittings, flanges, and fasteners. Any acceptance of items or materials delivered to Buyer not meeting these minimum requirements shall be deemed null and void, and at minimum, Buyer shall be entitled to replacement at no cost or refund at any time after such defects are reasonably discovered.

13. INSPECTION AND ACCEPTANCE OF ITEMS OR SERVICES

a. The Buyer reserves the right to inspect all and every part of the items under the Subcontract, during and after completion of performance. The Buyer shall not be obligated to inspect the items, and neither the inspection nor the lack of inspection by the Buyer shall relieve the Seller of its responsibility for providing the items in accordance with the Subcontract. The inspection or use of or payment for an item under the Subcontract, either wholly or in part, shall not be construed as acceptance.

b. If any item or any part thereof is not in accordance with the Subcontract, the Buyer may notify the Seller that the item is rejected. Thereupon, the Seller shall, at its own expense, take the necessary corrective action, which shall include, at minimum, expediently replacing such item, providing necessary services, or providing a full refund.

c. Such notice of rejection shall be provided within forty-five (45) days of the receipt of the items or completion of services. If no such notice of rejection is provided within the aforementioned time, or if the Procurement Specialist formally accepts the item or services in writing, such item or services shall be deemed accepted, provided, however, this period may be extended to thirty (30) days after the date of discovery of a material defect (if such date is later) if (1) the Buyer could not have reasonably discovered such a material defect from a reasonable inspection; or (2) the defect is of the type specified in QUALITY OF ITEMS AND COUNTERFEIT PARTS.

14. WARRANTY

Seller at minimum warrants that all services, supplies and equipment delivered hereunder shall be free from all defects in materials and workmanship and shall comply with all the requirements of the Subcontract. The warranty shall begin upon acceptance and extend for a period of the manufacturer or service provider's standard warranty period or one year, whichever is longer. Any defective supplies or equipment shall be promptly repaired or replaced during the warranty period at no cost to Buyer. All expenses of return shipment and reshipment to Buyer shall be borne by Seller.

15. EXCUSABLE DELAYS

The Seller shall be liable for delays unless such delays are caused by an occurrence beyond the reasonable control of the Seller and without its fault or negligence, such as acts of God or the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, flood, epidemics quarantine, restrictions, strikes, unusually severe weather, and delays of common carriers. The Seller shall notify the Buyer in writing as soon as reasonably possible after commencement of any excusable delay, setting forth the full particulars in connection therewith, shall remedy such occurrence with all reasonable dispatch, and shall promptly give the University written notice of the cessation of such occurrence.

16. INVOICES AND PAYMENTS

a. General. Except as otherwise provided in the Subcontract, no later than 30 days upon Buyer's acceptance and receipt of invoices satisfactory to Buyer, whichever occurs later, the Seller shall be paid the amounts agreed, less deductions and discounts if any. Payments shall be made by check or automated clearing house (ACH) as agreed.

b. Partial payments. Unless otherwise specified, partial payments will not be made. This, however, does not preclude payments for partial shipments of completed deliverables (as distinguished from components).

c. Seller invoice requirements. At minimum, all invoices shall contain the information required by Buyer's model invoice, available at http://www-group.slac.stanford.edu/ocfo/purchasing/supplier-program/doing-business-with-slac.html, incorporated herein by reference. Although not required, Buyer prefers the use of its model invoice where practicable. Further, all invoices shall reference applicable Purchase Orders by Buyer Purchase Order number, and the applicable line item numbers or other item number specified on the Purchase Order or Subcontract.

d. California requirements. For Sellers providing services in California and if Seller is not a California resident or entity, or does not have an office in California, the invoice must specify the number of hours and amount being invoiced for services performed in California.

e. Method of submission. All invoices shall be submitted to ap@slac.stanford.edu or to the following address:
SLAC National Accelerator Laboratory
c/o Accounts Payable, MS 09
2575 Sand Hill Road
Menlo Park, California 94025
Please use c/o Accounts Payable DISCOUNT DESK, MS 09 for invoices with discount terms.

17. TRAVEL

Only when travel is included as part of the performance under the Subcontract and is set forth as a specific cost/price element in the Subcontract, the following requirements shall apply:

a. Expenses incurred for travel, lodging, meals, and incidental expenses shall be reimbursed only to the extent that they comply with Buyer's travel reimbursement guidelines. The Seller shall submit with its invoice itemized receipts showing proof of payment for expenses in excess of $75. If travel is not reimbursed on a cost-basis, then the requirements of this paragraph do not apply.

b. To the extent any foreign travel (outside the U.S.) is required under this Subcontract, it shall be conducted pursuant to the requirements contained in DOE Order 551.1, "Official Foreign Travel" or any subsequent version of the Order in effect at the time of award. All Foreign travel requests must be entered into the DOE Foreign Travel Management System (FTMS) within 35 calendar days before the proposed departure date. Travelers must contact the Procurement Specialist for the necessary foreign travel forms and processes well in advance of the FTMS deadline. All foreign travel request forms are to be submitted to the Travel Office for entry into FTMS.

c. No Foreign travel shall be taken until a DOE FTMS Foreign Travel Approval Number has been obtained from the SLAC Travel Office and transmitted to the Seller/Subcontractor. Reimbursement for foreign travel incurred without a FTMS Approval Number will not be allowed. The SLAC Travel Office may be contacted at Phone 650-926-4346, or by email at travel@slac.stanford.edu.

18. INDEPENDENT CONTRACTOR

Seller is an independent contractor in all its operations and activities hereunder. The employees used by Seller to perform Work under the Subcontract shall be Seller's employees exclusively without any relation whatsoever to Buyer or its affiliates.

19. LIMITATION ON LIABILITY

Except as otherwise provided herein, neither Party shall be liable for consequential damages resulting from this Subcontract.

20. INDEMNITY

The Seller shall indemnify, defend, and hold harmless the Board of Trustees of the Leland Stanford Junior University, the Government of the United States, and their respective trustees, contractors, officers, agents, and employees from and against all claims of noncompliance with or violation of applicable laws or regulations, any and all loss, property damage, expense, personal injury, death, or other liability arising out of or related to the performance of the work hereunder by Seller or Seller's agents, provided that such loss is not caused by the gross negligence or willful misconduct of the Buyer. The Seller shall also pay any cost and/or attorneys' fees that may be incurred by any of the above-name indemnities in enforcing this indemnity.

21. DISPUTES AND GOVERNING LAW

a. The parties shall attempt to resolve any dispute, controversy, or claim arising out of or related to this Subcontract in good faith, by direct, informal negotiations. Pending resolution of the dispute, claim, or controversy, the Seller shall proceed diligently with the performance of this Subcontract, in accordance with its terms and conditions.

b. All disputes under this Subcontract that are not disposed of by mutual agreement may be decided by recourse to an action at law or in equity.

c. The parties submit all their disputes arising out of or in connection with this Subcontract to the exclusive jurisdiction of the state or Federal courts located in the Northern District of California.

d. Any substantive issue of law shall be determined in accordance with the body of applicable Federal law. If there is no applicable Federal Law, the law of the State of California shall apply.

22. CONFIDENTIALITY

a. Except to the extent required by governing law or necessary to report fraud, waste, or abuse to the Government, Seller, its employees, contractors, and agents shall not reproduce or disclose any information, knowledge, or data of the Buyer that the Seller receives or have access to in connection with this Subcontract when such information, knowledge, or data is marked confidential, proprietary, trade secret, official use only, or otherwise so expressly designated by the Buyer, the Government, or third-party contractors.

b. Seller shall have appropriate agreements or policies with its employees, agents, and next-tier subcontractors to ensure compliance with this clause.

23. TIME IS OF THE ESSENCE

Time is of the essence. The Seller shall prosecute the work diligently with such forces as the Seller determines are necessary to complete the work of this Subcontract within the times specified in the Subcontract or the Subcontract term, whichever is soonest.

24. EXPORT CONTROL

a. Seller agrees that it shall not provide, deliver, or display any information, materials, or products subject to United States export controls, including those subject to the Export Administration Regulations ("EAR") administered by the Commerce Department or the International Traffic in Arms Regulation ("ITAR") administered by the State Department unless it provides written notice of the same at least five (5) business days prior to the delivery or display to the Procurement Specialist.

b. If any information, materials, or products delivered are subject to such controls, Seller shall provide applicable export control classification numbers or other information requested by the Buyer to comply with applicable export laws and regulations.

25. CLAUSES INCORPORATED BY REFERENCE

The Federal Acquisition Regulation ("FAR") and Department of Energy Acquisition Regulation ("DEAR") clauses listed below, which are located in Chapters 1 and 9, respectively, of Title 48 of the Code of Federal Regulations, are incorporated by this reference as a part of the Subcontract as prescribed below or as prescribed by the clauses' prescriptives. If a condition listed next to the listed clause is inapplicable, then the clause is not incorporated by reference. As used in the clauses, the term "contract" shall mean the Subcontract; the term "Contractor" shall mean the entity ("Subcontractor" or "Seller") who entered into the Subcontract with the Buyer; the term "subcontractor" shall mean the Subcontractor/Seller's subcontractor; and the terms "Government" and "Contracting Officer" shall mean the Buyer, except in FAR clauses 52.227-1, 52.227-3, 52.227-14, and 52.227-19, 52.204-10 in which clauses "Government" shall mean the Government and "Contracting Officer" shall mean the DOE Contracting Officer for Prime Contract DE-AC02-76SF00515 with the Buyer. The Seller shall include the listed clauses in its subcontracts at any tier, to the extent applicable.

THE FOLLOWING CLAUSES APPLY TO ALL SUBCONTRACTS:

FAR 52.212-4(L),(M)	CONTRACT TERMS AND CONDITIONS- COMMERCIAL ITEMS (MAY 2015) (Termination for Convenience and Default Provisions in (l) and (m) only)
FAR 52.222-4	CONTRACT WORK HOURS AND SAFETY STANDARDS ACT – OVERTIME COMPENSATION (MAY 2014), if the Subcontract involves employment of laborers and mechanics as specified by law
FAR 52.222-21	PROHIBITION OF SEGREGATED FACILITIES (APR 2015) if the Subcontract includes the Equal Opportunity clause
FAR 52.222-26	EQUAL OPPORTUNITY (APR 2015), unless the Subcontract is entirely exempt from the requirements of Executive Order 11246
FAR 52.222-50	COMBATING TRAFFICKING IN PERSONS (MAR 2015)
FAR 52.223-3	HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997), ALT I (JUL 1995), if the Subcontract will require the delivery of hazardous materials as defined in FAR 23.301
FAR 52.223-11	OZONE-DEPLETING SUBSTANCES (MAY 2001), if the Subcontract involves delivery or use of such substances
FAR 52.223-12	REFRIGERATION EQUIPMENT AND AIR CONDITIONERS (MAY 1995), if the Subcontract involves the maintenance, service, repair, or disposal of such equipment
FAR 52.223-13	ACQUISITION OF EPEAT®–REGISTERED IMAGING EQUIPMENT (JUN 2014), if the Subcontract involves delivery or use of such equipment at Buyer's or another Federally controlled facility
FAR 52.223-14	ACQUISITION OF EPEAT®–REGISTERED TELEVISIONS (JUN 2014), if the Subcontract involves delivery or use of such equipment at Buyer's or another Federally controlled facility
FAR 52.223-15	ENERGY EFFICIENCY IN ENERGY-CONSUMING PRODUCTS (DEC 2007), if the Subcontract involves delivery or use of energy consuming products at Buyer's or another Federally controlled facility
FAR 52.223-16	ACQUISITION OF EPEAT®–REGISTERED PERSONAL COMPUTER PRODUCTS (OCT 2015) ALT I (JUN 2014), if the Subcontract involves delivery or use of such equipment at Buyer's or another Federally controlled facility
FAR 52.223-17	AFFIRMATIVE PROCUREMENT OF EPA- DESIGNATED ITEMS IN SERVICE AND CONSTRUCTION CONTRACTS (MAY 2008), if the subcontract involves the use of any EPA-designated products
FAR 52.225-1	BUY AMERICAN – SUPPLIES (MAY 2014)
FAR 52.225-8	DUTY-FREE ENTRY (OCT 2010), if (1) supplies are identified in the Subcontract to be accorded duty-free entry will be imported into the customs territory of the U.S.; or (2) other foreign supplies in excess of $15,000 may be imported into the customs territory of the U.S.
FAR 52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUN 2008)
DEAR 952.5227-8	REFUND OF ROYALTIES (AUG 2002), if royalties exceeding $250 are paid under the Subcontract by the Subcontractor, or by a subcontractor at any tier
FAR 52.227-3	PATENT INDEMNITY (APR 1984)
FAR 52.227-14	RIGHTS IN DATA – GENERAL (MAY 2014), if technical data or computer software will be produced or if data will be produced or delivered, with Alternate V, and DEAR 927.409 paras. (a) and (d)(3) If delivery of Restricted Computer Software is required in the Subcontract, then add Alternate III. If delivery of Limited Rights Data is required, then add Alternate II with the following five purposes to be added at the end of paragraph (a) of the clause:

1. Use (except for manufacture) by other contractors;
2. Evaluation by non-government evaluators:
3. Use (except for manufacture) by other contractors participating in the Government's program of which the specific subcontract is a part, for information and use in connection with the work performed under each subcontract;
4. Emergency repair or overhaul work; and
5. Release to a foreign government, or instrumentality thereof, as the interests of the United States Government may require, for information or evaluation, or for emergency repair or overhaul work by such government.

FAR 52.227-19 COMMERCIAL COMPUTER SOFTWARE LICENSE (DEC 2007), in place of all other data rights clauses, if the Subcontract solely involves the acquisition of commercially available computer software and a GSA/Subcontractor Multiple Award Federal Supply Schedule Contract is not applicable

FAR 52.232-39 UNENFORCEABILITY OF UNAUTHORIZED OBLIGATIONS (JUN 2013)

FAR 52.244-6 SUBCONTRACTS FOR COMMERCIAL ITEMS (OCT 2015)

FAR 52.247-63 PREFERENCE FOR U.S.-FLAG CARRIERS (JUN 2003), if the Subcontract may involve international air transportation.

THE FOLLOWING CLAUSES APPLY IF THE SUBCONTRACT EXCEEDS THE MICRO-PURCHASE THRESHOLD:

FAR 52.222-41 SERVICE CONTRACT ACT OF 1965, AS AMENDED (MAY 2014), if the Subcontract is principally for the furnishing of services in the United States through the use of "service employees" unless the Subcontract qualifies for class deviation under Section 4(b) of the McNamara-O'Hara Service Contract Act or any other exception available under Federal law (see, e.g., 29 C.F.R. §§ 4.115, 4.123(e)).

FAR 52.222-42 STATEMENT OF EQUIVALENT RATES FOR FEDERAL HIRES (MAY 2014), if FAR 52.222-41 applies

FAR 52.222-43 FAIR LABOR STANDARDS ACT AND SERVICE CONTRACT LABOR STANDARDS – PRICE ADJUSTMENT (MULTIPLE YEAR AND OPTION CONTRACTS) (MAY 2014), if FAR 52.222-41 applies, and the Subcontract is a multi-year contract, or the Subcontract is a contract with options to renew exceeding the Simplified Acquisition Threshold

FAR 52.222-54 EMPLOYMENT ELIGIBILITY VERIFICATION (OCT 2015), unless the services or supplies provided are for the purchase of a Commercially Available Off-The-Shelf ("COTS") item or services are performed entirely outside the United States

FAR 52.222-55 MINIMUM WAGES UNDER EXECUTIVE ORDER 13658 (DEC 2015), if FAR 52.222-41 applies

FAR 52.223-18 ENCOURAGING CONTRACTOR POLICIES TO BAN TEXT MESSAGING WHILE DRIVING (AUG 2011)

THE FOLLOWING CLAUSES APPLY IF THE SUBCONTRACT IS FOR $10,000 OR MORE:

FAR 52.222-40 NOTIFICATION OF EMPLOYEE RIGHTS UNDER THE NATIONAL LABOR RELATIONS ACT (DEC 2010), if the Subcontract will be performed wholly or partially in the United States

THE FOLLOWING CLAUSES APPLY IF THE SUBCONTRACT IS FOR $15,000 OR MORE:

FAR 52.222-36 EQUAL OPPORTUNITY FOR WORKERS WITH DISABILITIES (JUL 2014)

THE FOLLOWING CLAUSES APPLY IF THE SUBCONTRACT IS FOR $30,000 OR MORE:

FAR 52.204-10 REPORTING EXECUTIVE COMPENSATION AND FIRST TIER SUBCONTRACT AWARDS (OCT 2015), solely incorporated to the extent Seller exceeds the thresholds specified in paragraphs (d)(3) and (g)(2) of the clause, in which case, Seller shall provide the required information to allow the Buyer to meet its obligations as a prime contractor unless such information is publicly available per (d)(3)(ii)

THE FOLLOWING CLAUSES APPLY IF THE SUBCONTRACT EXCEEDS $100,000

FAR 52.227-1 AUTHORIZATION AND CONSENT (DEC 2007)

DEAR 970.5227-5 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (DEC 2000)

THE FOLLOWING CLAUSES APPLY IF THE SUBCONTRACT EXCEEDS THE SIMPLIFIED ACQUISITION THRESHOLD

FAR 52.203-6 RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT (SEP 2006), with Alternate I (SEP 2006)

FAR 52.203-7 ANTI-KICKBACK PROCEDURES (MAY 2014), excepting paragraph (c)(1)

FAR 52.203-10 PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (MAY 2014)

FAR 52.203-12 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (OCT 2010)

FAR 52.203-17 CONTRACTOR EMPLOYEE WHISTLEBLOWER RIGHTS AND REQUIREMENT TO INFORM EMPLOYEES OF WHISTLEBLOWER RIGHTS (APR 2014)

FAR 52.219-8 UTILIZATION OF SMALL BUSINESS CONCERNS (OCT 2014), unless there are no subcontracting opportunities

FAR 52.222-35 EQUAL OPPORTUNITY FOR VETERANS (OCT 2015)

FAR 52.222-37 EMPLOYMENT REPORTS ON VETERANS (OCT 2015)

FAR 52.222-44 FAIR LABOR STANDARDS ACT AND SERVICE CONTRACT ACT – PRICE ADJUSTMENT (MAY 2014), if FAR 52.222-41 applies, but FAR 52.222-43 does not apply

FAR 52.229-3 FEDERAL, STATE AND LOCAL TAXES (FEB 2013), if the Subcontract is to performed wholly or partly in the United States or its outlying

areas

THE FOLLOWING CLAUSES APPLY IF THE SUBCONTRACT EXCEEDS $500,000

FAR 52.204-14 SERVICE CONTRACT REPORTING REQUIREMENTS (JAN 2014), solely with respect to providing the information in subparagraph (f) the clause and public availability of the information provided

THE FOLLOWING CLAUSES APPLY IF THE SUBCONTRACT EXCEEDS $700,000

FAR 52.219-9 SMALL BUSINESS SUBCONTRACTING PLAN (OCT 2015), unless the Seller is a small business or there are no subcontracting possibilities

THE FOLLOWING CLAUSE APPLIES IF THE SUBCONTRACT EXCEEDS $5.5 MILLION AND A PERFORMANCE PERIOD OF MORE THAN 120 DAYS:

FAR 52.203-13 CONTRACTOR CODE OF BUSINESS ETHICS AND CONDUCT (OCT 2015)

GENERAL TERMS AND CONDITIONS

For On Site "Green" Services

Subcontract Rider

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1. CLAUSES INCORPORATED BY REFERENCE

The Article of the Standard Terms and Conditions entitled "Clauses Incorporated by Reference" is supplemented with the following clauses:

DEAR 952.203-70	WHISTLEBLOWER PROTECTION FOR CONTRACTOR EMPLOYEES (DEC 2000)
DEAR 970.5223-4	WORKPLACE SUBSTANCE ABUSE PROGRAMS AT DOE SITES (DEC 2010)
DEAR 952.204-77	COMPUTER SECURITY (AUG 2006), in Subcontracts in which the Seller may have access to computers owned, leased or operated on behalf of the Department of Energy

2. BUYER MONITORING OF THE WORK

A. The Seller is responsible for performing the work called out herein in a manner fully compliant with all Subcontract requirements. For oversight purposes and any other reason specified in the Subcontract, the work under this Subcontract is subject to monitoring and quality assurance surveillance by the Technical Representative and the Department of Energy.

B. The Technical Representative shall not impose tasks or requirements upon the Seller additional to or different from those required by the Subcontract. The Technical Representative shall provide such technical guidance to the Seller as may be appropriate and reasonable to assure compliance with all specifications, technical requirements, and other obligations of the Subcontract.

3. GOVERNMENT-FURNISHED PROPERTY

A. The requirements of this Article three (3) apply when certain Buyer-provided property (hereinafter referred to as Government-furnished property or "GFP") is provided to the Seller in performance of the Subcontract. The schedules set forth in this Subcontract are based upon the premise that the GFP will be delivered to the Seller in sufficient time to enable Seller to meet said schedules. In the event that such GFP is not delivered to Seller in sufficient time to enable Seller to meet the said schedules, the Buyer shall, if requested by the Seller, determine if any unreasonable delay has occurred, and if so, shall grant a reasonable extension of the time for completion of performance.

B. Title to such GFP shall be and remain with the Government, and shall not be affected by the incorporation or attachment thereof to any property not owned by the Government, nor shall any such property, or any part thereof, be or become a fixture or lose its identity as personal property by reason of affixation to any realty. The Seller shall maintain adequate property control records of such property consistent with good business practice and as may be prescribed by the Government or the Buyer, and shall cause all such property to be clearly marked (if not so marked) to show that it is property of the Government.

C. GFP shall be used for the performance of this Subcontract only.

D. The Seller shall, in accordance with sound industrial practice, protect and preserve such GFP until completion by the Seller of all work required by this Subcontract. Should any repair or replacement of any such property become necessary during

the term of this Subcontract other than by reason of the negligence or fault of the Seller, the same shall be made by the Seller with the approval of and for the account of the Buyer and the title thereto shall vest in the Government and any delay occasioned thereby shall be considered an excusable delay under this Subcontract.

E. Unless otherwise provided in this Subcontract, the Seller assumes the risk of and shall be responsible for any loss of or damage to the GFP in its possession except for reasonable wear and tear, or due to causes unrelated to the Seller's fault or negligence.

F. The Government and the Buyer shall at all times have access to the premises wherein any GFP is located.

G. Upon completion of this Subcontract, the Seller shall submit, in a form acceptable to the Buyer, inventory schedules covering all items of GFP utilized in the performance of this Subcontract (including any resulting scrap), not theretofore delivered to the Government or the Buyer.

4. SELLER PERSONNEL

A. All Seller employees performing the work under this Subcontract shall have that level of education, experience, physical competence, and training required for the skillful, workmanlike, efficient and safe carrying out of their Subcontract tasks and shall carry out such tasks in like manner.

B. Only persons who are eligible to work in the United States of America (U.S. citizens, green card holders, or those with the appropriate visa) may be employed to work at this site. Sellers and their employees must show government-issued identification to gain access to this site, and persons who are unable to provideproper I.D. will not be permitted to enter SLAC premises.

C. In the event that non-English speaking workers are utilized, the Seller shall, at all times when work activity is on-going, have a designated worker who is bilingual in English and the language of those workers on site to interpret work instructions and safety orders.

D. At the request of the Buyer, the Seller shall notify the Buyer, in writing, of the names of all of its personnel and sub tiers, together with a summary of the extent and character of the work to be done by each.

5. WORK HOURS AND HOLIDAYS

i. The Seller will be permitted to work in the work areas, and delivery of materials may be made during normal working hours (7 am to 5 pm, Monday through Friday, unless otherwise indicated in the Contract Documents) and, when authorized in advance by the Procurement Specialist, after hours, on holidays, or weekends.

A. SLAC holidays:

New Year's Day	Independence Day
Martin Luther King's Birthday Holiday President's	Labor Day Holiday
Birthday Holiday	Thanksgiving: Thursday & Friday
Memorial Day Holiday	Christmas - two days

Additionally, SLAC is usually shut down during the period between Christmas and New Year's Day

B. Unless required by law, no extra payment will be allowed for extra expense incurred by the Seller for its employees working holidays.

6. COOPERATION WITH OTHER SELLERS AND BUYER PERSONNEL

Other Seller and Buyer personnel may be working in or occupying the work area within and adjacent to the Seller's work area. All Sellers shall have equal rights to use the haul roads, grounds, utilities, etc., and shall coordinate their activities which may be in conflict so as to cause a minimum of interference. The Seller shall cooperate with others in the scheduling of work to avoid undue inconveniences to all concerned. The Seller shall not commit or permit any act which will interfere with the performance of work by any other Seller or by Buyer employees.

7. NOTICE OF LABOR DISPUTES

Whenever an actual or potential labor dispute is delaying or threatens to delay the performance of the work, the Seller shall immediately notify the Buyer in writing. Such notice shall include all relevant information concerning the dispute and its background.

8. ENVIRONMENTAL PROTECTION REQUIREMENTS

A. All personnel and equipment necessary for the protection of the environment in performance of the Subcontract shall be the responsibility of and shall be provided by the Seller. Failure to maintain adequate measures to ensure protection of the environment as required by applicable laws and Buyer standards may result in termination for default, and assessment of clean-up costs.

B. Sellers, their personnel and sub tiers shall not cause to be delivered or bring radioactive materials or radiation generating devices on Buyer or SLAC premises without prior express approval from the Procurement Specialist and designated representatives from Buyers' Radiation Protection Department. Examples of such radioactive materials and radiation

generating devices are available.

C. All work shall be performed in a manner consistent with SLAC's Environmental, Safety and Health Policy.

9. INJURY AND ILLNESS PREVENTION PROGRAM IMPLEMENTATION

A. Seller is responsible for safe working practices and shall ensure the safety of their personnel, sub tier personnel, Buyer personnel, other personnel and visitors, Buyer and Government property, and private property in the performance of the Subcontract. Seller, its personnel and sub tiers shall comply with all applicable safety and health laws, standards, and regulations.

B. Seller shall implement, and require its personnel and sub tiers to implement SLAC's Injury and Illness Prevention Program (IIPP), or their own equivalent. Seller shall implement, and require its personnel and sub tiers to implement SLAC ES&H Manual Chapters 2 and 42. Seller shall implement, and require its personnel and sub tiers to implement, Work Planning and Control (WPC) to ensure that the overall project and each defined work activity conforms to SLAC's WPC program. In addition, to the extent an on-site incident or accident requiring investigation occurs, the Seller shall fully cooperate in such Buyer and DOE investigations, including by providing access to relevant documentation and personnel.

C. The Seller shall establish processes to ensure hazards are identified and abated routinely. All Buyer employees, agents, and sub tiers, and DOE employees and agents, have the authority and responsibility to identify and stop any activity creating an imminent danger.

D. Failure to maintain adequate measures to ensure safe working practices and safety as required by applicable laws and Buyer standards may result in termination for default.

10. RETURN OF SLAC BADGES, KEYS, AND DOSIMETERS

Loss of SLAC badges, keys, and dosimeters present significant security risks and replacement costs for the Buyer. Seller must track ID badges, keys, and dosimeters received by its employees, and notify the Procurement Specialist of any missing badges, keys, or dosimeters as soon as such loss is discovered, and in no event later than closeout. Further, in addition to any other remedies available under this Subcontract, the Buyer may charge, at its discretion, a penalty of $500 per ID badge, key, or dosimeter not returned to the SLAC Security Office within five (5) days of the completion of the Seller's performance. Such penalties shall be deducted from the final payment. The Buyer may, at its discretion, require a certification from the Seller that it has complied with this requirement and has reported to the Procurement Specialist any missing ID badges, dosimeters, or keys.

11. SITE SECURITY AND SENSITIVE FOREIGN NATIONS SITE ACCESS

A. All Seller personnel coming on-site must display a valid driver's license if operating a vehicle, or otherwise provide valid government-issued identification.

B. All Seller personnel regularly performing work on-site must comply with SLAC site access control, badging, training, and emergency protocols.

C. All operations of the Seller shall take place during times specified in the Subcontract or as defined in Section 5 above and be confined to areas defined in the Subcontract, or as otherwise authorized or approved by the Buyer. Noncompliance may result in revocation of access privileges.

D. Seller shall access SLAC computers and networks only when such access is reasonably necessary in performing the Subcontract, or otherwise as expressly authorized by the Procurement Specialist. If such access is permitted, Seller must comply with SLAC cybersecurity policies and standards governing the use of SLAC computers and networks.

E. With the exclusion of GFP furnished to the Seller and Seller's property used in the performance of the Subcontract, all other property on-site belongs to the Buyer or the Government and shall not be removed without express written authorization from the Procurement Specialist .

F. Unless otherwise specified in the Subcontract, Sellers coming on-site must park in areas designated by the Procurement Specialist or the SLAC Security Office.

G. In accordance with the Department of Energy Acquisition Regulation 952.204-71 "Sensitive Foreign Nations Controls (Mar 2011)" and the current version of the DOE Order governing Unclassified Foreign Visits and Assignments (DOE Order 142.3A), specific approval requirements for certain non-U.S. Persons ("U.S. Persons" = U.S. citizens and Permanent Residents) working at SLAC National Accelerator Laboratory have been established for Sellers and must be flowed down to their sub tiers. In accordance with these controls, Seller's personnel performing any effort under this purchase order/subcontract on-site shall be subject to the requirement for the completion and submittal of an online registration form: http://www- group.slac.stanford.edu/esh/security/badge_subcontractor.htm, and may be subject to additional access restrictions pursuant to the DOE Order governing Unclassified Foreign Visits and Assignments.

12. INSURANCE

A. Seller shall secure and maintain in effect at all times during the performance of the work under this Subcontract the coverages of insurance, set forth below, which shall be maintained with companies, underwriters or underwriting firms under forms of policies satisfactory to the Buyer. **The Seller shall furnish to the Buyer concurrently with the execution**

of this Subcontract and prior to commencing any performance thereof, two (2) copies of a Certificate of Insurance substantiating the said coverages and endorsements described below. The types and levels of required insurance for all Subcontracts are as follows:

i. Business Automobile Liability Insurance for owned, scheduled, non-owned, or hired vehicles with a combined single limit not less than one million dollars ($1,000,000) peroccurrence.

ii. Commercial General Liability Insurance with limits (as supplemented by any umbrella policies, if applicable) as follows:

a. For Subcontracts with a total value under $100,000, insurance limits not less than one million dollars ($1,000,000) per occurrence;

b. For Subcontracts with a total value from $100,001 through $999,999, insurance limits not less than three million dollars ($3,000,000) per occurrence;

c. For Subcontracts with a total value greater than one million dollars ($1,000,000), insurance limits not less than five million dollars ($5,000,000) per occurrence.

iii. Worker's Compensation Insurance of not less than $1,000,000 per person; $1,000,000 per accident with an endorsement containing a clause waiving subrogation.

B. Seller shall provide the following endorsements to its Commercial General Liability policy and/or ensure that the Commercial General Liability insurance policy (together with its umbrella policy if used to satisfy insurance limits above) is amended, if needed, to include the following:

i. An endorsement naming the Buyer, Board of Trustees of the Leland Stanford Jr. University, its trustees, officers, employees, faculty, students, volunteers, and agents and DOE as additional insureds under said Commercial General Liability policies with respect to liability arising out of or in any way connected with the performance of the Subcontract and stating that said policies are primary as to any loss to which the insurance coverage provided thereby is applicable without right of contribution from any insurance otherwise maintained by the Buyer or DOE.

ii. A cross liability or severability of interest clause.

iii. A clause waiving subrogation.

iv. Inclusion of contractual liability insurance and a statement nullifying any clause in such insurance policies excluding liability assumed under contract.

C. The Seller, by its signature to this Subcontract, warrants that all of the insurance required by this Subcontract is currently in effect and will be maintained throughout the period of this Subcontract, except that the minimum coverage specified above must not be encumbered by other claims during the period of performance by more than ten percent (10%) of the coverage specified.

13. ASSUMPTION OF RISK UNTIL FINAL ACCEPTANCE

The Seller shall and does hereby assume all risks and responsibility for damage to its work and materials from fire, earthquake, storm and/or other causes prior to the completion and acceptance of the work pursuant to the Article of the Standard Terms and Conditions entitled "Inspection and Acceptance of Items or Services", and shall at its own cost and expense repair and/or replace any work or materials damaged or destroyed.

14. MISCELLANEOUS SITE POLICIES

A. For the purposes of this rider, Green Services are categories of services described on the SLAC Infrastructure and Safety – Work Planning and Control Website.

B. The playing of (radios, phone speaker devices) or listening (use of earbuds, or similar) to music, podcasts, etc. while performing work is not permitted.

C. Except to the extent provided by law, pets are not permitted on Buyer's site.

(END OF GREEN SERVICES RIDER TERMS AND CONDITIONS)

GENERAL TERMS AND CONDITIONS

COVID-19

Rider for On-Site Contractors

1.1. Contractor must provide to SLAC, prior to commencement of any on-site work, or if work has already commenced, one (1) week from the effective date of the modification for this rider, a detailed explanation of how it has implemented, at a minimum, the safety protocol set forth in FAR 52.223-99. Contractor may submit protocol it has developed pursuant to FAR 52.223-99 as an update to its SLAC Site Safety and Health Plan. At all times that Contractor personnel are on-site, Contractor must adhere to SLAC's COVID-19 Safety Protocols Onsite.

1.2. As required under Executive Order Number 14042 and FAR 52.223-99, all on-site Contractors must provide proof of vaccination of its on-site personnel no later than December 8, 2021. In those limited circumstances where a Contractor's personnel is legally entitled to an accommodation, such Contractor must submit a list of those personnel's names to Simon Ovrahim osimon@slac.stanford.edu. This list must be on company letterhead; the personnel's first and last name; and indicate that an accommodation was granted. No further information is requested.

1.3. Contractors that have any unvaccinated workers who are allowed to come on-site due to an accommodation authorized by their employer, are required to work in accordance with SLAC's Protocol Matrix for Unvaccinated Individuals for all tasks pertaining to the scope of work, which includes but is not limited to mandatory weekly COVID-19 testing.

1.4. In addition to previous contractual training requirements, all onsite contractor employees must complete the SLAC online course #376R-SLAC COVID-19 Training for Onsite Contractors (Core) (duration ~30 minutes) prior to coming onsite or when coming onsite for the first time to receive a site access badge.

1.5. Contractor agrees to provide information to their SLAC technical point of contact on a daily basis relating to personnel of the Contractor who have tested positive for COVID-19, are experiencing COVID-19 symptoms, or have been exposed to someone who has tested positive for COVD-19 to enable SLAC to perform the contact tracing and disinfecting of impacted work areas in compliance with guidance from the Centers for Disease Control and Prevention (CDC) and the California Occupational Safety and Health Administration (Cal OSHA). Contractor will be required to disinfect their own property including but not limited to trailer, storage sheds, tools, and equipment, as applicable.

1.6. Contractor shall implement a symptom checking process, and SLAC reserves the right to audit the contractor's symptom checking process up to and including temperature screenings, for unvaccinated personnel. SLAC reserves the right to audit the contractor's COVID-19 Safety Program and protocols for compliance with Federal, state and SLAC requirements including but not limited to symptom checking, vaccination verification and COVID testing,

1.7. Failure to comply with this rider could result in SLAC seeking the appropriate remedies up to and including termination for material breach. Contractor hereby agrees to indemnify, defend, and hold harmless SLAC, the Board of Trustees of Leland Stanford Jr. University, and the Department of Energy and its officers, employees, and agents (hereinafter, "Indemnitees") from any injury, loss or liability whatsoever including reasonable attorneys' fees and/or any other associated costs, from any action, claim, or demand that Contractor, Contractor's personnel, agents, successors, assigns, heirs or legal representatives ("Contractor Parties"), has or may have for any and all personal injuries or damages Contractor Parties may suffer or sustain, regardless of cause or fault, as a result of (i) Contractor's use of SLAC testing resources; (ii) any vaccination of Contractor Parties, whether undertaken pursuant to this Rider or not; (iii) any Contractor Party's infection with COVID-19 that may be related to work for SLAC; or (iv) Contractor's misrepresentation of a Contractor personnel's accommodation or its compliance with covered workplace requirements.

(END OF COVID–19 RIDER FOR ON-SITE CONTRACTORS ONLY)

Section H – Special Terms and Conditions

Special Article 1: Customs Clearance (For International Shipment)

To insure proper Customs clearance, the vendor must instruct their shipping company or broker to mark all paperwork:

"TO BE CLEARED THROUGH CUSTOMS IN SAN FRANCISCO BY JAS Forwarding (USA), INC. (PHONE) 650-581-7230, (FAX) 650-581-7240, Email: SFO-CHB@jas.com (INBOUND & OUTBOUND CONTACT). For additional import or export information use: SFO-Import-Air@jas.com and SFO-Export-Air@jas.com"

Please mark the "BSO" box (Broker Select Option) in the form.

Address to:

JAS Forwarding (USA), Inc.
800 Airport Blvd Suite# 518
Burlingame, CA 94010
Email: SFO-Import-Air@jas.com
Phone: 650-581-7230/ Fax: 650-581-7240

Shipment will be made CIP SLAC, Menlo Park, and Duty Unpaid.

Section I
Specific FAR Contract Clauses

The following FAR clauses are hereby included and is made a part this Subcontract:

- FAR clause 52.211-5, “Materials Requirements” (Aug 2000)
- FAR 52.204-23 – “Prohibition on Contracting for Hardware, Software, and Services Developed or Provided by Kaspersky Lab” (Jul 2018)
- FAR 52.204-25 Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.
- FAR Deviation Clause - Executive Order 14042, Ensuring Adequate COVID Safety Protocols for Federal Contractors *September 30, 2021*

PART 52—SOLICITATION PROVISIONS AND CONTRACT CLAUSES

*****

Subpart 52.2—Text of Provisions and Clauses

*****

[52.223-99 Ensuring Adequate COVID-19 Safety Protocols for Federal Contractors.
ENSURING ADEQUATE COVID-19 SAFETY PROTOCOLS FOR FEDERAL CONTRACTORS (OCT 2021) (DEVIATION)
(a) *Definition*. As used in this clause -
United States or its outlying areas means—
(1) The fifty States;
(2) The District of Columbia;
(3) The commonwealths of Puerto Rico and the Northern Mariana Islands;
(4) The territories of American Samoa, Guam, and the United States Virgin Islands; and
(5) The minor outlying islands of Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Palmyra Atoll, and Wake Atoll.
(b) *Authority.* This clause implements Executive Order 14042, Ensuring Adequate COVID Safety Protocols for Federal Contractors, dated September 9, 2021 (published in the Federal Register on September 14, 2021, 86 FR 50985).
(c) *Compliance.* The Contractor shall comply with all guidance, including guidance conveyed through Frequently Asked Questions, as amended during the performance of this contract, for contractor or subcontractor workplace locations published by the Safer Federal Workforce Task Force (Task Force Guidance) at https:/www.saferfederalworkforce.gov/contractors/.
(d) *Subcontracts*. The Contractor shall include the substance of this clause, including this paragraph (d), in subcontracts at any tier that exceed the simplified acquisition threshold, as defined in Federal Acquisition Regulation 2.101 on the date of subcontract award, and are for services, including construction, performed in whole or in part within the United States or its outlying areas.

(End of clause)

Section J – List of Attachments

Document Type	Description	Pages	Date
Attachment 01	Revised COVID-19 Safety Protocols	2	28 July 2021
Attachment 02	SLAC Protocols for Face Coverings	1	28 June 2021
Attachment 03	Injury and Illness Prevention Program Acknowledgment Form Document: SLAC-I-730-0A21J-032-R001 Draft v1	1	21 May 2021

Attachment 01

MEMORANDUM VIA EMAIL

July 28, 2021

RE: IMPORTANT UPDATES TO OUR COVID SAFETY PROTOCOLS REVISED

COVID-19 SAFETY PROTOCOLSTO ALL SLAC SUBCONTRACTORS:

On June 22, 2021 SLAC issued the Memorandum "Revised COVID-19 Safety Protocols to all SLAC Subcontractors" (the "June 22 Memorandum") relaxing the face covering protocols. Since the issuance of the June 22 Memorandum, news of the COVID-19 Delta variant is causing concern across the country, as it is much more transmissible than previous strains. In accordance with the recommendations announced by the Centers for Disease Control and Prevention yesterday, the Department of Energy has today released updated COVID safety requirements for its buildings and facilities in areas of substantial or high community transmission (7-day case rate of greater than 50 per 100,000).

Given San Mateo County is now experiencing substantial community transmission, SLAC will be reinstating the COVID safety protocol requiring face coverings in all indoor areas (including vehicles with others), regardless of vaccination status, effective tomorrow, July 29.

Exceptions include:

- When working alone in an enclosed office or space that others will not be using (e.g. personal office) with the door closed.
- When eating/drinking indoors, face coverings may be intermittently removed as long as you are at least six feet from another individual.

Protocols for fully vaccinated onsite individuals outdoors
Fully vaccinated people do not need to wear face coverings outdoors onsite at SLAC.

Protecting unvaccinated individuals
Those who are unvaccinated or declined to state vaccination status while onsite at SLAC still need to wear face coverings outdoors when within six feet of others.
For clarification, the COVID-19 Job Safety Analysis (JSA) is still no longer required

prior to Notice to Proceed (NTP). However, the requirements of the COVID-19 Protocol Matrix for Level 1-3 work remain applicable to all unvaccinated individuals. This Matrix includes the use of face coverings and physical distancing. Any COVID-19 Protocol Matrix Level 4 work,whether indoors or outdoors, will still require the use of N95 respirators.

Those who are not vaccinated are strongly advised to participate in the weekly COVID-19 surveillance testing available at SLAC.

The attached updated “Protocols for Face Coverings” is included to assist with what is appropriate in a given situation.

COVID signage throughout the laboratory will be removed or updated over the coming days to reflect these changes. In the meantime, if you have any questions, please email covid@slac.stanford.edu.

Sincerely,

AJ Vandermeyden

AJ Vandermeyden

Team Lead- Construction and Projects

SLAC NATIONAL ACCELERATOR LABORATORY protocol for face coverings

ATTACHMENT 02

Indoors	Fully Vaccinated	Unvaccinated
Open/shared space – e.g. cubicle or lounge area, restroom, stairway, hallway, elevator, meeting/conference/office room		
Alone in enclosed space – e.g. office, huddle room	**Masks Optional**	**Masks Optional**
Eating in break room or at cubicle desk	**Masks Optional+ 6' distance**	**Masks Optional + 6' distance**
Outdoors		
Alone	**Masks Optional**	**Masks Optional**
With others while less than 6 feet apart	**Masks Optional**	
With others while 6 feet apart	**Masks Optional**	**Masks Optional**
Eating with others	**Masks Optional**	**Masks Optional+ 6' distance**
In vehicle		
Government or personal vehicle, with others		
Government or personal vehicle, alone	**Masks Optional**	**Masks Optional**

*Voluntary use of N95s is permitted in lieu of masks

06_21_2021

Questions? *Contact your ESH Coordinator or email covid@slac.stanford.edu*

NATIONAL ACCELERATOR LABORATORY

ENVIRONMENT, SAFETY & HEALTH DIVISION

Chapter 42: Subcontractor Safety

Injury and Illness Prevention Plan Acknowledgement Form

Product ID: 509 | Revision ID: 2361 | Date Published: 21 May 2021 | Date Effective: 21 May 2021
URL: https://www-group.slac.stanford.edu/esh/eshmanual/references/subcontractorFormIIPP.pdf

This form is used for documenting subcontractor acknowledgement of injury and illness prevention program requirements and capturing occupational medicine information. The form is required for both *green* and *non-green* work. Procurement maintains the completed form for the awarded subcontractor. (See Subcontractor Safety: Green Work Procedure [SLAC-I-730-0A21C-025] and Subcontractor Safety: Non-green Work Procedure [SLAC-I-730-0A21C-024].)

1. Prime subcontractors must flow these requirements down to sub-tier subcontractors they hire.
2. All subcontractors, prime and sub-tier, must complete a separate form.
3. The form must be completed by an authorized representative of the subcontractor, preferably the supervisor / foreman for the job.
4. Submission of this completed form with the proposal is a prerequisite for issuance of the notice to proceed.

Project Name		Purchase Requisition Number
Company Name		
Superintendent / Foreman		
Name	Phone	E-mail
Point of Contact		
Name	Phone	E-mail

1 Injury and Illness Prevention Program Compliance

While their workers are physically located at SLAC, subcontractors to SLAC must comply with the requirements of the Department of Energy (DOE) Worker Safety and Health Program (10 CFR 851). These requirements are more stringent in some areas than Cal/OSHA IIPP requirements (8 CCR 1509 and 8 CCR 3203). (See Subcontractor Safety: Additional IIPP Requirements [SLAC-I-730-0A21S-062] for the differences.)

Subcontractors have the option to adopt SLAC's 851-compliant IIPP or to submit their own 851-compliant IIPP to SLAC for review and approval.

This information is provided only as a guide: it is your responsibility to ensure you have read and understood the regulatory requirements.

I certify that that I have read the requirements of the SLAC IIPP and attest that

☐ Our work on this subcontract will comply with the requirements of the SLAC IIPP, or

☐ We have developed an IIPP that is as protective as the SLAC IIPP (attach)

Prepared by (foreman / supervisor for the job if possible)		
Name	Signature	Date

2 Occupational Medicine

Will you have any employees that will work on-site at SLAC for 30, 8-hour days in a 12-month period, or are enrolled for any length of time in a medical or exposure monitoring program required by federal, state, or local regulations (for example, hearing conservation, respiratory protection, lead exposure, or beryllium exposure)? ☐ No ☐ Yes

If yes, you must

1. Have comprehensive occupational medicine services for your workers and comply with the occupational medicine requirements of the SLAC IIPP.
2. Provide your occupational medicine provider (clinic / physician) contact information:

Name	Phone	E-mail

Section K
Representations and Certifications

The Offeror shall complete, sign and return the attached Representations and Certification as follows:

- For US Vendors - Representations and Certification Supplement dated February 01 2018
- For Vendors Outside of the US – International Representations and Certification Rev 0 dated May 05.

SLAC NATIONAL ACCELERATOR LABORATORY

Proudly Operated by Stanford University Since 1962

REPRESENTATIONS AND CERTIFICATIONS SUPPLEMENT

Stanford University has executed and is engaged in the performance of Prime Contract DE-AC02-76SF00515 with the United States Department of Energy (DOE), for the management and operation of SLAC National Accelerator Laboratory in Menlo Park, CA. The following representations and certifications must be completed, and this form must be signed and returned with the Offeror's proposal.

Name, Address, and DUNS Number

Business Name _____

Business Address _____

"Doing Business As" (DBA) _____

DUNS Number _____ Tax ID Number _____

System for Award Management (SAM) Electronic Representations and Certifications Applications

The Offeror certifies that the annual Representations and Certifications available electronically via the System for Award Management (SAM) website https://www.sam.gov//portal/public/SAM/ have been completed and by submission of this offer, the Offeror further certifies that the information contained therein is current, accurate, complete, and fully responsive to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer. Those Representations and Certifications are incorporated in this offer by reference (see FAR 4.1201).

Employment Eligibility Verification (*d. 421- Oct 2011*) (*Applicable to proposals exceeding $3,000)*

Offeror represents that –

☐ E-Verify is not applicable based on paragraph (e) of FAR 52.222-54 Employment Eligibility Verification.

☐ it is ☐ is not currently enrolled in E-Verify

☐ if not currently enrolled, it will enroll in E-Verify with 30 calendar days of subcontract award.

☐ It will include FAR 52.222-54 in applicable lower-tier subcontracts.

EMPLOYEE-VENDOR RELATIONSHIP CERTIFICATION

An affirmative response in the following certification will require the University to evaluate your offer to determine whether a conflict of interest exists. A determination that a conflict of interest exist may necessitate rejection of your offer. The fact that an employee or former employee of Stanford University, or near relative of an employee owns, controls, or has a significant financial interest in your organization will not, in and of itself, necessarily be cause for rejection of your offer.

Definitions:

Employee: Any individual who is presently employed by any entity of Stanford University, including the Stanford Linear Accelerator Center.

Former Employee: An individual who has retired or separated from Stanford University, was dismissed, or was otherwise formerly employed by the University.

Near Relative: The employee's spouse, child, parent, brother, sister, son-in-law, daughter-in-law, father-in-law, mother-in-law, brother-in-law, or sister-in-law of a Stanford University employee, household member, and step-relatives in the same relationship. Near relative also includes the domestic partner of a University employee and a relative of the domestic partner in one of the foregoing relationships.

Control: Having some right to direct or transfer property (even though there exists no actual title to the property, such as trusteeship, power of appointment, or contract) that could be the basis for influence upon the selection or decisions of an organization's management personnel.

Significant Final Interest: Owning or controlling more than 10 percent of the organization.

Certification:

To the best of my knowledge and belief, an employee or former employee of Stanford University nor a near relative of an employee ☐ does ☐ does not own, control, or have significant financial interest in the Offeror's organization. If an employee or former employee of Stanford University or near relative thereof does own, control, or have significant financial interest in the Offeror's Organization, identify the employees and the Stanford University entity where that person is employed:

Employee Name_____

Stanford University Entity_____

TOXIC CHEMICAL RELEASE REPORTING.

(Applicable if offer exceeds $100,000.)

(a) Executive Order 13148, of April 21, 2000, Greening the Government through Leadership in Environmental Management, requires submission of this certification as a prerequisite for subcontract award.

(b) By signing this offer, the Offeror certifies that –

(1) As the owner or operator of facilities that will be used in the performance of this subcontract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the Offeror will file and continue to file for such facilities for the life of the subcontract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this subcontract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: [*Check each block that is applicable.*]

☐ (i) The facility does not manufacture, process, or otherwise use any toxic chemicals listed in 40 CFR 372.65;

☐ (ii) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C.

☐ (iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

☐ (iv) The facility does not fall within the following Standard Industrial Classification (SIC) codes or their corresponding North American Industry Classification System sectors:

(A) Major group code 10 (except 1011, 1081, and 1094).

(B) Major group code 12 (except 1241).

(C) Major group codes 20 through 39.

(D) Industry code 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce).

(E) Industry code 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C (42 U.S.C. 6921, et seq.), or 5169, or 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis); or

☐ (v) The facility is not located in the United States or its outlying areas.

ANTI-KICKBACK.

(Applicable if offer exceeds $100,000.) By submission of this offer, the Offeror certifies that it has not provided, attempted to provide, offered to provide, solicited, accepted, or attempted to accept any kickback; and has not included, directly or indirectly, the amount of any kickback in the offer. "Kickback" means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind that is provided, directly or indirectly, to any Government prime contractor (e.g., the University), prime contractor employee, subcontractor at any tier, or employee of a

subcontractor at any tier, for the purpose of improperly obtaining or rewarding favorable treatment in connection with a Government prime contract or in connection with a subcontract at any tier relating to a Government prime contract.

EXPORT CONTROL.
(a) The Offeror represents that items being furnished under any resulting agreement are, are not Trigger List Items as defined below.
Trigger List Items - http://www.nuclearsuppliersgroup.org/en/guidelines
Trigger List items are a listing of equipment, components, or materials especially designed for nuclear applications and are export controlled. These items are on the safeguards list of the International Atomic Energy Agency identified above. The regulatory authority is the US Nuclear Regulatory Commission (10 CFR 110). If the items are Trigger List items, provide the following information:
• Manufacturer's Name _____
• Description _____
• Commodity Category _____
February 23, 2016 Page 4 of 6 BSD-CS-2122

(b) The Offeror represents that items being furnished under any resulting agreement are, are not Military/Space Items as defined below.
Military/Space Items - http://pmddtc.state.gov/regulations_laws/itar.html
Military and Space items/equipment are specially designed, fabricated and configured for military and space applications as listed on the United States Munitions List (22 CFR 120-130). The regulatory authority is the US Department of State. If the items are Military/Space items/equipment, provide the following information:
• Manufacturer's Name _____
• Description _____
• Commodity Category _____

(c) The Offeror represents that items being furnished under any resulting agreement are, are not Dual Use Items 500 or 600 series as defined below.

Dual Use Items 500 or 600 series - http://www.bis.doc.gov/index.php/regulations/export-administration-regulations-ear
Dual Use Military and Space Items that were previously on the Munitions List under the Department of State and have been moved to the Commerce Control List 15 CFR 730 – 774. If the items are Dual Use Military and Space, provide the following information:
• Manufacturer's Name _____
• Description _____
• Export Control Classification Number _____

(d) To the extent the items being furnished under any resulting agreement are controlled under other portions of the Commerce Control List of the Export Administration Regulations, 15 CFR 730 et seq., provide the following information:
• Manufacturer's Name _____
• Description _____
• Export Control Classification Number _____

Signature

Note: A person authorized to make legally binding commitments on behalf of the offeror must sign below. Signature constitutes a representation that reasonable and prudent inquiry has been made to ascertain the true accurate basis of all statements. Statements which a person knows or has reason to know are false, fictitious, or fraudulent may result in criminal or civil penalties, as prescribed in 18 USC 1001 and 31 USC 3802 (a)(2). These representatives and Certifications shall remain in effect for a period of one (1) year from the date signed and shall satisfy any subsequent proposal's requirements during that one year period. The Offeror shall notify SLAC of any changes that may occur in any if the representation or certifications during that period.

Authorized Signature _____

Signer's Name (Printed) _____

Title _____

Date _____

NATIONAL ACCELERATOR LABORATORY

Operated for the U.S. Department of Energy by Stanford University

Acting Under Contract DE-AC02-76-SF00515

REPRESENTATIONS AND CERTIFICATIONS

This document is to be used if offeror's performance is outside the United States and Offeror has or will not recruit employees in the United States to work on this subcontract.

The following Representation & Certification solicitation provisions must be completed and this form must be signed and returned with the offeror's proposal.

The Offeror represents and certifies as part of its offer that: (*Check or complete all applicable items.)*

1. TYPE OF ORGANIZATION.

It operates as
☐ individual,
☐ sole proprietorship,
☐ partnership,
☐ educational institute or nonprofit organization,
☐ limited liability company,
☐ joint venture,
☐ professional corporation, or
☐ other corporation incorporated in the Country of _____,
☐ government of _____

2. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS.

(a)(1) The Offeror certifies, to the best of its knowledge and belief, that:

(i) The Offeror and/or any of its Principals:

(A) ☐ Are, ☐ are not at present debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

(B) ☐ Have, ☐ have not within a three year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and

(C) ☐ Are, ☐ are not at present indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision.

(ii) The Offeror ☐ has, ☐ has not within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

(b) The Offeror shall provide immediate written notice to the University if, at any time prior to subcontract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

3. PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS.

(Applicable if offer exceeds $100,000.)

(a) The definitions and prohibitions contained in the Limitation on Payments to Influence Certain Federal Transactions clause, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this certification.

(b)The Offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989:

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of this subcontract;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the University; and

(3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of $100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this subcontract imposed by Section 1352, Title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

4. ANTI-KICKBACK. *(Applicable if offer exceeds $100,000.)*

By submission of this offer, the Offeror certifies that it has not provided, attempted to provide, offered to provide, solicited, accepted, or attempted to accept any kickback; and has not included, directly or indirectly, the amount of any kickback in the offer. "Kickback" means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind that is provided, directly or indirectly, to any Government prime contractor (e.g., the University), prime contractor employee, subcontractor at any tier, or employee of a subcontractor at any tier, for the purpose of improperly obtaining or rewarding favorable treatment in connection with a Government prime contract or in connection with a subcontract at any tier relating to a Government prime contract

5. BUY AMERICAN CERTIFICATE. (*Not applicable to Construction Services)*

The offeror certifies that each end product, except those listed in paragraph (b) of this provision, is a domestic end product and that for other than COTS items, the offeror has considered components of unknown origin to have been mined, produced, or manufactured outside the United States. The offeror shall list as foreign end products those end products manufactured in the United States that do not qualify as domestic end products, i.e., an end product that is not a COTS item and does not meet the component test in paragraph (2) of the definition of "domestic end product." The terms "commercially available off-the-shelf (COTS) item," "component," "domestic end product," "end product," "foreign end product," and "United States" are defined in the clause FAR 52.225-1 Buy American Act—Supplies.

Foreign End Products	Country of Origin
_____	_____
_____	_____
_____	_____

(The University will take into consideration applicable provisions of FAR Part 25 in evaluating offers for foreign end products)

6. EMPLOYEE-VENDOR RELATIONSHIP CERTIFICATION

An affirmative response in the following certification will require the University to evaluate your offer to determine whether a conflict of interest exists. A determination that a conflict of interest exist may necessitate rejection of your offer. The fact that an employee or former employee of Stanford University, or near relative of an employee owns, controls, or has a significant financial interest in your organization will not, in and of itself, necessarily be cause for rejection of your offer.

Definitions:

Employee: Any individual who is presently employed by any entity of Stanford University, including the Stanford Linear Accelerator Center.

Former Employee: An individual who has retired or separated from Stanford University, was dismissed, or was otherwise formerly employed by the University.

Near Relative: The employee's spouse, child, parent, brother, sister, son-in-law, daughter-in-law, father-in-law, mother-in-law, brother-in-law, or sister-in-law of a Stanford University employee, and step-relatives in the same relationship. Near relative also includes the domestic partner of a University employee and a relative of the domestic partner in one of the foregoing relationships.

Control: Having some right to direct or transfer property (even though there exists no actual title to the property, such as trusteeship, power of appointment, or contract) that could be the basis for influence upon the selection or decisions of an organization's management personnel.

Significant Final Interest: Owning or controlling more than 10 percent of the organization.

To the best of my knowledge and belief, an employee or former employee of Stanford University or a near relative of an employee **[ ]** does **[ ]** does not own, control, or have significant financial interest in the Offeror's organization.

If an employee or former employee of Stanford University or near relative thereof does own, control, or have significant financial interest in the Offeror's Organization, identify the employees and the Stanford University entity where that person is employed

Certification

Signature	Company Name
Name	Address
Title	City, State/Provence, Country
Date	Telephone Number and E-mail address

Section L – Instructions to Offerors

Instructions to Offerors (ITO) for Firm Fixed Price Subcontract

1. GENERAL INFORMATION

Section L – Instructions to Offerors for Firm Fixed Price Subcontract provides general guidance for preparing proposals as well as specific instructions on the format and content of the proposal. The Offeror's proposal must include all data and information requested by the ITO and must be submitted in accordance with these instructions. The proposal shall be compliant with the requirements as stated in the Statement of Work and Engineering Specification Document. Non-conformance with the instructions provided in this ITO may result in an unfavorable proposal evaluation.

Proposals must be valid for ninety (90) days from the proposal due date. The Offeror shall make a clear statement in its proposal cover letter utilizing the following language, "The undersigned agrees that this offer is valid for ninety (90) days and shall furnish any or all items upon which prices are offered at the price set opposite each item and that will remain valid for one year from the initial award, delivered at the designated point(s), within the time specified in the schedule."

Proposals are due no later than Friday, January 28, 2022 at 5:00pm PST and shall be addressed and e-mailed to the Senior Subcontract Administrator, Lorenza Ladao at lladao@slac.stanford.edu.

Proposals shall be submitted on the forms furnished or copies thereof, and must be manually or electronically signed. If erasures or other changes appear on the forms; the person signing the proposal must initial each erasure or change.

Point of Contact: The Senior Subcontract Administrator, Purchasing Specialist, Lorenza Ladao, is the sole point of contact for this acquisition. Address any questions or concerns you may have to the Senior Subcontract Administrator at e-mail: lladao@slac.stanford.edu. All exchanges of source selection information between the University and Offerors will be controlled by the Purchasing Specialist.

Cost/Price Reasonableness and Realism: Unrealistically low or high proposed costs or prices, initially or subsequently, may be grounds for eliminating a proposal from consideration either on the basis that the Offeror does not understand the requirements, or has made an unrealistic offer. Offers should be sufficiently detailed to demonstrate their reasonableness. The burden of proof for credibility of proposed costs/prices rests with the Offeror. The Offeror's Cost/Price proposal consists of the firm fixed price to deliver the products required as set forth in the solicitation, and must be prepared in a manner that is current, accurate, and responsive to the RFP.

The University intends to award without discussions with respective Offerors. The University, however, reserves the right to conduct discussions if deemed in its best interest.

(1) Section B - Basic Requirement. Offerors are to provide pricing for all of the Line Items requested on Section B and in accordance with the following Price Instructions below:

(2) SLAC National Accelerator Laboratory intends to purchase three (3) of Q-NEXT ICP tools (1 each ICPCVD deposition tool, 1 each ICP metal etcher, and 1 each ICP dielectric etcher) adhering to the requirements set out in **Technical Specifications Section C (Specifications SOW) dated August 25, 2021.**

(3) Section E – Inspection & Acceptance
(4) Section F - Deliveries or Performance
(5) Section K - Representations and Certifications;
(6) Attachment L-1 - "Offeror's Technical & Business Proposal Qualification Matrix Checklist."
(7) Attachment L-2 – "Offeror's Request for Clarifications." Complete and e-mail this form to the Procurement Specialist prior to the closing date of the RFP, for any questions/ clarifications regarding this proposal. ***The last day to submit Questions/clarifications is NLT Monday, January 24, 2022.***
(8) Attachment L-3 – Buy American Act Certification
(9) Attachment L-4 – "Small Business Subcontract Model" is included in this RFP for information purposes and can be used as a guide in preparing the Subcontract plan by the successful offeror.

Also note that the following requirements apply to this procurement and any resultant Purchase Order:

- E-Verify as required by FAR 52.222-54, "Employment Eligibility Verification (July 2012) applies to this procurement.
- Insurance as required by the attached Document under Section G – Article 12 of the "General Terms and Conditions for On-site Green Services Subcontract Rider."
- Small Business Subcontracting Plan as required by the Prime Contract, FAR 52.219-9, when the award is to a Large business subcontractor. It must have an acceptable small business subcontracting plan for an award, including options, expected to exceed $700,000 ($1.5 million for construct

Marking of Proprietary/Confidential Information. Offerors shall properly mark and identify with a restrictive legend or information markings on pages of the proposal that contain proprietary/ confidential information.

For Offeror to be eligible for a subcontract award with the University and the U.S. Department of Energy (DOE), Offeror shall be registered with the System for Award Management (SAM), the Official U.S. Government system that consolidated the capabilities of CCR/FedReg, ORCA, and EPLS. There is NO fee to register for this site. Entities may register at no cost directly at the SAM website:

https://www.sam.gov/portal/SAM/?portal:componentId=7cbf8635-61f6-41ff-bfb6-2f54d735285a&interactionstate=JBPNS_rO0ABXc0ABBfanNmQnJpZGdlVmlld0lkAAAAAQATL2pzZi9mdW5jdGlvbmFsLmpzcAAHX19FT0ZfXw**&portal:type=action#1

SLAC will not be liable for any expense incurred in preparing any supplier's response nor for any expense for materials or services not funded on this subcontract.

2. PREPARATION OF PROPOSALS

Volume I must contain the following information, but not contain any pricing information. All pricing information shall be submitted in Volume ll – Business Proposal. Proposals will be evaluated based on key evaluation factors thereunder.

Volume I – Technical Proposal (35 page maximum)

Cover Sheet

The cover sheet should include:

- Project Title: Q-NEXT ICP tools RFP 322698 (LL)
- Volume I - Technical Proposal,
- Date of submission,
- Subcontractor Name, and
- Contact information.

Factor 1. Technical Factors

Ability to meet or exceed technical requirements as laid out in **Technical Specifications Section C (Specifications SOW) dated August 25th, 2021,** summarized below:

Tool name	DEP6	ICP1	ICP3
	ICPCVD	ICP etcher	ICP etcher
Purpose	SiO2/SiNx deposition	Metal etcher	SiO2/SiNx etcher
Process gases	SiH4, Ar, O2, SF6, N2, N2O, NH3, CF4	Ar, O2, CF4, SF6, CHF3, CH4, Cl2, BCl3	Ar, O2, CF4, SF6, CHF3, C4F8

1. All tools shall be constructed with materials that are compatible for use in an ISO 5 (Class 100) cleanroom.
2. All tools shall be constructed such that any surface which comes in contact with a process chemical shall be constructed of material which is resistant to that chemical.

3. All systems shall utilize single point connections for any necessary house facilities (such as chilled water, compressed air, vent gas, each process gas).
4. All systems require an internal electrical distribution restricted to a single external power connection for 208V, 3-phase, and 60 Hz.
5. All systems shall include appropriate interlocks to ensure that the tool is safely operated. The system shall meet all SEMI S2 safety standards or OSHA standards.
6. The supporting frame of each system should have heavy-duty casters, leveling pads and mounting connections for seismic anchoring.
7. During transport to final location, the system components shall be able to pass through the main doors that are 8 feet tall and 6 feet wide. Further assembly of components may take place inside the cleanroom.
8. Each tool shall contain but not limited to an isolated load lock, process chamber, vacuum systems, valves, gas pod for process gases, pressure control system, power supplies with matching network, endpoint detection system, water-cooled chiller or heat exchanger, electronic control rack, centralized computer control and all ancillary equipment required for the system to process wafers with up to 150 mm SEMI spec wafer lateral dimensions. The system requires both manual and automatic recipe computer control of etch and/or deposition steps.
9. ICPCVD (DEP6) shall include a process gas pod that allow for the independent delivery of at least 9 process gasses, including but not limited to: 100% SiH4, Ar, O2, SF6, N2, N2O, NH3, CF4. Each independent process gas delivery line shall:
    a. Be equipped with 7 standard gas-lines and MFC for non-hazardous gases
    b. Be equipped with 2 by-pass gas-lines and MFC for hazardous gases
    c. Be equipped with digital Mass Flow Controllers (MFCs) that control gas flow with a precision of ± 5 % and an accuracy of ± 5 %.
    d. Be able to handle 100% Silane gas at max of 100 sccm
10. ICPCVD (DEP6) shall be able to set process chamber operating pressure range of 1 to 30 mTorr during deposition processes.
11. ICPCVD (DEP6) shall be capable of depositing stoichiometric SiO2 and SiNx, and silicon-rich SiO2 and silicon-rich SiNx at room temperature by varying gas ratio, pressure, and power. The tool shall:
    a. Be able to perform 300W RF clean with Ar on substrate surface
    b. Be able to deposit 350 nm SiO2 at 20C to the following specifications:
        i. Uniformity of +/- 2% or less with 7 mm edge exclusion or less
        ii. Index of refraction n between 1.4 to 1.46
        iii. Film stress between 0 - 200 MPa compressive
    c. Be able to deposit 350 nm Si-rich SiO2 at 20C to the following specifications:
        i. Uniformity of +/- 2% or less with 7 mm edge exclusion or less
        ii. Index of refraction n between 1.47 to 2
        iii. Film stress between 0 - 200 MPa compressive
    d. Be able to deposit 350 nm SiNx at 20C to the following specifications:
        i. Uniformity of +/- 3% or less with 7 mm edge exclusion or less
        ii. Index of refraction n = 2
        iii. Film stress between 0 - 200 MPa compressive

e. Be able to deposit 350 nm Si-rich SiNx at 20C to the following specifications:
    i. Uniformity of +/- 3% or less with 7 mm edge exclusion or less
    ii. Index of refraction n between 2.1 and 3
    iii. Film stress between 0 - 200 MPa compressive
f. Be able to perform chamber cleaning to the following specifications:
    i. Standard clean recipe for every 2-10 microns of film being deposited
    ii. Interleave mode of cleaning for cleaning after each deposition or at a regular interval

12. ICP metal etcher (ICP1) shall include a process gas pod that shall allow for the independent delivery of at least 8 process gasses, including but not limited to: Ar, O2, CF4, SF6, CHF3, CH4, Cl2, BCl3. Each independent process gas delivery line shall:
a. Be equipped with 5 standard gas-lines and MFC for non-hazardous gases
b. Be equipped with 3 by-pass gas-lines and MFC for hazardous gases
c. Be equipped with digital Mass Flow Controllers (MFCs) that control gas flow with a precision of ± 5 % and an accuracy of ± 5 %.
d. Be equipped with hazardous gas lines heating kit used for low vapor pressure gases.

13. ICP metal etcher (ICP1) shall be able to set process chamber operating pressure range of 1 to 30 mTorr during etching processes.

14. ICP metal etcher (ICP1) shall be capable of etching niobium and aluminum films at room temperature by varying gas ratio, pressure, and power. The tool shall:
a. Be able to perform an etch of 2 um wide by 60 um or greater length on 200 nm thick niobium film on top of Si or SiO2 to the following specifications:
    i. Cross wafer uniformity better than +/- 5 %
    ii. Etch profile between 85 - 90 degrees
    iii. An etch rate of greater than 125 nm/min
b. Be able to perform an etch of 2 um wide by 60 um or greater length on 300 nm thick niobium film on top of Si or SiO2 to the following specifications:
    i. Cross wafer uniformity better than +/- 5 %
    ii. Etch profile between 45 - 60 degrees
    iii. An etch rate of greater than 125 nm/min
c. Be able to perform an etch of 2 um wide by 10 um or greater length on 300 nm thick Aluminum or Aluminum oxide or combinations of Al/AlOx/Al films on top of Si or SiO2 to the following specifications:
    i. Cross wafer uniformity better than +/- 5 %
    ii. Etch profile between 85 - 90 degrees
    iii. An etch rate of greater than 125 nm/min
d. Be able to perform O2 clean on substrate surface
e. Be able to perform the etch chamber cleaning recipes:
    i. between F-based etch recipes and Cl-based etch recipes
    ii. between etches to ensure the cleanliness of the etch chamber

15. ICP metal etcher (ICP1) prefers to include capability of the atomic layer etch (ALE)

16. ICP dielectric etcher (ICP3) shall Include a process gas pod that shall allow for the independent delivery of at least 8 process gasses, including but not limited to: Ar, O2, CF4, SF6, CHF3, C4F8. Each independent process gas delivery line shall:
   a. Be equipped with 6 standard gas-lines and MFC for non-hazardous gases
   b. Be equipped with 1 by-pass gas-lines and MFC for hazardous gases
   c. Be equipped with digital Mass Flow Controllers (MFCs) that control gas flow with a precision of ± 5 % and an accuracy of ± 5 %.
   d. Be equipped with non-toxic gas lines heating kit used for low vapor pressure gases such as C4F8.

17. ICP dielectric etcher (ICP3) shall be able to set process chamber operating pressure range of 1 to 30 mTorr during etching processes

18. ICP dielectric etcher (ICP3) shall be capable of etching SiO2 and SiNx films at room temperature by varying gas ratio, pressure, and power. The tool shall:
   a. Be able to perform an etch of 2 um wide by 2 um on 350 nm thick SiO2 film on top of niobium or Si to the following specifications:
      i. Cross wafer uniformity better than +/- 3 %
      ii. Etch profile between 85 - 90 degrees
      iii. An etch rate of greater than 125 nm/min
      iv. Greater than a 4:1 selectivity to a photomask
   b. Be able to perform an etch of 2 um wide by 20 um on 350 nm thick SiO2 film on top of niobium or Si to the following specifications:
      i. Cross wafer uniformity better than +/- 3 %
      ii. Etch profile between 45 - 72 degrees
      iii. An etch rate of greater than 125 nm/min
   c. Be able to perform an etch of 2 um wide by 20 um on 350 nm thick SiNx on top of niobium or Si to the following specifications:
      i. Cross wafer uniformity better than +/- 3 %
      ii. Etch profile between 85 - 90 degrees
      iii. An etch rate of greater than 125 nm/min
   d. Be able to perform O2 clean on substrate surface

Factor 2. <u>Past Performance</u>

a. Documentation must be presented showing that the vendor has previously manufactured ICP tools that have met similar technical requirements. For each tool, the vendor shall present evidence of supplying similar tools at least 5 tools within 5 years.

b. The vendor must provide at least Two (2) references of users of similar systems in research laboratories.

Factor 3. <u>Supporting Capability</u>

The Offeror shall provide documentation for tool support in parts, applications and service for at least 5 years.

Volume II – Business Proposal

Cover Sheet

The cover sheet should include:

- Project Title: Q-NEXT ICP tools RFP 322698(LL)
- Volume II – Business Proposal
- Date of submission
- Subcontractor Name, and
- Contact information.

Business Factors

Clearly stamp all company financial documents as "*Business Sensitive*", if applicable, on any included documents.

Factor 4. Price

- Submit RFP Section A (completed form), acknowledgement of issued addendums;
- Submit RFP Section B with firm-fixed prices for each line item;

Factor 5. Financial Standing

Provide a copy of the other credit rating report and/or Dun and Bradstreet. Note that SLAC has an access to D&B reports.

Factor 6. Offeror's Contractual Documentation

- Offeror shall complete and submit all required documents as stated in Section L.
- Offeror shall complete and submit a signed Section K, Representation and Certifications Supplement dated February 2018.

3. METHOD OF TRANSMISSION/ORGANIZATION/NUMBER OF COPIES/PAGE LIMITS:

Proposals must be submitted via Electronic mail to the Procurement Specialist, Lorenza S. Ladao e-mail: lladao@SLAC.stanford.edu on or before the due date of this RFP. The Offeror shall prepare the proposal as set forth in the Proposal Organization Table. The titles and contents of the volumes shall be as defined in this table, all of which shall be within the required page limits and with the number of copies as specified. The volumes identified in the table shall be separately bound in three-ring, loose-leaf binders, as necessary. The contents of each proposal volume are described in the ITO paragraph as noted in the table below.

Proposal Organization Table:

Volume	ITO Section	Volume Title	Copies	Page Limit
I	2	Technical Proposal	1	35
II	2	Business Proposal	1	None

4. LATE PROPOSALS AND MODIFICATIONS:

Proposals and Modifications thereof received at the office designated in the Request for Proposals after the due date and time will not be considered unless they are received before award is made; and either (1) they are sent by U.S. Postal Service registered/certified mail for which an official dated post office stamp (post mark) on the original Receipt for Registered/ Certified Mail has been obtained or by common carrier for which an official (signed by a common carrier representative) receipt has been obtained, and it is determined by SLAC that the late receipt was due solely to delay in the mails, or delay by the common carrier, for which the Offeror was not responsible or (2) if submitted by U.S. Postal Service mail or common carrier, it is determined that the late receipt was due solely to mishandling by SLAC after receipt at the SLAC installation, provided that timely receipt at such installation is established upon examination of an appropriate date or time stamp (if any) of such installation, or of other documentary evidence of receipt (if readily available) within the control of such installation or the post office serving it or (3) are determined to be in the best interest of SLAC.

The Offerors using U.S. Postal Service registered or certified mail or a common carrier are cautioned to obtain a Receipt for Registered/Certified Mail or a receipt from the common carrier showing a legible, dated postmark or ship date and to retain such receipt against the chance that it will be required as evidence that a late proposal was timely mailed or sent via common carrier.

The time of sending of proposals submitted by registered/certified mail or common carrier shall be deemed to be the last minute of the date shown in the postmark of the registered/certified mail receipt or registered mail wrapper or on the Receipt for Certified Mail or on the receipt from the common carrier, unless the Offeror furnishes evidence from the post office station of mailing or common carrier, which establishes an earlier time than the last minute of the date shown. In the case of Certified Mail, the only acceptable evidence is as follows: (1) where the Receipt for Certified Mail identifies the post office station of mailing, evidence furnished by the Offeror which establishes that the business day of that station ended at an earlier time, in which case the time of mailing shall be deemed to be the last minute of the business day of that station; or (2) an entry in ink of the Receipt for Certified Mail showing the time of mailing and the initials of the postal employee receiving the item and making the entry, with appropriate written verification of such entry from the post office station of mailing, in which case the time of mailing shall be the time

shown in the entry. If the postmark on the original Receipt for Certified Mail does not show a date the proposal shall not be considered.

5. WITHDRAWALS OF PROPOSALS

Proposals may be withdrawn by written original letter or email, addressed as instructed for the proposal, and received from the Offerors prior to award.

6. AMENDMENT

The right is reserved, as the interests of SLAC may require, to revise or amend the solicitation documents and drawings prior to the due date set for submission of proposals. Such revisions and amendments, if any, will be announced on an "Amendment of Solicitation/Subcontract Modification" form. Copies of such amendment as may be issued will be furnished to all prospective Offerors. If the revisions and amendments are of a nature which requires material changes in quantities or proposal prices or both, the date set for submission of proposals may be postponed by such number of days, as in the opinion of SLAC will enable the Offerors to develop their proposals. In such case, the Amendment of Solicitation/Subcontract Modification form will include an announcement of the new due date for receipt of proposals.

7. EXPLANATION TO OFFERORS/ OFFEROR QUESTIONS & CLARIFICATIONS

Any explanation desired by an Offeror regarding the meaning or interpretation of the Request for Proposal, drawings, specifications, etc., must be requested in writing to the attention of the Procurement Specialist, Lorenza S. Ladao using the SLAC Question and Answer Log attached hereto, labeled as "Section L - Exhibit 1." Sufficient time must be allowed for a reply to reach the Offeror before the due date for submission of proposals. Oral clarification of requirements or instructions provided by SLAC before the award of the Subcontract will not be binding. Questions containing Offeror's non-proprietary information and corresponding clarifications will be shared with all Offerors. Transmittal shall be sent either via e-mail in PDF format.

8. TAXES

Attention of Offerors and their prospective Sub-subcontractors is directed to the Article titled "Federal, State and Local Taxes" of the General Terms and Conditions and to the California State Board of Equalization Regulations relating to sales of machinery and equipment for delivery under construction contracts with the United States government. However, responsibility for determination of the applicability of California State Board of Equalization Regulations shall rest solely with the Offeror, and no representation or guarantee either expressed or implied is made by the Government or SLAC hereunder as to the application thereof. SLAC will not reimburse Offeror for taxes as a separate line item.

9. SPECIFIED PRODUCT AVAILABILITY

Where the Technical Specifications, Statement of Work, or Drawings list a specific product, the Offerors may assume that the product is commercially available; however, availability within the required performance period may require payment, by the successful Subcontractor at no additional cost to SLAC, of premiums for expediting production or shipment. The Offerors are cautioned to confirm not only product prices but costs associated with timely acquisition of the product as required to meet performance period requirements. The Offerors are required to notify the University Subcontract Administrator prior to the proposal due date of any obvious product unavailability.

10. SPECIFIED PRODUCT OR METHOD COMPATIBILITY

Where the Technical Specifications, Statement of Work, or Drawings list a specific product or method, the Offerors may assume that the product or method is compatible with other requirements of the Subcontract. The Offerors are required to notify the University Procurement Specialist prior to the date set for receipt of proposals of any obvious incompatibility between a specified product or method and other requirements of the Subcontract.

11. EXCEPTIONS TO UNIVERSITY'S STANDARD TERMS AND CONDITIONS, PROVISIONS, AND/OR CLAUSES

Offeror must identify any exceptions to SLAC terms and conditions or exceptions to any other element of the requirements that are a part of this RFP, with their proposal. SLAC will not entertain any exceptions not identified in the proposal submission. Exceptions taken may be cause for rejection of a proposal. Inclusion of any assumptions, clarifications, exclusions, or conditions may be cause for rejection of the proposal as non-responsive.

Attachment L-1
Offeror's Technical & Business Proposal Qualification Matrix Checklist

SLAC RFP 322698 (LL) For Q-NEXT ICP tools

Vendor name:_____

Technical Submission Requirements	Technical Evaluation Criteria	Meets	Exceeds	Does Not Meet
1. Ability to meet or exceed technical requirements. The Offeror shall submit a data package that will demonstrate the Offeror's ability to meet or exceed technical specifications in the RFP Section L (Specifications SOW). summarized below:	**1. Ability to meet or exceed technical requirements.** The Offeror's data package will be evaluated to confirm that it demonstrates the supplier's ability to manufacture an ICP tools meeting the requirements and specifications set out in Section L.			
(8) **ICPCVD(DEP6), ICP metal etcher (ICP1) and ICP dielectric etcher (ICP3) shall support 150 mm SEMI spec wafers.** Submission Requirements: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability or performance, on a similar system.	(8) **ICPCVD(DEP6), ICP metal etcher (ICP1) and ICP dielectric etcher (ICP3) shall support 150 mm SEMI spec wafers.** The Offeror shall be evaluated as follows: • **Exceeds**: the tool supports 150 mm and other sizes • **Meets**: the tool supports 150 mm wafers • **Doesn't meet**: the tool does not support 150 mm wafers			
(9) **ICPCVD(DEP6) gas pod:** allow for the independent delivery of at least 9 process gasses (including but not limited to 100% SiH4, Ar, O2, SF6, N2, N2O, NH3, CF4) Submission Requirements: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability or performance, on a similar system.	(9) **ICPCVD(DEP6) gas pod:** allow for the independent delivery of at least 9 process gasses (including but not limited to 100% SiH4, Ar, O2, SF6, N2, N2O, NH3, CF4) The Offeror shall be evaluated as follows: • **Exceeds**: provide gas pod can handle more than 9 gas lines with 2 by-pass gas line with MFC for hazardous gases • **Meets**: provide gas pod for 9 gas lines with 2 by-pass gas line with MFC for hazardous gases			

	• **Doesn't meet**: provide less than 8 gas lines			
(11)a **(DEP6) 300 W RF clean with Ar gas on substrate surface.** Submission Requirement: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability.	(11)a **(DEP6) 300W RF clean with Ar gas on substrate surface.** The Offeror shall be evaluated as follows: • **Exceeds**: the tool provide more than 300W RF power with ± 2 % precision • **Meets**: the tool provide 0-300W RF power with ± 2 % precision • **Doesn't meet**: the tool provide less than 300 W RF power			
(11)b **(DEP6) 350 nm SiO2 deposition at 20C on 150 mm wafer:** Uniformity of ± 2 % with 7 mm edge exclusion or less Submission Requirement: The Offeror shall provide documentation demonstrating this capability.	(11)b **(DEP6) 350 nm SiO2 deposition at 20C on 150 mm wafer:** Uniformity of ± 2 % with 7 mm edge exclusion or less The Offeror shall be evaluated as follows: • ± 2 % = **Meets** • > ± 2 %= **Doesn't meet** • < ± 2 %= **Exceeds**			
(11)c. **(DEP6) Si-rich SiO2 at 20C deposition:** Index of refraction n between 1.4-1.46**.** Submission Requirement: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability.	(11)c. **(DEP6) Si-rich SiO2 at 20C deposition:** Index of refraction n between 1.4-1.46**.** The Offeror shall be evaluated as follows: • **Meets**: the demonstrating data show the index of refraction is between 1.4-1.46 • **Doesn't meet**: the index of refraction is less than 1.4 or larger than 1.5			
(11)d **(DEP6) 350 nm SiNx deposited at 20C**: Uniformity of ± 3 % with 7 mm edge	(11)d **(DEP6) 350 nm SiNx deposited at 20C**: Uniformity of ± 3 % with 7 mm edge The Offeror shall be evaluated as follows:			

Submission Requirement: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability.	• ± 3 % = **Meets** • > ± 3 %= **Doesn't meet** • < ± 3 %= **Exceeds**			
(11)d **(DEP6) 350 nm SiNx deposited at 20C**: film stress between 0-200 MPa compressive Submission Requirement: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability.	(11)d **(DEP6) 350 nm SiNx deposited at 20C**: film stress between 0-200 MPa compressive The Offeror shall be evaluated as follows: • < 0-200 MPa compressive = **Exceeds** • 0-200 MPa compressive = **Meets** • > 200 MPa compressive or in tensile= **Doesn't meet**			
(11)e **(DEP6) 350 nm Si-rich SiNx at 20C:** Index of refraction n between 2.1 and 3 Submission Requirement: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability.	(11)e **(DEP6) 350 nm Si-rich SiNx at 20C:** Index of refraction n between 2.1 and 3 The Offeror shall be evaluated as follows: • **Meets**: the demonstrating data show the index of refraction is between 2.1-3 **Doesn't meet**: the index of refraction is less than 2.1 or larger than 3			
(12) **ICP metal etcher (ICP1) gas pod:** allow for the independent delivery of at least 8 process gasses (including but not limited to Ar, O2, CF4, SF6, CHF3, CH4, Cl2, BCl3.) Submission Requirements: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability or performance, on a similar system.	(12) **ICP metal etcher (ICP1) gas pod:** allow for the independent delivery of at least 8 process gasses (including but not limited to Ar, O2, CF4, SF6, CHF3, CH4, Cl2, BCl3.) The Offeror shall be evaluated as follows: • **Exceeds**: provide gas pod can handle more than 8 gases with 3 by-pass gas line with MFC for hazardous gases • **Meets**: provide gas pod can handle 8 gases with 3 by-pass			

	gas line with MFC for hazardous gases • **Doesn't meet**: provide less than 8 gas lines			
(14) a. **(ICP1) Niobium film vertical etch** **2 um x 60 um or greater length features on Nb film on top of Si or SiO2 (150mm wafer)** Submission requirement: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability.	(14) a. **(ICP1) Niobium film vertical etch**: etch profile angle 80-90 degrees. The Offeror shall be evaluated as follows: • 85-90 degrees = **Exceeds** • 80-90 degrees = **Meets** • < 80 degrees= **Doesn't meet**			
(14) b. **(ICP1) Niobium film slanted etch** **2 um x 60 um or greater length features on Nb film on top of Si or SiO2 (150mm wafer)** Submission requirement: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability.	(14) b. **(ICP1) Niobium film slanted etch** **2 um x 60 um or greater length features on Nb film on top of Si or SiO2 (150mm wafer)** The Offeror shall be evaluated as follows: • 45-60 degrees = **Meets** • < 45 degrees or > 60 degrees = **Doesn't meet**			
(14) b. **(ICP1) Niobium film slanted etch uniformity** **2 um x 60 um or greater length features on Nb film on top of Si or SiO2 (150mm wafer)** Submission requirement: The Offeror shall provide	(14) b. **(ICP1) Niobium film slanted etch uniformity** **2 um x 60 um or greater length features on Nb film on top of Si or SiO2 (150mm wafer)** The Offeror shall be evaluated as follows: • < ± 5 %= **Exceeds**			

documentation such as brochures, catalogues or data demonstrating this capability.	• ± 5 % = **Meets** • > ± 5 %= **Doesn't meet**			
(15) **(ICP1) Atomic layer etch (ALE) kit** Submission requirement: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability.	(15) **(ICP1) Atomic layer etch (ALE) kit** The Offeror shall be evaluated on as follows: • Capability and data, provided = **Meets**			
(16) **ICP dielectric etcher (ICP3) gas pod:** allow for the independent delivery of at least 8 process gasses (including but not limited to Ar, O2, CF4, SF6, CHF3, C4F8.) Submission Requirements: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability or performance, on a similar system.	(16) **ICP dielectric etcher (ICP3) gas pod:** allow for the independent delivery of at least 8 process gasses (including but not limited to Ar, O2, CF4, SF6, CHF3, C4F8.) The Offeror shall be evaluated as follows: • **Exceeds**: provide gas pod can handle more than 8 gases with 1 by-pass gas line with MFC for hazardous gases • **Meets**: provide gas pod can handle 8 gases with 1 by-pass gas line with MFC for hazardous gases • **Doesn't meet**: provide less than 8 gas lines			
(18) b. (**ICP3) SiO2 film slanted etch uniformity 2 um x 20 um or greater length features on SiO2 film on top of Si or Nb (150mm wafer)** Submission Requirements: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this	(18) b. **(ICP3) SiO2 film slanted etch uniformity 2 um x 20 um or greater length features on SiO2 film on top of Si or Nb (150mm wafer)** The Offeror shall be evaluated as follows: • < ± 3 %= **Exceeds** • ± 3 % = **Meets**			

capability or performance, on a similar system.	• > ± 3 %= **Doesn't meet**			
(18) b. **(ICP3) SiO2 film slanted etch profile 2 um x 20 um or greater length features on SiO2 film on top of Si or Nb (150mm wafer)** Submission requirement: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability.	(18) b. **(ICP3) SiO2 film slanted etch profile 2 um x 20 um or greater length features on SiO2 film on top of Si or Nb (150mm wafer)** The Offeror shall be evaluated as follows: • 45-72 degrees = **Meets** • < 45 degrees or > 72 degrees = **Doesn't meet**			
(18) c. (**ICP3) SiNx film vertical etch uniformity 2 um x 20 um or greater length features on SiNx film on top of Si or Nb (150mm wafer)** Submission Requirements: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability or performance, on a similar system.	(18) c. (**ICP3) SiNx film vertical etch uniformity 2 um x 20 um or greater length features on SiNx film on top of Si or Nb (150mm wafer)** The Offeror shall be evaluated as follows: • < ± 3 %= **Exceeds** • ± 3 % = **Meets** • > ± 3 %= **Doesn't meet**			
ICPCVD(DEP6), ICP metal etcher (ICP1) and ICP dielectric etcher (ICP3) shall be able to set process chamber operating pressure range of 1 to 30 mTorr during deposition/etching processes	**ICPCVD(DEP6), ICP metal etcher (ICP1) and ICP dielectric etcher (ICP3) shall be able to set process chamber operating pressure range of 1 to 30 mTorr during deposition/etching processes**			

Attachment L-1
Offeror's Technical & Business Proposal Qualification Matrix Checklist

Submission Requirements: The Offeror shall provide documentation such as brochures, catalogues or data demonstrating this capability or performance, on a similar system.	The Offeror shall be evaluated as follows: • 1-50 mTorr = **Exceeds** • 1-30 mTorr = **Meets** • < 30 mTorr = **Doesn't meet**			
Past Performance Submission Requirements	**Past Performance Evaluation Criteria**	**Exceptional**	**Acceptable**	**Unacceptable**
2. Past performance and Reliability. a. Documentation must be presented showing that the vendor has previously manufactured at least 5 of each ICP tools that have met similar technical requirements. b. The vendor must provide at least two (2) references of users of similar systems in research laboratories.	**2. Past performance and Reliability.** The Offeror's past performance will be evaluated based on documented fabrication history (at least 5 per each ICP tool in past 5 years) and on information at least two (2) references of users of similar systems in research laboratories. Offerors with no relevant past or present performance history shall receive the rating "Unacceptable".			
3. Supporting capability: The Offeror shall provide documentation for tool support in parts, applications and service for at least 5 years. Submission Requirements: The Offeror shall provide a schedule which includes a breakdown of work, manufacturing, procurement of long lead components, and activities such as inspection and test meeting the schedule of no more than 6 months ARO.	**3. Supporting capability:** The Offeror will be evaluated on provide documentation for tool support in parts, applications and service for at least 5 years.			

Attachment L-1
Offeror's Technical & Business Proposal Qualification Matrix Checklist

Vendor: _____

Business Submission Requirements	Business Evaluation Criteria	Meet Requirements	Doesn't Meet Requirements	Doesn't Meet, Reason
4. Price. The Offeror shall submit the following documentation: • RFP Section A (completed form), acknowledgment of issued addendums. • RFP Section B with firm-fixed prices for each line item.	**4. Price** Offeror's price proposals will be evaluated as set forth below: • RFP Section A (Subcontract Form) will be reviewed for its completeness and acknowledgement of issued addendums. • RFP Section B (Supplies or Services and Prices) will be reviewed for its completeness, reasonableness, and realism. • Proposed price will be evaluated against SLAC's cost estimate.			
5. Financial Standing. Dun and Bradstreet and/or other credit rating report. Note that SLAC has an access to D&B reports.	**5. Financial Standing.** Dun and Bradstreet report will be evaluated to determine if the firm's risk, liens, claims, and credit rating are between low and moderate for each category.			

Attachment L-1
Offeror's Technical & Business Proposal Qualification Matrix Checklist

6. Offeror's Contractual Documentation: • Offeror shall complete and submit all required documents as stated in Section L. • Offeror shall complete and submit a signed Section K, "Representation & Certification."	**6. Offeror's Contractual Documentation** Offeror will be evaluated based on its completeness and the complete submission of all the required documents. • Offeror shall use that form for submitting the required data, as appropriate. • The Offeror will be evaluated on the completeness of Section K, "Representations and Certifications" and content. • SAM.gov will be reviewed to determine if up to date Representations and Certifications are on the website.			

Summary:

Prepared by:

_____
Name/Title/Date

ATTACHMENT L-2

OFFEROR's REQUEST FOR CLARIFICATIONS

Request for Proposal No: SLAC_322698(LL)

OFFEROR'S NAME: _____ DATE: _____

ITEM #	DATE	DOCUMENT REFERENCE	QUESTION	REFERRED TO	RESPONSE	DATE
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Note: Last day for Clarifications Submittal is 1/24/22

ATTACHMENT L-3

SUPPLY CHAIN MANAGEMENT

BUY AMERICAN ACT CERTIFICATION

The bidder/offeror hereby certifies that each end product qualifies as a U.S. domestic commercial item.
Yes ☐ No ☐

If the answer above is no, fill out the below information.

The bidder/offeror hereby certifies that each end product, except the end products listed below, is a domestic source end product (as defined in the provision entitled Buy American Act); and that NO components of unknown origin have been mined, produced, or manufactured outside the United States.

Excluded end products in accordance with FAR Part 25.104 _____
Country of Origin _____

The bidder/offeror will represent (as an estimate), herein, before the award of a purchase order or subcontract, the percent of the foreign content of the item or service being procured expressed as a percent of the purchase order/subcontract award price (accuracy within plus or minus 5 percent is acceptable). Percent of Foreign Content: _____.

THE OFFEROR'S SIGNATURE MAKE THE ABOVE REPRESENTATIONS AND CERTIFICATIONS PART OF THEIR QUOTATION

Offeror's Signature: _____ **Date**: _____

Printed Name: _____

Company Name: _____

SUPPLY CHAIN MANAGEMENT

ATTACHMENT L-4

SMALL BUSINESS SUBCONTRACTING PLAN MODEL

IDENTIFICATION DATA:

Contractor:	
Address:	
Solicitation/Contract #:	
Item/Service:	
Total Amount of Contract (Including Options):	
Period of Contract Performance:	Click here to enter a date.

Federal Acquisition Regulation (FAR), paragraph 19.708(b) prescribes the use of the clause at FAR 52.219-9 entitled "Small Business Subcontracting Plan." The following is a suggested model for use when formulating such subcontracting plan. While this model plan has been designed to be consistent with FAR 52.219-9, other formats of a subcontracting plan may be acceptable. However, failure to include the essential information as exemplified in this model may be cause for either a delay in acceptance or the rejection of a bid or offer where the clause is Applicable. Further, the use of this model is not intended to waiver other requirements that may be applicable under FAR 52.219-9.

"SUBCONTRACT," means any agreement (other than one involving an employer-employee relationship) entered into by a Government prime contractor or subcontractor calling for supplies or services required for performance of the contract, contract modification, or subcontract.

1. **Type of Plan** (Check one)

☐ Individual Contract Plan - Individual Contract Plan means a subcontracting plan that covers the entire contract period (including option periods), applies to a specific contract, and has goals that are based on the offeror's planned subcontracting in support of the specific contract, except that indirect costs incurred for common or joint purposes may be allocated on a prorated basis to the contract.

☐ Master Plan - Master Plan means a subcontracting plan that contains all of the required elements of an individual contract plan, except goals, and may be incorporated into individual contract plans, provided the master plan has been approved.

☐ Commercial Plan - Commercial Plan means a subcontracting plan (including goals) that covers the offeror's fiscal year and that applies to the entire production of commercial items sold by either the entire company or a portion thereof (e.g., division, plant, or product line). The contractor must provide a copy of the approved plan. **NOTE: A commercial plan is the preferred type of subcontracting plan for contractors furnishing commercial items**.

2. **Goals**

State separate dollar and percentage goals for small business, veteran-owned small business, service-disabled veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns, as subcontractors, for the basic and each option year, as specified in FAR 19.704.

A. Total estimated dollar value of all planned subcontracting, i.e., with all types of concerns under this contract is $0.00.

B. Total estimated dollar value and percent of planned subcontracting with small businesses (includes small business, veteran-owned small business, service-disabled/veteran-owned small business, HUBZone small business, small disadvantaged business, and women-owned small business concerns): (% of "A"): $0.00 and 0%.

C. Total estimated dollar value and percent of planned subcontracting with veteran-owned small businesses (% of "A"):
$0.00 and 0%.

D. Total estimated dollar value and percent of planned subcontracting with service-disabled veteran-owned small businesses (% of "A"):
$0.00 and 0%.

E. Total estimated dollar value and percent of planned subcontracting with HUBZone small businesses (% of "A"):
$0.00 and 0%.

F. Total estimated dollar value and percent of planned subcontracting with small disadvantaged business (% of "A"):
$0.00 and 0%.

G. Total estimated dollar value and percent of planned subcontracting with women-owned small business (% of "A"):
$0.00 and 0%.

H. Total estimated dollar value and percent of planned subcontracting with large business (% of "A"):
$0.00 and 0%.

I. Provide a description of the principal types of supplies and services to be subcontracted under this contract, and an indication of the types planned for subcontracting to each type of small business concern listed above including a description of types to be subcontracted to large business.

Subcontracted Supplies/Services (check all that apply):

☐SB ☐VOB ☐SDVOB ☐HUB ☐SDB ☐WOSB ☐LB

[Description]

J. A description of the method used to develop the subcontracting goals (i.e., explain the method and state the quantitative basis (in dollars) used to establish the percentage goals, in addition, how the areas to be subcontracted to each socioeconomic category of business were determined. Include any source lists used in the determination process.

[Description]

K. Indirect costs have been ☐ have not been ☐ included in establishing the dollar and percentage subcontracting goals stated above.
(check one)

L. If indirect costs have been included, describe the method used to determine the proportionate share of such costs to be incurred.

[Description]

3. Program Administrator

Name, title, position within the corporate structure, and duties and responsibilities of the employee who will administer the contractor's subcontracting program.

Name: _____

Title/Position: _____

Address: _____

Telephone: _____

DUTIES:

4. Equitable Opportunity

A. The contractor agrees to ensure that small business concerns will have an equitable opportunity to compete for subcontracts. The various efforts include, but are not limited to, the following activities:

i. Contacting small business (SB), veteran-owned small business (VOB), service disabled/veteran-owned small business (SDVOB), HUBZone small business (HUB), small disadvantaged business (SDB), and women-owned small business (WOSB) trade associations (to the extent known, identify specific small business (SB), veteran-owned small business (VOB), service-disabled/veteran-owned small business (SDVOB), HUBZone small business (HUB), small disadvantaged business (SDB), and women-owned small business (WOSB) trade associations).

ii. Contacting small business development organizations (to the extent known, identify specific small business development organizations).

iii. Attending small business (SB), veteran-owned small business (VOB), service-disabled/veteran-owned small business (SDVOB), HUBZone small business (HUB), small disadvantaged business (SDB), and women-owned small business (WOSB) procurement conferences and trade fairs (to the extent known, identify specific procurement conferences and trade fairs and dates).

iv. Potential sources will be requested from SBA representatives and SBA sponsored programs such the Procurement Technical Assistance Centers (PTAC).

v. Utilizing newspaper and magazine ads to encourage new sources.

B. Internal efforts to guide and encourage purchasing personnel:

[Description]

C. Additional efforts:

[Description]

5. Flow-Down clause

The contractor agrees to include the provisions under FAR 52.219-8, "Utilization of Small Business Concerns, in all subcontracts that offer further subcontracting opportunities. The contractor will also require all subcontractors, except small business concerns, that receive subcontracts in excess of $650,000 ($1,500,000 for construction) to adopt a plan that complies with the requirements of the clause at FAR 52.219-9, "Small Business Subcontracting Plan." (See FAR 19.708(b)).

Such plans will be reviewed by comparing them with the provisions of Public Law 95-507, and assuring that all minimum requirements of an acceptable subcontracting plan have been satisfied. The acceptability of percentage goals shall be determined on a case-by-case basis depending on the supplies/services involved, the availability of potential small businesses and prior experience. Once approved and implemented, plans will be monitored through the submission of periodic reports, and/or, as time and availability of funds permit, periodic visits to subcontractors facilities to review applicable records and subcontracting program progress.

6. Reporting and Cooperation

The contractor gives assurance of (1) cooperation in any studies or surveys that may be required by the contracting agency or the Small Business Administration; (2) submission of periodic reports such as utilization reports, which show compliance with the subcontracting plan; (3) submission of the Individual Subcontract Report (ISR), and Summary Subcontract Report (SSR) in accordance with the instructions on the forms; and (4) ensuring that large business subcontractors with subcontracting plans agree to submit ISR, SSR and SDB reports if applicable.

Submission of the ISR, SSR and SDB reports will occur through the Electronic Subcontract Reporting System (https://esrs.symplicity.com/) using the following schedule:

Reporting Period	Report Due	Due Date
Oct 1 - Mar 31	Individual Subcontract Report (ISR)	04/30
Apr 1 - Sep 30	Individual Subcontract Report (ISR)	10/30
Oct 1 - Sep 30	Summary Subcontract Report (SSR)	10/30
Oct 1 - Sep 30	Small Disadvantage Business Report (SDB)*	10/30

*If required by FAR 52.219-25

7. Record Keeping

The following is a recitation of the types of records the contractor will maintain to demonstrate the procedures adopted to comply with the requirements and goals in the subcontracting plan. These records will include, but not be limited to, the following:

A. Lists of guides and other electronic data systems for identifying small business concerns.

B. Organizations contacted in an attempt to locate small business sources;

C. On a contract-by-contract basis, records on all subcontract solicitations over the simplified acquisition threshold, which indicate for each solicitation (1) whether small business concerns were solicited, and if not, why not; (2) whether veteran-owned small businesses were solicited, and if not, why not; (3) whether service-disabled/veteran-owned businesses were solicited, and if not, why not; (4) whether HUBZone small businesses were solicited, and if not, why not; (5) whether small disadvantaged business concerns were solicited, and if not, why not; (6) whether women-owned small businesses were solicited, and if not, why not; and (7) reason for failure of solicited small business concerns to receive the subcontract award;

D. Records to support other outreach efforts, e.g., contacts with small businesses, trade associations, PTAC, SBA, attendance at small business procurement conferences and trade fairs;

E. Records to support internal guidance and encouragement, provided to buyers through (1) workshops, seminars, training programs, incentive awards; and (2) monitoring of activities to evaluate compliance; and

F. On a contract-by-contract basis, records to support subcontract award data including the name, address and business size of each subcontractor. **(This item is not required for company or division-wide commercial plans.)**

G. Additional records: _____

This subcontracting plan was submitted by:

Signature: _____

Printed Name: _____

Title: _____

Date Prepared: _____

Phone No.: _____

SLAC SCM Small Business Program Manager Approval:

Signature: _____

Printed Name: _____

Title: _____

Date: _____

Phone No.: _____

Section M – Evaluation Factors for Award

I. BASIS FOR AWARD

A. This is a best value tradeoff source selection conducted in accordance with SLAC Policies, Procedures, and Terms and Conditions. The University will select the best overall offer, based upon an integrated assessment of all the technical and business factors and sub-factors including price with technical evaluation factors and sub-factors being more important than business factors and sub-factors, including price. Key evaluation factors and sub-factors are listed in descending order of importance for selecting a Subcontractor.

B. The subcontract may be awarded to the responsible Offeror whose proposal conforms to the solicitation's requirements to include all stated terms, conditions, representations, certifications, and all other information required by Section A of this solicitation and is judged, based on the evaluation factors and sub-factors to represent the best value to the University.

C. The University seeks to award to the Offeror who gives the University the greatest confidence that it will best meet, or exceed, the requirements. This may result in an award to a higher rated, higher priced Offeror, where the decision is consistent with the evaluation factors, and the Source Selection Authority (SSA) reasonably determines that the technical superiority and/or overall business approach of the higher price Offeror supersedes the cost difference. The SSA will base the source selection decision on an integrated assessment of proposals against all source selection criteria in the solicitation (described below). While the University's source selection evaluation team and the SSA will strive for maximum objectivity, the source selection process, by its nature, is subjective; and therefore, professional judgment is implicit throughout the entire process. The evaluation process shall proceed as follows: Offeror is cautioned to submit sufficient information and in the format specified in Section L. Offeror may be asked to clarify certain aspects of their proposal. Communication conducted to resolve minor or clerical errors will not constitute discussions and the procurement specialist reserves the right to award a contract without the opportunity for proposal revision. The University intends to award without discussions with respective Offerors. The University, however, reserves the right to conduct discussions if deemed in its best interest.

D. Rejection of Unrealistic Offers. The University may reject any proposal that is evaluated to be unrealistic in terms of program commitments, contract terms and conditions, or unrealistically high or low in cost when compared to the University's estimates, such that the proposal is deemed to reflect an inherent lack of competence or failure to comprehend the complexity and risks of the program.

E. Correction Potential of Proposals. The University will consider, throughout the evaluation, the "correction potential" of any deficiency or uncertainty. The judgment of such "correction potential" is within the sole discretion of the University. If an aspect of an Offeror's proposal does not meet the University's requirements and is not considered correctable, the Offeror may be eliminated.

F. Evaluation Factors. Key evaluation factors and sub-factors are listed in descending order of importance for selecting a Subcontractor. The University will select the best overall offer, based upon an integrated assessment of all the technical factors and sub-factors, and business factors and sub-factors, including price. Technical evaluation factors and sub-factors are more important than business factors and sub-factors, including price.

G. This action requires a degree of technical, personnel and managerial capability, capacity, experience, and management excellence. This selection process will involve submittal of a Technical Proposal (Volume I) and a submittal of a Business Proposal (Volume II). After initial evaluation of the Technical and Business Proposals, the University may establish a competitive range, and conduct interviews with Offerors who are within the competitive range. Further instructions on the interviews will be provided to the Offerors after the competitive range is established.

H. The following evaluation factors and sub-factors will be used to evaluate each proposal. Award will be made to the Offeror(s) proposing the combination most advantageous to the University based upon the evaluation factors and sub-factors as described in instructions in Section L and the criteria of the evaluation factors in Section M.

II. EVALUATION METHOD

Although price is important it will not be used for the sole basis for award. A qualitative assessment based on the Evaluation Factors will be evaluated. The technical differences shall be noted between the proposal offers, and adequately documented to determine any price/technical tradeoff to support the final award.

The focus of the proposal evaluation and selection process will be to identify the individual proposal strengths, weaknesses and deficiencies. The evaluation will analyze each Offeror's resources that are available to perform under the contract, and how those resources will be utilized during contract performance. This includes the Offeror's analysis of their resources for this project and their proven ability through demonstrated past experience to satisfy all of the requirements.

Volume I – Technical Proposal Evaluation

All proposals shall be evaluated utilizing a technical rating based on "Exceeding, Meeting and/or Not Meeting" the technical requirements. Additionally, each rating shall include a descriptive statement or comment that will provided a written rational for the basis of the rating based on overall strengths, weaknesses, value additions and or deficiencies in the proposal responses.

Technical Evaluation Factors Criteria

1. **Ability to meet or exceed technical requirements.** The Offeror's data package will be evaluated to confirm that it demonstrates the supplier's ability to manufacture 3 three ICP tools (1 each ICPCVD deposition tool, 1 each ICP metal etcher, and 1 each ICP dielectric etcher) meeting the requirements and specifications set out in Section L.

(1)All tools shall be constructed with materials that are compatible for use in an ISO 5 (Class 100) cleanroom.

(2)All tools shall be constructed such that any surface which comes in contact with a process chemical shall be constructed of material which is resistant to that chemical.

(3)All systems shall utilize single point connections for any necessary house facilities (such as chilled water, compressed air, vent gas, each process gas).

(4)All systems require an internal electrical distribution restricted to a single external power connection for 208V, 3-phase, and 60 Hz.

(5)All systems shall include appropriate interlocks to ensure that the tool is safely operated. The system shall meet all SEMI S2 safety standards or OSHA standards.

(6)The supporting frame of each system should have heavy-duty casters, leveling pads and mounting connections for seismic anchoring.

(7)During transport to final location, the system components shall be able to pass through the main doors that are 8 feet tall and 6 feet wide. Further assembly of components may take place inside the cleanroom.

(8)Each tool shall contain but not limited to an isolated load lock, process chamber, vacuum systems, valves, gas pod for process gases, pressure control system, power supplies with matching network, endpoint detection system, water-cooled chiller or heat exchanger, electronic control rack, centralized computer control and all ancillary equipment required for the system to process wafers with up to 150 mm SEMI spec wafer lateral dimensions. The system requires both manual and automatic recipe computer control of etch and/or deposition steps.

(9)ICPCVD (DEP6) shall include a process gas pod that allow for the independent delivery of at least 9 process gasses, including but not limited to: 100% SiH4, Ar, O2, SF6, N2, N2O, NH3, CF4. Each independent process gas delivery line shall:

a. Be equipped with 7 standard gas-lines and MFC for non-hazardous gases
b. Be equipped with 2 by-pass gas-lines and MFC for hazardous gases
c. Be equipped with digital Mass Flow Controllers (MFCs) that control gas flow with a precision of ± 5 % and an accuracy of ± 5 %.
d. Be able to handle 100% Silane gas at max of 100 sccm

(10)ICPCVD (DEP6) shall be able to set process chamber operating pressure range of 1 to 30 mTorr during deposition processes.

(11)ICPCVD (DEP6) shall be capable of depositing stoichiometric SiO2 and SiNx, and silicon-rich SiO2 and silicon-rich SiNx at room temperature by varying gas ratio, pressure, and power. The tool shall:

a. Be able to perform 300 W RF clean with Ar on substrate surface
b. Be able to deposit 350 nm SiO2 at 20C to the following specifications:
    i. Uniformity of +/- 2% or less with 7 mm edge exclusion or less
    ii. Index of refraction n between 1.4 to 1.46
    iii. Film stress between 0 - 200 MPa compressive
c. Be able to deposit 350 nm Si-rich SiO2 at 20C to the following specifications:
    i. Uniformity of +/- 2% or less with 7 mm edge exclusion or less
    ii. Index of refraction n between 1.47 to 2
    iii. Film stress between 0 - 200 MPa compressive

d. Be able to deposit 350 nm SiNx at 20C to the following specifications:
    i. Uniformity of +/- 3% or less with 7 mm edge exclusion or less
    ii. Index of refraction n = 2
    iii. Film stress between 0 - 200 MPa compressive
e. Be able to deposit 350 nm Si-rich SiNx at 20C to the following specifications:
    i. Uniformity of +/- 3% or less with 7 mm edge exclusion or less
    ii. Index of refraction n between 2.1 and 3
    iii. Film stress between 0 - 200 MPa compressive
f. Be able to perform chamber cleaning to the following specifications:
    i. Standard clean recipe for every 2-10 microns of film being deposited
    ii. Interleave mode of cleaning for cleaning after each deposition or at a regular interval

(12)ICP metal etcher (ICP1) shall include a process gas pod that shall allow for the independent delivery of at least 8 process gasses, including but not limited to: Ar, O2, CF4, SF6, CHF3, CH4, Cl2, BCl3. Each independent process gas delivery line shall:
a. Be equipped with 5 standard gas-lines and MFC for non-hazardous gases
b. Be equipped with 3 by-pass gas-lines and MFC for hazardous gases
c. Be equipped with digital Mass Flow Controllers (MFCs) that control gas flow with a precision of ± 5 % and an accuracy of ± 5 %.
d. Be equipped with hazardous gas lines heating kit used for low vapor pressure gases.

(13)ICP metal etcher (ICP1) shall be able to set process chamber operating pressure range of 1 to 30 mTorr during etching processes.

(14)ICP metal etcher (ICP1) shall be capable of etching niobium and aluminum films at room temperature by varying gas ratio, pressure, and power. The tool shall:
a. Be able to perform an etch of 2 um wide by 60 um or greater length on 200 nm thick niobium film on top of Si or SiO2 to the following specifications:
    i. Cross wafer uniformity better than +/- 5 %
    ii. Etch profile between 85 - 90 degrees
    iii. An etch rate of greater than 125 nm/min
b. Be able to perform an etch of 2 um wide by 60 um or greater length on 300 nm thick niobium film on top of Si or SiO2 to the following specifications:
    i. Cross wafer uniformity better than +/- 5 %
    ii. Etch profile between 45 - 60 degrees
    iii. An etch rate of greater than 125 nm/min
c. Be able to perform an etch of 2 um wide by 10 um or greater length on 300 nm thick Aluminum or Aluminum oxide or combinations of Al/AlOx/Al films on top of Si or SiO2 to the following specifications:
    i. Cross wafer uniformity better than +/- 5 %
    ii. Etch profile between 85 - 90 degrees
    iii. An etch rate of greater than 125 nm/min
d. Be able to perform O2 clean on substrate surface
e. Be able to perform the etch chamber cleaning recipes:
    i. between F-based etch recipes and Cl-based etch recipes
    ii. between etches to ensure the cleanliness of the etch chamber

(15)ICP metal etcher (ICP1) prefers to include capability of the atomic layer etch (ALE)

(16)ICP dielectric etcher (ICP3) shall Include a process gas pod that shall allow for the independent delivery of at least 8 process gasses, including but not limited to: Ar, O2, CF4, SF6, CHF3, C4F8. Each independent process gas delivery line shall:

a. Be equipped with 6 standard gas-lines and MFC for non-hazardous gases
b. Be equipped with 1 by-pass gas-lines and MFC for hazardous gases
c. Be equipped with digital Mass Flow Controllers (MFCs) that control gas flow with a precision of ± 5 % and an accuracy of ± 5 %.
d. Be equipped with non-toxic gas lines heating kit used for low vapor pressure gases such as C4F8.

(17)ICP dielectric etcher (ICP3) shall be able to set process chamber operating pressure range of 1 to 30 mTorr during etching processes

(18)ICP dielectric etcher (ICP3) shall be capable of etching SiO2 and SiNx films at room temperature by varying gas ratio, pressure, and power. The tool shall:

a. Be able to perform an etch of 2 um wide by 2 um on 350 nm thick SiO2 film on top of niobium or Si to the following specifications:
    i. Cross wafer uniformity better than +/- 3 %
    ii. Etch profile between 85 - 90 degrees
    iii. An etch rate of greater than 125 nm/min
    iv. Greater than a 4:1 selectivity to a photomask
b. Be able to perform an etch of 2 um wide by 20 um on 350 nm thick SiO2 film on top of niobium or Si to the following specifications:
    i. Cross wafer uniformity better than +/- 3 %
    ii. Etch profile between 45 - 72 degrees
    iii. An etch rate of greater than 125 nm/min
c. Be able to perform an etch of 2 um wide by 20 um on 350 nm thick SiNx on top of niobium or Si to the following specifications:
    i. Cross wafer uniformity better than +/- 3 %
    ii. Etch profile between 85 - 90 degrees
    iii. An etch rate of greater than 125 nm/min
d. Be able to perform O2 clean on substrate surface

2. **Past performance and Reliability.** The Offeror shall be evaluated on documentation and references demonstrating past performance and reliability. The Offeror's past performance will be evaluated based on documented fabrication history (at least 5 years) and on information at least two (2) references of users of similar systems in research laboratories within 5 years. Offerors with no relevant past or present performance history shall receive the rating "Unacceptable".

   The purpose of the past performance evaluation is to allow SLAC to assess the Offeror's ability to perform the effort described in this RFP, based on the Offeror's demonstrated present and past performance. The assessment process will result in an overall performance rating of Exceptional, Acceptable, or Unacceptable. Past performance regarding predecessor companies or Sub-contractors that will perform major or critical aspects of the requirement will be weighted as heavily as past performance information for the principal Offeror.

Past Performance Ratings	
Rating	Description
Exceptional	Based on the Offeror's performance record, SLAC has a high expectation that the Offeror will successfully perform the required effort.

Acceptable	Based on the Offeror's performance record, SLAC has a reasonable expectation that the Offeror will successfully perform the required effort.
Unacceptable	Based on the Offeror's performance record, SLAC has low or no reasonable expectation that the Offeror will successfully perform the required effort.

3. **Supporting capability:** The Offeror will be evaluated on provide documentation for tool support in parts, applications and service for at least 5 years. The Offeror shall be evaluated on the supporting capability as follows:

Supporting capability Ratings	
Rating	Description
Exceptional	Based on the Offeror's documentation, SLAC has a high expectation that the Offeror will successfully providing the required effort.
Acceptable	Based on the Offeror's documentation, SLAC has a reasonable expectation that the Offeror will successfully providing the required effort.
Unacceptable	Based on the Offeror's documentation, SLAC has low or no reasonable expectation that the Offeror will successfully providing the required effort.

Combined Technical/Risk Ratings	
Exceeds Requirements	The proposal satisfies all of the University's requirements with extensive detail to indicate feasibility of the approach and shows a thorough understanding of the issues and offers numerous significant strengths, which are not offset by weaknesses, with an overall low degree of risk in meeting the University's requirements.
Meets Requirements	The proposal satisfies all of the University's requirements with adequate detail to indicate feasibility of the approach and shows an understanding of the issues and offers some significant strength or numerous minor strengths, which are not offset by weaknesses, with an overall moderate degree of risk in meeting the University's requirements.

Does Not Meet Requirements	The proposal contains minimum detail to indicate feasibility of approach, shows minimal understanding of the project, contains major error(s), omission(s), or deficiency(ies) or involves a moderate to high risk.

Volume II – Business Proposal Evaluation

4. Price Proposal:

The price proposal (Section B and cost breakdown form) evaluation will be based on the following evaluation factors for reasonableness and affordability. If price reasonableness and affordability cannot be determined using price analysis SLAC reserves the right to request sufficient cost information to perform the reasonableness and affordability determination.

Completeness	Price will be evaluated to determine whether the Offeror provided sufficient data as required by the solicitation and/or SLAC during the evaluation.
Realism	Prices will be evaluated to determine if they are unrealistically high or low in comparison to the Independent SLAC Cost Estimate and/or other offers received.
Reasonableness	Prices reasonableness will be determine using acceptable price and/or cost analyses technique.

5. Financial. The Offeror's financial documentation will be evaluated utilizing a business rating based on "Meeting and/or Not Meeting" the business requirements.

a. Dun and Bradstreet report will be evaluated to determine if the firm's risk, liens, claims, and credit rating are between low and moderate for each category.

6. Contractual Documentation. The Offeror's financial and contractual documentation will be evaluated utilizing a business rating based on "Meeting and/or Not Meeting" the business requirements.

a. RFP Section A (Subcontract Form) will be evaluated for completeness. signatures and inclusion of amendments.

b. RFP Section B (Supplier or Service Prices) will be evaluated for completeness.

c. SAM.gov will review to determine if up to date Representations and Certifications are on the website.

d. SLAC's Representations and Certifications rider will be review for completeness and signature.

e. Offeror shall complete and submit a signed Section K, “Representation & Certification” and content.

The minimum financial requirements for this procurement are as follows:

Meets Requirements	Acceptable Overall Proposal. The proposal meets the University’s requirements for submission of complete and correct documentation, shows a satisfactory level of financial health, and meets the University’s incremental funding profile.
Does Not Meet Requirements	Unacceptable Overall Proposal. The proposal does not meet the University’s requirements for submission of complete and correct documentation, shows an unsatisfactory level of financial health, and/or fails to meet the University’s incremental funding profile.

III. DEBRIEFINGS

Debriefings will be done at the request of any Offeror wishing to understand the reasons for the University’s selection. The discussion shall not include comparisons with the other proposals. An explanation of the evaluation of significant elements in the Offeror's proposal, summary of the rationale for eliminating the Offeror from the competition and assure the Offeror that its proposal was treated fairly, impartially and objectively. The Procurement Specialist will conduct debriefing(s).