

**Government Effectiveness Advanced Research (GEAR) Center**

**Request for Information (RFI)**

**SPE-RFI-18-0001**

**Responding Organization:** ARiA

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**About ARiA**

ARiA is a research and development firm that applies broad interdisciplinary science and engineering expertise in rapidly advancing domains including artificial intelligence (AI), big data, machine learning, and natural-language processing toward innovative basic and applied science and engineering research and development, product development, and consulting services for a diverse set of government and corporate clients and for government- and private-sector sales.

To address acquisition challenges within the Department of Defense and the Air Force, ARiA developed the Machine Interface for Contracting Assistance (MICA), a cloud-based AI digital assistant and natural-language query system that helps both offerors and acquisition personnel navigate federal regulations. We believe innovation arises when small and nontraditional offerors can effectively and efficiently understand government regulations, public-private partnerships and contract vehicles, helping clarify risk and opportunity.

The federal acquisition system, burdened by layers of extensive, redundant, and conflicting laws and regulations governing the acquisition process, is a prime example of the situation that RFI characterizes, in which “government is outdated and proven to adapt more slowly than the private sector and has fallen behind the curve, with reported decreases in trust and lower customer satisfaction.”

By leveraging the latest AI technology, MICA reimagines the current interface between innovative small and nontraditional firms and the federal government. MICA replaces an otherwise impenetrable barrier of regulations with an easy-to-use cloud-based digital assistant. Using MICA, the small and nontraditional firms able to rapidly deliver innovative solutions are able to remove the risk and uncertainty that would otherwise prevent them from doing business with the federal government.

At the same time, federal acquisition professionals can use MICA to better understand the flexibilities available to them within the existing acquisition regulations. In this way MICA creates a more efficient and effective acquisition workforce—an AI force multiplier for acquisition.

**Early Focus Area Questions 7 and 8:**

**How best can the GEAR Center work to reskill and upskill the federal workforce?**

**How can federally owned data help transform society and grow the economy?**

The GEAR Center’s early focus on using Federally owned data to transform society and grow the economy can easily build on state-of-the-art technological innovation by releasing the corpus of existing government contracts to be utilized by MICA.

***The information needed to make the acquisition process more efficient and effective are contained in federally owned information such as acquisition records and contracts. MICA can learn from this trove of data and distill the information in a usable interface that reimagines the acquisition process.***

ARiA developed the Machine Interface for Contracting Assistance (MICA) under a Phase I and Phase II Air Force SBIR, in coordination with the Air Force Office of Transformative Innovation (SAF/AQ-OTI), with demonstrated interest from the SBA as well as multiple offices within the Pentagon.

MICA promotes innovation within government by enabling small and nontraditional offerors to engage with government-contracting information by harnessing the power of natural-language query, leveling the playing field for firms that are experts in technology, not experts in government regulations. MICA’s interface—a Siri for contracting—receives questions from prospective offerors in natural language, returning relevant results to guide users who lack the information needed even to know what questions to ask.

MICA also promotes innovation by reimagining the acquisition process as one where AI teams with the federal workforce. Leveraging big data about past contract actions, MICA transforms the acquisition process. For expert users and members of the acquisition community, MICA links together regulations and provides detailed justifications and interpretations based on big-data analysis of how rules and regulations have been applied in practice.

During the Air Force SBIR development of MICA, ARiA designed MICA for questions about regulations from the Federal Acquisition Regulation (FAR), the Defense Federal Acquisition Regulation Supplement (DFARS), and the Air Force Federal Acquisition Regulation Supplement (AFFARS). It is important to note that MICA is corpus-neutral, thus able to ingest and learn from additional source material such as the United States Code (U.S.C.) and, importantly, nonregulatory resources such as existing and past government contracts and user-generated question-answer pairs from SBA offices nationwide. To learn how rules and regulations are applied, MICA extracts information from big data including GAO bid-protests, court findings, and the vast amounts of written material explaining and interpreting acquisition rules and regulations.

As regards upskilling the federal workforce, MICA offers an important technological assist to government personnel, whose lack of a system to offer a comprehensive and natural-language approach to government contracting results in bid protests and other time- and resource-intensive efforts to address errors. The acquisition workforce lacks a common reference point and is generally required to manually search for the information they need to perform their job. As a result acquisition often follows well-worn and inefficient paths and fails to adapt or respond to dynamic changes.

Federally-owned data, in this case existing and completed government contracts and other documentation of the acquisition process, entered into MICA’s corpus will enhance the federal government’s win state. Additional federally owned data in the form of government contract actions and related documentation ingested by MICA will directly result in:

* increased and innovative competition from a more diverse pool of small and nontraditional offerors;
* a reduction of costly bid protests that result from errors made by government personnel who are often unfamiliar with current contracting requirements; and
* an upskilled federal workforce who can harness the power of technology to better address regularly-changing rules and requirement.

The GEAR Center can leverage ARiA’s MICA, which has significant potential to transform government contracting and public-private partnerships, in turn contributing to an upskilled federal workforce and growing economy.

Please see the following enclosed material for additional information about MICA.

Enclosures:

1. Slide Deck describing MICA
2. MICA Overview Document
3. Bibliography of articles in popular periodicals featuring MICA