Statement of Objectives 26-6F4
Rapid Assured Access (R2A)

1.0 Introduction

The mission of the Defense Microelectronics Activity (DMEA) is to deliver microelectronics solutions to meet the needs of the Department of War (DoW). DMEA ensures the rapid acquisition and insertion of technology by focusing on the Warfighter's needs by researching current and emerging microelectronics issues, leveraging advanced technologies to extend the life of weapon systems, improving reliability, maintainability, and performance, and addressing the problem of diminishing manufacturing sources. An important part of this effort is DMEA's role in ensuring the DoW has access to a reliable and secure supply chain of manufacturers of semiconductor foundry technologies.

DMEA oversees the Trusted Access Program Office (TAPO), whose purpose is to facilitate USG access to microelectronics production, aggregate demand, and oversee the production of critical microelectronics components. TAPO is entrusted with developing and maintaining a reliable source of suppliers that give DoW programs and defense contractors access to advanced processes and services.

The purpose of this Rapid Response Assessment program is to establish a rapid and reliable source for domestically produced custom-designed microelectronics for the Department of Defense (DoD). This initiative aims to mitigate critical supply chain risks by leveraging the capabilities of the U.S. commercial semiconductor industry.

2.0 Scope

The scope of Rapid Assured Access (R2A) program is to provide rapid, long-term assured semiconductor foundry access, regardless of project size and classification, through enterprise-wide contracts executed by TAPO for DoW programs and defense contractors. TAPO will establish a R2A contract vehicle that provides rapid access to microelectronics manufacturers and an on ramp of additional vendors, through that vehicle, as required to mitigate future technology gaps. The goal of R2A is to establish multiple single-award IDIQ's to meet the government's technology needs and secondly, meet the assurance need to DoW as they develop.

3.0 Program Objective

The primary objective is for the awardees to provide foundry access to Defense contractors (the Defense Industrial Base (DIB)) and program offices via this contract vehicle. The intent is for the awardees to leverage this vehicle to rapidly provide TAPO clients with a quick-turn contract vehicle that has pre-negotiated terms and conditions. Negotiating a long-term contract with TAPO once saves the Government and the awardee time and effort by avoiding repeated negotiations over terms and conditions for each procurement. Forward wafer and other pricing shall be provided for clients who require use of the vehicle and can be refreshed at pre-determined junctures (1-2 years typically). The intent of R2A is to work directly with the wafer manufacturing foundry. A wafer manufacturing foundry is a production qualified wafer fab that consists of Front End of Line (FEOL) and Back End of Line (BEOL) manufacturing steps commonly referred to as lithography, diffusion, chemical vapor deposition, etch, and other associated processes. DMEA/TAPO will not be the primary user of this vehicle but rather a service provider that administers the contract vehicle.

4.0 Operating Environment and Constraints

Any proposed solution must operate within the following constraints:

4.1. Commercial Business Model: The Government seeks to adopt commercial acquisition practices. Solutions should be structured around a Firm-Fixed-Price (FFP) model, including separate charges for Non-Recurring Engineering (NRE) and per-wafer production costs.

5.0 Requirements

The primary objective is for the awardees to provide foundry access to Defense contractors (the Defense Industrial Base (DIB)) and program offices via this contract vehicle.

5.1 Process Technologies Required

The contractor shall provide (internally manufacture via its owned and operated semiconductor foundry), production-qualified, domestic (US), semiconductor foundry technologies for the USG. (e.g., lithographic

generations: 32-nm bulk CMOS, 180-nm SiGe, 1 micron Bi-CMOS, SOI, 7-nm Fin-FET, Silicon Photonics technologies, Group III-V compound semiconductor technologies fabrication, or others). A semiconductor foundry is defined as a production qualified wafer fab that consists of Front End of Line (FEOL) and Back End of Line (BEOL) manufacturing steps commonly referred to as lithography, diffusion, chemical vapor deposition, etch, and other associated processes.) Capabilities shall be tooled to industry-standard silicon wafer sizes (150mm, 200mm, 300mm).

5.1.1. U.S. Domestic Operations: All fabrication and handling of Government, designs and hardware must occur within the continental United States.

5.1.2. For any technologies offered, the offeror shall have ISO9001:2015 certification.

5.1.3. Photomask Sourcing: The ability to produce or otherwise obtain masks that are production qualified for the proposed technologies. Domestically manufactured masks are highly preferred.

5.1.4. The commercial operating temperature (0-70 degrees Celsius) is required, Industrial or Automotive is preferred. Military/Aerospace is highly preferred.

5.2 Base Intellectual Property
For the Technologies offered, the contractor shall provide foundational base intellectual property (IP), such as standard cell libraries. For compound semiconductor technologies, standard logic cells and component library, power integration, RF and Microwave, I/O, and protection and control blocks are preferred. Reference designs such as Low Noise Amplifiers (LNAs) and Power Amplifiers are highly preferred.

5.3 Process Design Kit Support
For the Technologies referenced in section 5.1, the contractor shall provide process design kits (PDKs) that include schematic symbols, layout cells, and automated design rule checks (DRC) for Electronic Design Automation (EDA) tools such as, but not limited to, Cadence and Keysight.

5.4 IP Enablement
As TAPO is not the primary user of the IP, the contractor shall propose an efficient legal mechanism to allow TAPO's clients access to the IP (PDK, standard cells libraries) and all other activities to enable successful tape in.

5.5 Perform Foundry, Hardware, Development Services or Consulting Services
For the Technologies referenced in section 5.1, the contractor shall have the ability to perform or source ancillary services such as: design; simulate; test; failure analysis, technology development; post processing; and packaging support services. This provision to source ancillary services does not supersede the requirement in Section 5.1 that the prime contractor must perform the core semiconductor fabrication.

5.6 Perform Multi-Project Wafer Runs
For prototype development using the technologies referenced in section 5.1, the contractor shall have the ability to offer commercial multi-project wafer (MPW) runs (also known as internal shuttles). The contractor shall also provide access to MPW space for technologies as they are available for current and derivatives of future technology nodes.

5.7 Demonstrated Market Capabilities
The contractor shall have a demonstrated ability to support the aerospace and defense market segment.

5.8 Growth and Expansion Capabilities
The contractor shall have the ability to ensure the continued use and growth of this contract vehicle.

5.9 Order Fulfillment Services
The contractor shall consider order fulfillment services, to include shipping costs and logistics fees, and the up-front initial price negotiations for task orders.

5.10 Technology Discontinuance

The ability to produce required technologies in a timely and predictable manner is a requirement for this service. The contractor shall provide official notice of any intent to discontinue production with 12 months prior notice. This advance notice will allow all parties to account for end-of-life parts availability, place final purchase orders, make payment transactions, execute final production, assume deliveries, and close out any administrative functions. Additionally, this 12-month period allows all parties to consider alternative production solutions, which may include production extensions to extend potential technology discontinuance.

6.0 Program Management Requirements

The contractor shall maintain an effective management organization for the R2A program, with a program manager and appropriate staff to cover administration, engineering, and product support efforts. The contractor shall facilitate communications between its management organization and the USG. The contractor shall manage all technical performance, cost, risk, schedule, and data delivery requirements of this contract.

6.1 Program Management Reviews

The contractor shall maintain management systems, governance meetings, and reporting methods established with future agreements, including periodic program management reviews (PMRs) for DMEA management and oversight purposes. The periodicity of these PMRs may be at a mutually agreed-upon interval (monthly, quarterly, annually, etc.) and at levels of detail appropriate to those specific reviews. The contractor shall create agendas and submit accurate and timely PMR documents for PMR presentations. As guidance, topics for review are included in paragraph 6, and may include updates such as:

6.1.1. Production and schedule status, including weekly updates on wafers in production
6.1.2. Forecasting of contract utilization
6.1.3. Contract and financial status
6.1.4. Quality status
6.1.5. Configuration/ data management and engineering changes/ metrics
6.1.6. Supplier status
6.1.7. Risk management
6.1.8. Integrated logistics support/ obsolescence planning
6.1.9. Failure reporting/ analysis/ trends
6.1.10. Manufacturing processes and metrics
6.1.11. Obsolescence reviews
6.1.12. Technical data/ engineering investigations
6.1.13. Action items from previous PMRs
6.1.14. Other relevant topics, as requested by the USG

6.2 Cost and Schedule Management

Data development, management, and delivery will be specified as required in each task order. Overall status of the contract shall be provided at regular intervals, as specified in the previous paragraph.

6.3 Data Management

The contractor shall maintain a data management system for any information related to this contract and not formally submitted to the USG in a Contract Data Requirements List (CDRL) or otherwise required by future task orders. The contractor's integrated data environment, such as work in progress (WIP) and wafer acceptance criteria (WAC), shall be made available to the USG and support contractors in a means that is readily accessible and maintains the integrity of contractor intellectual property.

7.0 Distribution List

The contractor shall deliver electronic copies to DMEA via e-mail in Microsoft Office products or in Adobe PDF format to the address indicated. The subject block shall contain the contract number, PWS number, CDRL title, and date.

Code	Copies (regular/reproducible/electronic)	Address
DMEA TAPO Program Office / TAO	All deliverables: 0/0/1	Attn: Savengsveksa Vilaysack, Trusted Access Program Office 4234 54th St, McClellan CA 95652-2100 vilaysack.savengsveksa.civ@mail.mil
DMEA Contracting / MECC	All deliverables: 0/0/1	Attn: Robert Crandell, Chief, Operational Contracting Branch / Contracting Officer 4234 54th St, McClellan, CA 95652-2100 robert.d.crandell.civ@mail.mil
DMEA Contracting/ MECC	All deliverables: 0/0/1	Attn: Nicholas Roberts, Contracting Officer 4234 54th St, McClellan, CA 95652-2100 nicholas.s.roberts8.civ@mail.mil