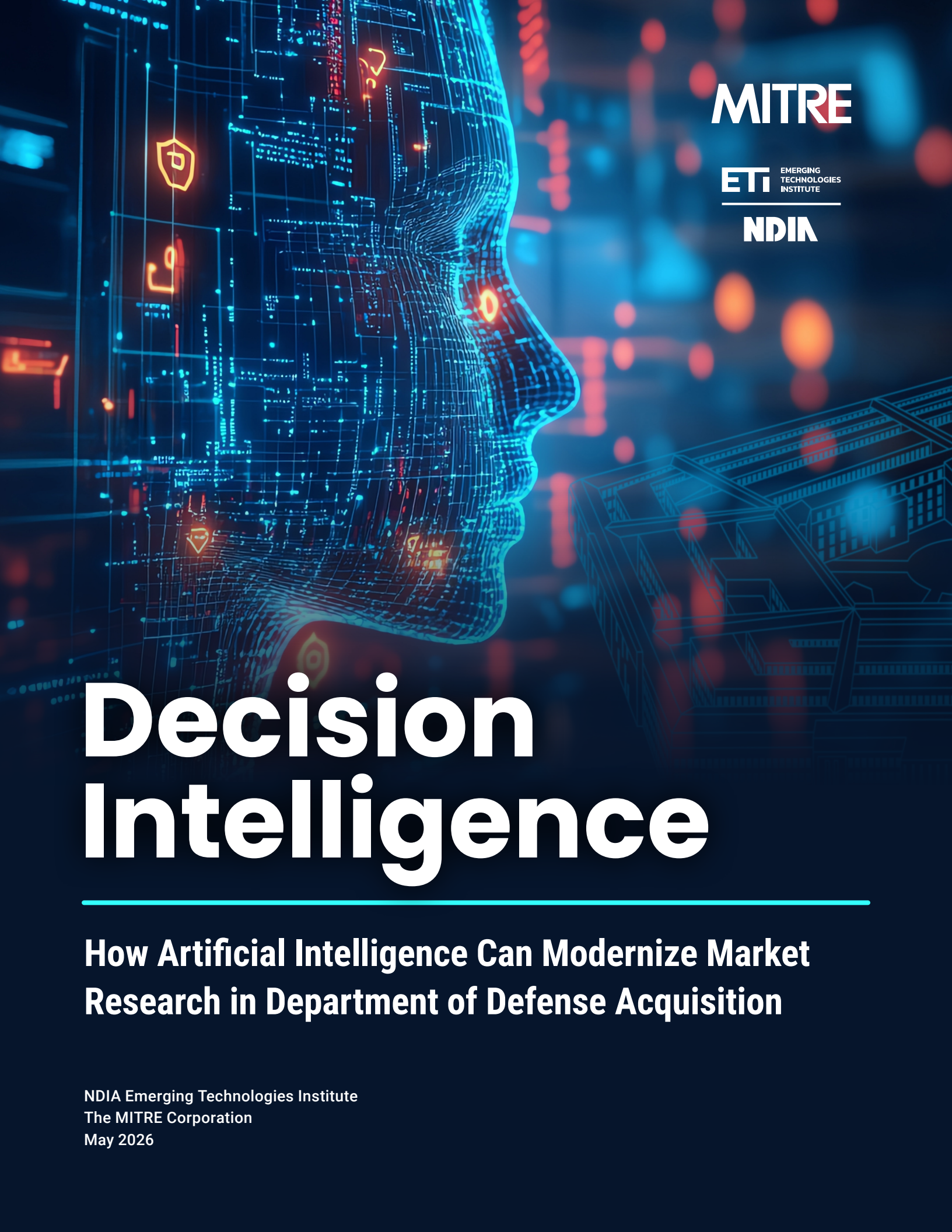




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Decision Intelligence

**How Artificial Intelligence Can Modernize Market
Research in Department of Defense Acquisition**

NDIA Emerging Technologies Institute
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Decision Intelligence: How Artificial Intelligence Can Modernize Market Research in Department of Defense Acquisition

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Abstract

Market research is a statutory requirement under FAR Part 10 and the strategic foundation of sound defense acquisition. Yet within the Department of War's warfighting acquisition workforce, it has become a compliance exercise rather than a decision-making instrument. Administrative burdens consume the time acquisition professionals should spend analyzing market signals, refining requirements, and shaping acquisition strategy.

This paper examines how AI-enabled tools can modernize market research across its full lifecycle, from RFI analysis and open-source aggregation to multi-source synthesis and report generation. Drawing on subject matter expert interviews and industry demonstrations during a webinar co-hosted by NDIA ETI and MITRE, the paper identifies structural weaknesses in current market research practices, including fragmented data ecosystems, workforce time constraints, and limited analytical tooling. It then presents case studies illustrating how AI can compress analytical timelines, improve defensibility, and elevate strategic reasoning while preserving human oversight.

The paper concludes with five implementation recommendations spanning governance frameworks, data-sharing arrangements, outcome-based metrics, sandbox experimentation, and standardized analytical prompts. Responsible adoption requires explainability, audit traceability,



and human validation at every stage. The goal is not automated procurement, but analytics-enabled decision intelligence that equips acquisition professionals to make faster, better-informed, and more defensible acquisition decisions.

Introduction

The Department of War (DOW) operates in an acquisition environment defined by technological complexity, legal scrutiny, and a rapidly evolving commercial market and industrial base. The foundation of every comprehensive acquisition strategy hinges on a fundamental prerequisite: market research. Yet, despite its statutory importance, market research has often been treated as a compliance obligation rather than the strategic instrument it is designed to be.

Market research is the process by which the Department can understand what the market can provide, including products, services, market capabilities, pricing, and contract vehicles, to choose the smartest path toward a contract. Using AI can enable contracting officers to better understand the landscape, including the identification of capabilities and offerings across a broad and fragmented market. The ideal outcome of AI-enhanced market research is one that promotes competition, delivers results that ensure competitive pricing and innovation, mitigates risks to reduce cost overruns, and can potentially accelerate time to capability fielding. AI allows acquisition teams to move from information gathering to decision-making faster, compressing timelines and enabling earlier alignment of requirements, acquisition strategies, and available solutions.

Simply, market research is the foundation of sound acquisition planning and empowers the warfighting acquisition workforce (WAW). This helps, as historical challenges within the warfighting WAW combined with recent DOW workforce reductions are likely to continue to strain an already overburdened workforce. Moreover, in many acquisition efforts, the documentation becomes the focus rather than the insight. Acquisition teams spend substantial time assembling screenshots, summaries, and regulatory language. This often leads to insufficient time analyzing what the market data actually means. Traditional RFIs and industry days frequently produce predictable, compliance-oriented responses. If acquisition teams want genuinely useful market signals, they must create engagement environments that incentivize candor over compliance. When market research is reduced to “a paperwork exercise,” it loses its strategic value. It becomes backward-looking, generic, and disconnected from technical and acquisition decisions. That repetitive approach not only weakens the acquisition strategy but also increases protest vulnerability due to thin analytic lineage.

To shape its investments in the most effective manner, the Department must be able to balance when to develop new capabilities and leverage existing ones. Therefore, the DOW must operate using accurate, timely, and context-rich data on emerging technologies, capital markets, and industrial base conditions. Decision speed is constrained by fragmented information and a workforce with an inconsistent understanding of the ecosystems that drive innovation. As such, this paper examines how market research is currently conducted, discusses how AI-enabled tools can modernize and create digital first approaches to those procedures, and assesses how such tools can enhance outcomes.¹ The paper begins with a discussion of the legal requirements for market research to understand the foundation of conducting market research. The body of the paper is intended to highlight the primary challenges facing the WAW when conducting market research, potential benefits of incorporating AI-enabled tools, and several use cases to demonstrate how AI-enabled tools would improve market research. The analysis draws on subject matter expert interviews and a

¹ For the purposes of this paper, AI encompasses generative AI, machine learning (ML), and natural language processing (NLP).



webinar co-hosted by the National Defense Industrial Association's Emerging Technologies Institute and MITRE, which featured demonstrations of existing tools by industry as well as a panel discussion that highlighted the opportunities and challenges associated with leveraging AI for market research purposes.²

Legal Foundation: FAR Part 10 and Market Research Requirements

To frame this discussion, it is essential to understand the legal requirement for market research within the Federal Acquisition Regulation (FAR). FAR 2.101 (2026) defines market research as the process “of collecting and analyzing information about capabilities within the market to satisfy agency needs.” Market research is a statutory requirement under FAR Part 10 (2025), which states that agencies shall document the results of market research in a manner appropriate to the size and complexity of the acquisition.

Although market research should be initiated by the program office, it is the responsibility of the contracting officer to determine the appropriateness of the market research conducted (Small Business Administration, 2024). Documentation of market research activities provides a historical record and evidence that appropriate measures were performed for the acquisition activity. At a minimum, market research best practices require that this documentation contains four elements: the time frames during which research was conducted, the methods used, an analysis of vendor capabilities, and specific recommendations derived from findings (Public Spend Forum, 2020). Yet, there is no mandated or accepted approach to meeting market research requirements. FAR Part 10 identifies multiple methods, and FAR 10.001(a)(3) outlines how results should be used, including identifying available sources, determining whether commercial items meet requirements, understanding commercial business practices, and exploring small business participation opportunities (Preference for Commercial Products and Commercial Services, n.d.). On all actions at or above \$250,000, a market research report is required to establish the acquisition strategies' reasonableness (Small Business Administration, 2024).

The Defense Federal Acquisition Regulation Supplement (DFARS) further supplements the FAR with DOW-specific requirements. DFARS 210.001 (n.d.) requires market research before certain types of acquisition solicitations and builds upon FAR 10.001(a) by mandating that agencies conduct market research appropriate to the circumstances before issuing solicitations with tiered evaluation of offers. It also requires teams to use market research results to determine whether criteria in FAR Part 19 (n.d.) are met for small business set-asides and to inform price reasonableness determinations. Collectively, these regulations demand that DOW acquisition teams develop a deep understanding of both the regulatory framework and the actual requirements they are seeking to fulfill.

Given the Pentagon's sustained push for commercial and dual-use products and services, market research is a prime area for enhancing existing procedures to meet those goals and priorities. FAR Part 12 (n.d.), which lays out the policies and procedures for conducting market research for the acquisition of commercial products and services, positions market research as the foundational activity for describing the government's need in functional and performance terms and for building solicitations and contracts on commercial practices wherever appropriate. Congressional legislation underscores this priority. Section 1828 in the Fiscal Year 2026 National Defense Authorization Act (NDAA; 2025–2026) directs the DOW to conduct a comprehensive review of its approach to acquiring commercial products and services, encompassing policies, processes, guidance, and instructions. The review is also to examine

² The webinar link can be found on NDIA ETI's YouTube channel here:
<https://www.youtube.com/watch?v=cvEC-N5RcDQ>



the centralized commerciality determination capability under 10 U.S.C. § 3456, methods to enhance responsiveness, approaches to increase the number of commercial determinations, and the review and acceptance of commercial pricing lists to ensure validity across separate offers (Preference for Commercial Products and Commercial Services, n.d.).

The Structural Limits of Current Market Research

Pentagon market research typically begins with an internal review of IDIQ contracts, GWACs, prior market research reports, CPARS evaluations, and historical contract files. External research consists of SAM.gov notices, Requests for Information, Sources Sought announcements, industry days, trade events, and one-on-one exchanges. While these efforts satisfy statutory requirements, they suffer from three structural weaknesses: fragmented data ecosystems, workforce time constraints, and limited analytical tooling.

Teams routinely spend hundreds of hours:

- Reading and categorizing 50 to 100 or more RFI responses
- Manually summarizing vendor submissions
- Copying excerpts into reports
- Formatting documentation
- Cross-referencing regulatory language

Yet, acquisition teams often spend only a few hours asking the more consequential questions:

- What patterns do we see?
- Where is the market aligned?
- Where is it fragmented?
- What does this tell us about competition?
- How should this shape our acquisition strategy?

Instead of spending 100 or more hours categorizing and formatting, teams can automate ingestion and structuring, validate AI outputs, and spend meaningful time analyzing implications. AI empowers acquisition professionals to devote more time to strategic interpretation and less to clerical assembly. However, the automation of routine tasks only goes so far. AI must be combined with operational experience and institutional knowledge to ensure that human-centric data is not missed. For example, data poisoning can affect the perceived performance of a particular company, making it incumbent upon the contracting team to maintain knowledge of company brands and track records that may not surface in structured datasets. Throughout all of these applications, AI outputs must be capable of withstanding audit and protest scrutiny, and data quality must be monitored continuously to prevent biased or incomplete findings from entering the analytical record.

The administrative burden crowds out strategic thinking and can slow down capabilities being delivered to warfighters. The analysis of market conditions, which is the most valuable part of the entire market research process, becomes compressed. Information is gathered but not systematically structured. Reports often prioritize compliance documentation rather than analytical insight. Engagement occurs, but its implications are not always operationalized into refined requirements or acquisition strategy adjustments.



Modernizing market research therefore requires not only analytical tools but also demands a change in how organizations engage with stakeholders and how rigorously they interpret information. The structural problem is not that acquisition teams lack effort or expertise; it is that they lack infrastructure (i.e., analytical support resources) that could assist with information gathering and analysis. The software tools available to most contracting offices are not purpose-built for market analysis at scale. Without purpose-built support, even the most experienced teams struggle to translate raw market data into coherent strategic insight within the constraints of real acquisition timelines.

Market research success metrics must also evolve. The field currently tends to measure participation, such as how many vendors attended an industry day or how many RFI responses were received, rather than analytical outcomes. Metrics should shift from participation counts to measurable requirement refinements, improved competition rates, and demonstrable changes to acquisition strategy informed by market engagement.

AI Across the Market Research and Industry Engagement Lifecycle

In alignment with the DOW's Acquisition Transformation Strategy (ATS) and its shift toward digital marketplaces, AI-enabled market research both leverages existing, pre-vetted solutions and enables acquisition teams to continuously assess evolving market capabilities, ensuring the government does not miss emerging innovations, alternative approaches, or better-value solutions (OUSD A&S, 2025). AI can meaningfully support multiple stages of the market research process. Rather than functioning as a single-purpose tool, AI is best understood as a layered capability that contributes distinct value at each phase, spanning from initial data gathering through final report generation. Most of these reflect using data analytics to support acquisition professionals as they attempt to gather and analyze large volumes of unstructured information. The following outlines how AI could theoretically be applied across key market research activities.

RFI and Sources Sought Analysis

- Extract themes and recurring capability claims
- Compare vendor maturity levels
- Identify innovation areas and redundancies
- Flag inconsistencies between submissions and requirements

Website and Open-Source Scraping

- Aggregate vendor capability data
- Identify current providers and new entrants
- Detect technology trends
- Compare commercial offerings at scale

Consolidating Industry Engagement Artifacts

- Integrate RFI responses, 1:1 meeting notes, white papers, and SME inputs
- Identify alignment across engagements
- Detect shifts between written submissions and verbal discussions

Past Performance and Historical Data

- Pull historical contract data



- Analyze vendor concentration
- Identify patterns in delivery models and pricing approaches

Drafting the Market Research Report

- Generate structured outlines
- Maintain traceability from conclusion to source
- Create defensible documentation aligned with FAR Part 10

Traceability, Governance, and Human Oversight Remain Essential

- Map conclusions directly to documented sources
- Include human validation checkpoints that are mandatory
- Withstand audit and protest scrutiny (associated outputs)
- Monitor data quality to prevent biased or incomplete findings

Benefits of AI for Market Research

One of the most persistent inefficiencies in traditional market research is the imbalance between administrative effort and analytic insight. Acquisition teams are inundated with information and potential data sources, and effective AI-enabled market research must address several interconnected challenges across the full lifecycle of data collection and analysis.

AI-enabled tools can ingest RFI responses simultaneously, extracting structured capability claims, clustering recurring themes, identifying gaps between requirements and market capability, and comparing vendor approaches side-by-side. When acquisition teams issue RFIs, the volume and variability of vendor responses create an immediate analytical challenge that AI is well-positioned to manage. Beyond formal submissions, AI tools can aggregate vendor capability data from publicly available sources to identify new market entrants, detect emerging technology trends, and compare commercial offerings at scale, enabling acquisition teams to develop a more complete and current view of the market landscape without relying exclusively on what vendors choose to submit in formal engagements. Market research also generates multiple discrete artifacts, to include RFI responses, notes from one-on-one industry meetings, white papers, and SME inputs, that exist in separate formats and are difficult to synthesize manually. AI can integrate these varied inputs, identify alignment and divergence across engagements, and cross-reference findings in ways that produce a more coherent and complete picture of the market. When historical data sources such as CPARS or other procurement history are made available, AI can further help teams assess patterns in delivery models and pricing approaches and surface lessons from prior acquisition outcomes, informing not just what the market offers today, but what has worked and failed in analogous efforts. AI can also tag data for traceability and audit lineage, generate structured vendor comparison matrices, consolidate findings into draft market research reports, and help ensure acquisition teams avoid prohibited contracting with sanctioned entities or countries of concern, or align with statutory requirements such as the Buy American Act (Carpenter & Murrill, 2022).

There is also an important and unresolved question about whether AI adds or removes subjectivity from market research and the acquisition process more broadly. While AI can introduce greater consistency in how data are processed and themes are identified, it can also embed biases present in training data (should any be used), amplify the prominence of well-documented vendors over newer or less-visible entrants, and reflect the assumptions of those who configure the system. Understanding this dynamic is essential to responsible AI adoption in acquisition settings.



Market Research as an Integral Part of an Acquisition Strategy

Market research is not an isolated compliance activity. It is a strategic input that directly shapes the downstream trajectory of an acquisition program. When properly executed, market research informs everything from how requirements are written to how contracts are structured. Treating market research as an exercise merely to comply with FAR requirements, disconnected from the overall goals of the acquisition activity, fundamentally misses its purpose and diminishes its value. Successful market research will enable the user and acquisition personnel to discuss the various alternatives, assess risk, make tradeoffs, negotiate, and clearly define the requirements upon which the acquisition will be based (Defense Standardization Program Office, 2018).

As the DOW shifts away from requirements-centric frameworks such as the Joint Capabilities Integration and Development System (JCIDS) toward more mission-integrated approaches like the Mission Engineering and Integration Approach (MEIA), the role of market research expands beyond identifying available vendors. It must inform how capabilities integrate across systems, support mission threads, and enable trade space analysis across alternatives. AI-enabled market research can provide structured insight into these integration points, allowing acquisition teams to better align requirements, architectures, and acquisition strategies with mission outcomes. This also supports Modular Open System Approach (MOSA) objectives by identifying modular, interoperable, and commercially available components earlier in the lifecycle (Secretary of Defense, 2025).

Technical Requirements Development

If conducted correctly, market research informs performance-based requirements instead of overly-prescriptive specifications. By analyzing patterns across industry capabilities, acquisition teams can identify commercially common architectures, avoid non-commercial or overly restrictive language, shape modular and scalable requirements, and detect gaps between government desires, technical feasibility, and industrial capabilities. This analysis prevents teams from “writing to a legacy solution” and, instead, aligns requirements with real market capability. It also can prevent the development of requirements that are cost prohibitive or technically infeasible given current market and industrial realities. The result is a solicitation that the market can meaningfully respond to, rather than one that excludes potential vendors by virtue of unnecessarily narrow specifications.

Acquisition Approach and Contract Structuring

Beyond requirements, market research should directly influence the acquisition strategy. This includes contract type selection, evaluation factors and their relative weighting, small business strategy, engagement of cost share or private capital sources, additional or different market research and/or industry engagement needed, and the choice between Other Transaction (OT) agreements and FAR-based pathways. When acquisition teams use market research as a live, iterative and AI-enabled input to strategy development rather than a one-time document, the outcomes can be more defensible, more competitive, and better aligned with mission requirements.

Rather than relying solely on conventional engagement mechanisms, acquisition teams should incorporate innovative engagement models, including:

- Reverse industry days, where the government presents its problem and invites industry to propose solution approaches rather than respond to a predefined requirement, which can lead to approaches the government had not considered. AI can ingest these submissions and cluster them by approach type, technology readiness level, and alignment with government constraints, surfacing solution patterns the team might not have recognized manually. This is especially valuable when the government genuinely



does not know what the right answer looks like and needs the market to help define the solution space.

- Technical challenge events and capability sprints create structured environments for vendors to demonstrate, rather than describe, their solutions. AI can normalize and aggregate these inputs, identify where evaluators converged or diverged in their assessments, and flag capability gaps or standout performers. Over time, if this data is retained and structured, it could feed a running database of vendor demonstration performance that informs future acquisition planning.
- Structured one-on-one exchanges allow for candid dialogue about pricing realities, integration constraints, and commercial norms that rarely emerge in formal written submissions. AI-enabled transcription and analysis tools can convert meeting notes or recordings into structured summaries, extract recurring themes across vendors (e.g., multiple vendors flagging the same integration constraint), and detect where what vendors say verbally diverges from what they submitted in writing. This divergence analysis is particularly useful for separating genuine capability from polished marketing.
- Digital collaboration forums offer persistent engagement channels that enable iterative dialogue over time rather than a single-point exchange. AI can monitor these threads continuously, track sentiment and thematic shifts, and alert acquisition teams when the market is signaling something significant (e.g., multiple vendors expressing concern about a draft requirement).

These methods uncover pricing realities, integration constraints, commercial norms, and non-traditional participation opportunities earlier in the acquisition lifecycle. This is precisely when that information is most useful for shaping requirements and strategy. Implementation requires updating engagement playbooks under existing FAR authorities, training teams in structured facilitation techniques, and documenting insights into standardized analytical templates that feed directly into the market research record. AI would not only process these individual sources of information, but it would be positioned to be the strategic synthesis layer that connects the full body of market engagement to specific, defensible acquisition strategy decisions. In a MEIA context, this enables acquisition teams to evaluate not only contract structures, but how different acquisition pathways and vendor solutions contribute to mission-level integration, performance, resilience, and capability.

Commercial Item Designation

The current process for determining commerciality is opaque and difficult to refute. Additionally, the current administration is determined to prioritize commercial solutions. Executive Order 14271, entitled “Ensuring Commercial, Cost-Effective Solutions in Federal Contracts,” requires agencies to “procure commercially available products and services, including those that can be modified to fill agencies’ needs, to the maximum extent practicable, including pursuant to the Federal Acquisition Streamlining Act (FASA) of 1994 (Office of the Under Secretary of Defense for Acquisition and Sustainment, 2025). Accordingly, market research and how AI fits into market research workflows are ripe for further public discussion given the Department’s stated priorities.

Currently, there are two main paths to a commercial item designation (CID): 1) FAR Part 12 and 2) Commercial off-the-shelf (COTS) acquisition through FAR 12.103 (FAR Part 12, n.d.). Compared to traditional acquisition processes under FAR, the major difference between commercial and non-commercial acquisitions under the FAR and DFARS is seen in the solicitation and evaluation process rather than in the contract writing and purchasing phase. Foundational to acquiring commercial products or services is the commercial item



designation. Broadly, the FAR defines a product or service as commercial with the following definition: goods or services that are customarily used by the public or nongovernmental entities for purposes other than governmental purposes (FAR Part 12, n.d.). Certain non-commercially designated items may be acquired utilizing commercial authorities in the FAR with the special permission of certain authorities or under extremely specific circumstances. In addition to this general definition, there are many extensions to what qualifies as a commercial product or service. Commercial designations are primarily made by the individual contracting officer but are supported by the Commercial Item Group (CIG) at the Defense Contract Management Agency. Additionally, Prime defense contractors are responsible for determining the commerciality of their subcontractors. More exclusive than a regular commercial designation, is the designation of commercially available off-the-shelf (COTS). COTS goods are defined as goods that are available in broad quantities to the commercial market and made available to the government with no modification.

Each pathway has a different definition and/or conditions that must be satisfied to accelerate acquisition. A CID demands comprehensive market research to assess availability and suitability to ensure whether a commercial item satisfies an agency's requirements. By expanding the scope and speed of market research, AI-enabled systems would allow contracting officers to more comprehensively understand commercial markets and evaluate vendor offerings, thereby identifying commercial products that might otherwise be overlooked.

Leveraging Available Data Sources

When conducted properly, market research is one of the most impactful processes to program success. The tools and information available to acquisition professionals, therefore, are intrinsically linked to acquisition outcomes. A rigorous market research effort validates whether commercial solutions exist, identifies innovation trends and emerging technologies, reveals vendor maturity levels and integration patterns, assesses competitive depth and small business participation, and surfaces realistic pricing, delivery, and licensing models. Market research does not simply ask, "What is available?" It asks, "What does the market signal tell us about how we should structure this acquisition?" When executed rigorously, market research strengthens defensibility, improves requirement clarity, and reduces downstream risk.

Market research leverages two primary streams of information: internal government data and external market sources (Small Business Administration, 2024).

Internal Government Sources	External Sources
• Sam.gov • FPDS – Next Generation • Contractor Performance Assessment Reporting System (CPARS) • General Services Administration (GSA) eBuy • Governmentwide Acquisition (GWAC)-specific portals • Dynamic Small Business Search (DSBS) • Supply chain risk management systems • Open source intelligence (OSINT) • Prior market research reports up to 18 months before award	• Trade shows • Demonstrations • Experimentation events • Industry days & vendor demos • Brochures • Industry websites and company marketing • Trade association reports and publications • Consultations with SMEs • Pre-solicitation conferences • RFIs • 1:1 industry engagements



• Acquisition Gateway • U.S. Census Bureau • Bureau of Economic Analysis • Bureau of Labor Statistics • Digital Marketplaces	• Outreach by Federally Funded Research and Development Centers (FFRDCs) • Commercial market intelligence software and databases (e.g., Global Reference Solution)
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Before AI can enhance analysis, the quality of inputs must improve, which is inherently a question about data access and quality. A high-quality AI-enabled market research tool is therefore defined not only by its analytical capabilities, but also by the richness and integrity of the data it ingests.

In the market research domain, data fall into two broad categories: public and private. Each presents distinct opportunities and limitations, all of which should be leveraged to train current and future models.

Public Data

There is a substantial range of publicly available sources from which AI models can be trained, including commercial sales, SAM.gov, and the Federal Procurement Data System – Next Generation (FPDS-NG). Public data can yield significant insight into the vendor landscape, market pricing norms, and procurement trends. However, an interesting additional layer of analytical value becomes available when Pentagon outcome data are incorporated. This data, however, presents its own challenges: It lives across numerous offices, is often unclean, and would require reinforcement learning to ensure that acquisition data is meaningfully tied to specific outcomes.

CPARS represents one important example of historical outcome data for contractor past performance. Ingesting this outcome data in a structured, interoperable way would produce the most capable AI-enabled tool for helping contracting officers understand what has worked and what has failed in analogous acquisition contexts. The ideal system would surface patterns from past market research reports, identifying themes associated with successful technology development programs and similarly flagging characteristics common to program failures.

Finkenstadt (2026) explicitly calls out the need for better data to help measure how federal procurement can lead to more optimal outcomes. He argues, “Federal procurement data systems were built to record transactions—that a contract was awarded, when it was awarded, and for how much—while leaving out the context and outcomes that actually explain performance” (Finkenstadt, 2026). Much of the data needed to measure performance is scattered across disconnected systems. Requirements reside in mission planning tools, budget data is stored in financial systems, contracting actions are logged in contract-writing platforms, and performance data appears later in separate databases with limited linkage back to the decisions that shaped the contract (Finkenstadt, 2026). The true value in AI will be found in simplifying the federal procurement system so acquisition teams can make more informed decisions based on desired mission outcomes.

Science and Technology Investments and Parallel Efforts

A particularly underused data source involves the breadth of ongoing R&D and procurement efforts occurring across the government. With roughly \$18 billion in DOW S&T funding projected for FY2026, it would be enormously valuable for acquisition teams to have ready visibility into what is already being funded in research programs and what systems and services the Pentagon is already procuring and using (American Institute of Physics, 2026).



There are currently many parallel efforts underway, and the Department has expressed interest in identifying and reducing redundancy. An AI-enabled market research tool with access to this investment data could help teams identify complementary programs, avoid duplicative development, and leverage existing government investments in their acquisition planning.

The Government-Industry Data Collaboration Imperative

Ultimately, AI can only be as helpful as the data it has access to. If the only data available to build tools are public data, then the government is leveraging only a fraction of the equation. AI will be limited to learning from a subset of what would truly help acquisition teams understand the full competitive and technological picture.

Addressing this requires deliberate government-industry collaboration, in which the government shares relevant acquisition outcome data with the commercial sector in a structured and secure manner. Industry is uniquely positioned to build these tools, but this must be done while maintaining appropriate security considerations and access controls.

A robust market research strategy blends qualitative and quantitative inputs. It synthesizes structured responses, such as those gathered through RFIs, with unstructured insights drawn from industry meetings, white papers, and web content. It is worth noting that market research is itself an established professional domain with competing methodologies, adding both complexity to the task of conducting market research as well as room for creativity in how acquisition teams determine what exists in the market. Ultimately, the key is not the mechanism, but rather the synthesis.

Potential Risks

While the benefits of AI-enabled market research are substantial, the risks are equally real and must be addressed with the same analytical rigor applied to the tools themselves. AI for market research may represent one of the highest-risk applications of the technology in acquisition. Market research findings directly shape the acquisition strategy, including the contract structure and pricing. Errors or biases at this stage can cascade throughout an entire program.

Data Poisoning

Commercial AI systems rely heavily on publicly available data, particularly in market research contexts. News saturation presents a risk, as companies could flood the information environment with exaggerated or misleading success narratives, influencing how AI systems interpret their brand. Vendors with high media profiles, frequent government contracting activity, or robust digital footprints will naturally be more prominent in AI-processed datasets than newer, smaller, or non-traditional. This dynamic risks reinforcing incumbency bias at the very stage of the process designed to identify competitive alternatives. It also makes reputation management and information integrity critical. AI is colloquially compared to an entry-level analyst or intern, who can lack institutional knowledge about a company's past performance and is therefore unable to contextualize vendor claims against a history of execution. AI systems have no inherent awareness of company brand, organizational culture, or the gap that frequently exists between what a vendor claims it can do and what it has actually delivered and its capabilities and past performance. This is precisely the kind of contextual judgment that experienced contracting officers and program managers develop over years of engagement.

Bid Protests

Additionally, AI-enabled market research introduces new vectors for bid protests. FAR 33.103(g) directs agencies to make best efforts to resolve protests within 35 days and permits information exchange where appropriate (FAR 33.103, 2025). As AI becomes embedded in



source selection support, new protest grounds may emerge due to possible predetermined conclusions. It is not uncommon for the Military Services to conduct market research that relies on predetermined conclusions rather than adequate market research, which can lead to protests. This was the case for *Palantir USG, Inc. v. U.S.* No.16-784C, where the Army was so focused on a developmental approach to a military system that it “failed to seriously consider whether commercial items were available” (Longo, 2020). If an acquisition team relies on AI outputs without adequate traceability, then a “protester” may successfully argue that the government’s market conclusions lacked a documented, rational basis.

Ultimately, mitigating these risks requires deliberate governance: clear policies for human validation of AI outputs and audit trails that log every AI interaction as well as map conclusions to sources.

Case Studies: Examples of Moving Toward Decision Intelligence

Improved engagement generates richer information. However, without structured analysis, that information remains fragmented and underutilized. The central modernization challenge is therefore interpretive, not merely procedural. AI’s most significant contribution lies in transforming dispersed, unstructured inputs into structured insight while preserving human decision authority. The following real-world case studies illustrate this transition across three maturity levels, each demonstrating a distinct application of AI to market research challenges.

Case Study 1: High-Volume RFI Analysis

A DOW program office received 75 detailed responses to an RFI related to a complex technical requirement. Historically, analyzing responses of this volume would require a team of four acquisition professionals and additional technical subject matter experts working for several weeks to manually review, extract, categorize, and synthesize vendor inputs. The responses contained unstructured narratives, varying terminology, and inconsistent formatting, making comparison labor-intensive and prone to oversight.

An AI-enabled market research tool was deployed to ingest both the RFI questions and all vendor responses. The system parsed narrative text, aligned responses to specific RFI question areas, normalized terminology across vendors, and extracted structured data fields, which includes technical capability claims, commerciality assertions, contract vehicle preferences, small business status, and security credentials. Within hours, the tool produced sortable matrices, thematic summaries, and traceable source citations tied directly to each vendor submission. Human reviewers validated outputs and resolved ambiguities, but the bulk of the mechanical synthesis was automated.

The result was a reduction in analytical time from several weeks to less than a day of structured review. More importantly, the acquisition team shifted from clerical data sorting to higher-order analysis. Rather than spending time locating information, they spent time evaluating risk, assessing commercial alignment, and identifying competitive dynamics. The final market research report was more comprehensive and more defensible, demonstrating how AI can dramatically increase efficiency while preserving contracting officer judgment.

Case Study 2: Integrated Strategic Synthesis Across Market Inputs

In a subsequent acquisition effort, the challenge was not simply the volume of RFI responses, but the breadth of inputs generated during market research. The agency had collected RFI responses, conducted multiple one-on-one industry engagements, received structured and informal SME feedback, and produced an initial draft market research report. Each input stream contained valuable insights, but they existed in separate formats and narrative styles. The acquisition team faced a familiar problem: Substantial information had been gathered, yet translating it into strategic conclusions – “so what” – remained difficult.



AI was deployed to ingest the full spectrum of market research artifacts. Rather than simply summarizing content, the system was structured around analytical framing questions: What consistent signals is the market sending? Where do vendor capabilities converge or diverge? What technical requirements appear commercially aligned versus aspirational? What contract structures do vendors indicate as viable? Where are cost, schedule, or integration risks most frequently identified?

The AI tool clustered themes across sources, identified areas where SME assumptions conflicted with industry feedback, and highlighted recurring capability constraints. It cross-referenced vendor feedback against draft requirements, flagging requirements that were frequently described as non-standard, overly prescriptive, or misaligned with commercial practice. It also identified where the market demonstrated strong maturity, suggesting opportunities for performance-based contracts or commercial item acquisition pathways.

Crucially, AI did not make decisions. Acquisition professionals reviewed the structured outputs, validated source traceability, and debated implications. The result was a materially improved acquisition strategy. Technical requirements were refined to reflect demonstrated commercial norms. Evaluation criteria were adjusted to discriminate for operational maturity rather than marketing claims. Contract structure considerations, such as incentive design, contract type, and phasing, were informed directly by documented industry input. By integrating multiple market research inputs into a coherent analytical framework, AI enabled the team to maintain human agency while elevating the quality of strategic reasoning. The market research effort shifted from descriptive reporting to actionable decision intelligence.

Case Study 3: Industry Landscape and State-of-the-Art Mapping

A third example involved pre-solicitation strategic market analysis in a rapidly evolving technical domain. The acquisition team sought to understand the state of the industry, major players, emerging entrants, technological maturity, and the “art of the possible” prior to drafting formal requirements. Relevant information existed across prior market research reports, SME interviews, government databases, academic publications, and other materials. Synthesizing these inputs manually would require significant time and risk fragmented insight.

Instead, AI tools were used to ingest structured and unstructured inputs from SMEs, historical market research documentation, industry white papers, and publicly available data. The system identified recurring capability patterns, mapped vendor concentration areas, highlighted emerging technologies, and differentiated between marketing claims and substantiated deployment history. It also correlated vendor participation trends across prior procurements to identify incumbency patterns and competitive potential.

The output was not a replacement for expert judgment but an analytically integrated landscape assessment. The AI-generated synthesis provided a structured depiction of major industry segments, capability maturity tiers, and innovation vectors. Acquisition professionals used this foundation to frame actionable findings: where competition was robust, where non-traditional vendors could be attracted, where technical risk required phased acquisition, and where commercial solutions could be leveraged under FAR Part 12 authorities. The final report reflected a comprehensive, evidence-based view of the market, demonstrating how AI can transform dispersed data into strategic acquisition insight while maintaining human-in-the-loop interpretation and accountability.

Implementation Recommendations

AI's value in market research depends on disciplined governance and structured integration. The following recommendations are designed to operationalize responsible adoption



and translate the benefits described throughout this paper into practical action for contracting officers and acquisition teams.

1. The Military Services should request, and Congress should appropriate, AI-enabled tools that can be integrated within FAR-aligned workflows.

Commercial AI tools should be integrated directly into DOW market research templates and acquisition planning documents rather than operated as standalone systems. Outputs must include traceable citations to source material and confidence indicators that allow contracting officers to assess the reliability of AI-generated conclusions. Contracting officers must validate and document independent judgment, ensuring that AI-generated content does not become the default record without professional review. Embedding AI into existing workflows, rather than creating parallel processes, reduces friction and supports adoption while preserving audit integrity.

2. The DOW should establish a framework for sharing relevant acquisition outcome data with industry partners for the purpose of building and validating AI-enabled market research tools.

This framework should include appropriate data governance protocols, security controls, and oversight mechanisms to ensure that sensitive acquisition information is protected while enabling the government-industry collaboration necessary to produce high-quality analytical tools. Without access to government outcome data, industry-built tools will remain limited to public data sources, which captures only a fraction of the insight needed to meaningfully support acquisition teams.

3. The Military Services and Warfighting Acquisition University should implement instructions that measure outcomes, not tool usage.

Success metrics for AI-enabled market research should be tied to acquisition processes, not automation statistics. Relevant metrics include reduction in analytical cycle time, improvement in requirement refinement traceability, increased competition rates, reduced protest vulnerability, and increased commercial solution utilization. Measuring only whether AI tools are being used without assessing whether they are improving acquisition quality will not generate the accountability or continuous improvement necessary for responsible adoption. Program offices and contracting activities should establish baseline measures prior to deployment and track changes over time.

4. The Under Secretary of War for Acquisition and Sustainment (USW[A&S]) should initiate a campaign of experimentation by creating a Department-wide digital “sandbox” to run controlled, consequence-free acquisition simulations using real acquisition data to validate AI tool behavior before operational deployment.

Currently, agencies that want to test AI tools in acquisition contexts must either deploy them in live procurements with real consequences or conduct purely theoretical exercises that don't capture realistic dynamics. This digital testbed would allow the Pentagon to understand how AI can shape future market research and other acquisition workflows, which carries several implications. First, experimentation can help inform future policies regarding the level of required human input. Second, it can assist in determining potential protestable decisions. Analytical lineage of a decision may be scrutinized in a protest proceeding. Experimentation can help contracting officers understand gaps in emerging software capabilities. Third, lessons learned can be directly applied to current and future WAW training, using customized programs that address hallucination risks, bias detection, and protest defense strategies.



5. The Office of the Secretary of War and Military Services should develop best practices for the use of these tools by standardizing analytical framing questions.

AI systems should be configured around consistent analytical prompts to ensure that outputs are structured, comparable, and aligned with acquisition objectives. Standard framing questions could include: What is commercially available? Where are maturity gaps? What risks recur across vendors? What contract structures align with industry norms? How does vendor feedback affect requirement design? These questions should focus on tasks that are more appropriate for the AI tool, which include time-consuming and data-intensive responsibilities. Standardizing these prompts improves cross-program comparability, enables institutional learning, and reduces the risk that AI outputs will reflect idiosyncratic configurations rather than mission-aligned analysis. While the Defense Pricing, Contracting, and Acquisition Policy (DPCAP) does not provide a standard format for documenting market research, standard questions can help provide a baseline understanding for how to use these tools, which will ultimately reduce the potential for protests and ensure that the companies building these tools can meet the needs of their government customers.

Conclusion

Modern defense warfighting acquisition operates in an environment defined by informational scale, technological dynamism, and legal scrutiny. Market research remains the statutory foundation of acquisition strategy, yet its processes have not kept pace with its demands. Market research should not be a compliance artifact. It should be a strategic instrument that shapes requirements, informs acquisition strategy, strengthens defensibility, and reduces risk.

This paper advances a structured modernization model built on three pillars: innovative and disciplined industry engagement; structured analytical interpretation of market signals; and AI-enabled tools embedded within human-led governance frameworks.

Today, the imbalance between administrative effort and analytic value undermines that potential. Across high-volume RFI analysis, integrated multi-source synthesis, and enterprise-level industry landscape assessment, AI demonstrates measurable gains in efficiency, defensibility, and strategic clarity. By automating ingestion, structuring, and thematic analysis, AI frees acquisition professionals to focus on what matters most: interpreting market signals, shaping performance-based requirements, designing smarter acquisition strategies, and making defensible, mission-aligned decisions.

However, technology alone is insufficient. Responsible adoption requires explainability, human oversight, policy alignment, and disciplined implementation. The future of DOW market research will not be automated procurement. It will be human-centered, analytics-enabled decision intelligence. When AI is used to structure insight rather than substitute judgment, it strengthens contracting officer agency, improves acquisition outcomes, and reinforces the principles embedded in the FAR and DFARS.

Modernization, therefore, is not about replacing professionals with algorithms. It is about equipping professionals with analytical leverage equal to the complexity of the markets they must understand.

References

American Institute of Physics. (2026, February 12). *FYI: Science policy news: FY2026 Department of Defense*. <https://www.aip.org/fyi/fy2026-department-of-defense>



- Carpenter, D. H., & Murrill, B. J. (2022). *The Buy American Act and other federal procurement domestic content restrictions* (CRS Report No. R46748). Congressional Research Service. <https://www.congress.gov/crs-product/R46748>
- Defense Standardization Program Office. (2018). *Market research: Gathering information about commercial products and services*. Defense Logistics Agency. https://www.waru.edu/sites/default/files/Migrate/EventAttachments/753/SD5_Market%20Research%20Guidance_122018.pdf
- DFARS 210.001, Policy (n.d.). <https://www.acquisition.gov/dfars/210.001-policy>
- FAR Part 10, Market Research (2025). <https://www.acquisition.gov/far/part-10>
- FAR Part 12, Acquisition of Commercial Products and Commercial Services (n.d.). <https://www.acquisition.gov/far/part-12>
- FAR Part 19, Small Business Programs (n.d.). <https://www.acquisition.gov/far/part-19>
- FAR 2.101, Definitions (2026). <https://www.acquisition.gov/far/2.101>
- FAR 33.103, Protests to the Agency (2025). <https://www.acquisition.gov/far/33.103>
- Longo, D. P. (2020). Market research — Promise or problem? *Defense Acquisition Magazine*. <https://www.dau.edu/library/damag/november-december2020/market-research>
- National Defense Authorization Act for Fiscal Year 2026, S. 1071, 119th Cong. (2025–2026). <https://www.congress.gov/bill/119th-congress/senate-bill/1071/text>
- Office of the Under Secretary of Defense for Acquisition and Sustainment. (2025). *Acquisition Transformation Strategy*. DOD. www.media.defense.gov/2025/Nov/10/2003819441/-1/-1/1/ACQUISITION-TRANSFORMATION-STRATEGY.PDF
- Office of the Under Secretary of Defense for Acquisition and Sustainment. (2025, May 27). *Executive Order 14271 – Ensuring commercial, cost-effective solutions in federal contracts – Implementation guidance*. DOD. <https://www.acq.osd.mil/dpap/policy/policyvault/USA000845-25-DPCAP.pdf>
- Office of the Under Secretary of War for Research and Engineering. (2026, January 22). *War Department offers no-fee patent licenses through Patent Holiday initiative to accelerate technology from lab to the warfighter*. DOW. <https://www.cto.mil/no-fee-cel/>
- Preference for Commercial Products and Commercial Services, 10 U.S.C. § 3453 (n.d.). <https://www.law.cornell.edu/uscode/text/10/3453>
- Public Spend Forum. (2020). *How to conduct government market research* [Video]. YouTube. <https://www.youtube.com/watch?v=PoeqtU43Dzg>
- Secretary of Defense. (2025, August 20). *Reforming the joint requirements process to accelerate fielding of warfighting capabilities*. DOD. www.media.defense.gov/2025/Nov/10/2003819442/-1/-1/1/REFORMING-THE-JOINT-REQUIREMENTS-PROCESS-TO-ACCELERATE-FIELDING-OF-WARFIGHTING-CAPABILITIES.PDF
- Small Business Administration. (2024). *SBA's small business learning series: Market research*. https://www.napex.us/wp-content/uploads/2024-11_Market_Research_Presentation.pdf





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