



Report to the Chairman of the
Committee on Armed Services, House
of Representatives

June 2018

DEFENSE INDUSTRIAL BASE

Integrating Existing Supplier Data and Addressing Workforce Challenges Could Improve Risk Analysis

Accessible Version

GAO Highlights

Highlights of [GAO-18-435](#), a report to the Chairman of the Committee on Armed Services, House of Representatives

Why GAO Did This Study

Each year, DOD spends billions of dollars acquiring and sustaining weapon systems to meet U.S. national security objectives. DOD relies on an extensive, multi-tiered network of suppliers that make up the defense industrial base to provide the components, subsystems, raw materials, and equipment to develop and sustain these weapon systems. Ensuring that these suppliers can provide products and services at the time, quantity, and quality DOD needs is essential to meeting national security objectives. MIBP is DOD's focal point for assessing and mitigating department-wide industrial base risks.

GAO was asked to review DOD's efforts to ensure a viable defense industrial base. This report addresses DOD's approach to identify industrial base risks and its investments to address those risks. GAO reviewed DOD's guidance for industrial base assessments; analyzed industrial base assessments conducted by program offices, military departments and MIBP; reviewed MIBP's efforts to share supplier data; and reviewed documents for all 33 completed investment projects funded by MIBP's investment programs from fiscal years 2014 through 2017.

What GAO Recommends

GAO recommends that DOD make better use of existing supplier data and identify the appropriate workforce mix needed to work with business-sensitive data. DOD partially concurred, but noted that it is taking steps to identify and integrate existing supplier data and is evaluating staff resources for safeguarding business-sensitive data.

View [GAO-18-435](#). For more information, contact Marie A. Mak at (202) 512-4841 or makm@gao.gov.

June 2018

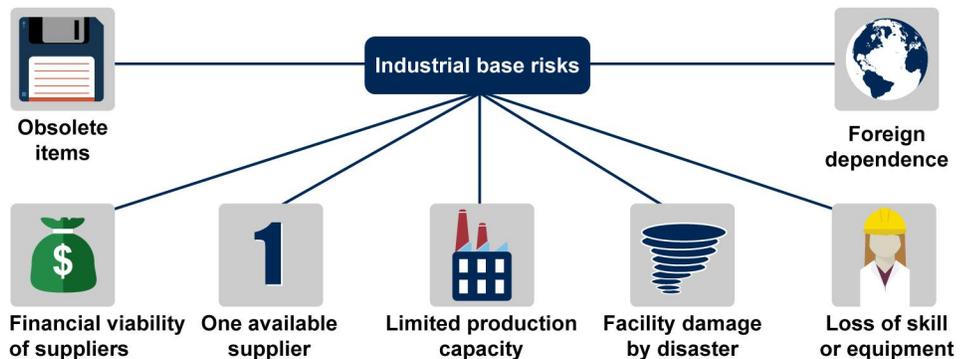
DEFENSE INDUSTRIAL BASE

Integrating Existing Supplier Data and Addressing Workforce Challenges Could Improve Risk Analysis

What GAO Found

GAO found that the Department of Defense (DOD) takes a dispersed approach to identify risks to the industrial base that draws on data from several DOD components and acquisition program offices. The figure below highlights examples of industrial base risks that DOD faces.

Examples of Risks Facing the Defense Industrial Base



Source: GAO analysis of Department of Defense information. | GAO-18-435

The Manufacturing and Industrial Base Policy (MIBP) office is DOD's focal point for industrial base issues. MIBP has two data systems that together could meet DOD's requirement for a data repository that centrally identifies available supplier data necessary to conduct industrial base analysis. However, GAO identified certain challenges that have prevented a comprehensive approach to department-wide analysis of risks. For example:

- MIBP's data systems do not fully leverage existing data from program offices on the companies that provide parts at the lower tiers of the supply chain, among other things. These data are not currently collected in a standardized format, but would enable MIBP to meet its goal to gain better insights into the supply chain.
- MIBP relies on contract staff to augment its workforce; however, MIBP officials have determined that these contractors may not access business-sensitive data needed to build its systems to facilitate industrial base analysis.

MIBP acknowledges these issues, but has not yet determined a solution. *Federal Standards for Internal Control* call for agency management to utilize quality information and to ensure a personnel mix with the requisite capabilities needed to achieve the agency's objectives. Without addressing these challenges, MIBP is likely spending resources on systems that do not meet its repository requirement or leverage existing data.

To mitigate risks, MIBP administers investment programs that can be used to help sustain or expand the defense manufacturing and industrial base. GAO found that these programs primarily invested in projects to (1) establish economically viable domestic sources of supply, (2) maintain existing suppliers, or (3) develop lower-cost or more efficient manufacturing processes.

Contents

Letter		1
	Background	5
	Various DOD Entities Identify Industrial Base Risks, but Challenges Limit Sharing and Analysis	12
	MIBP Invested in Projects to Preserve or Establish Industrial Base Capabilities, and Is Considering Strategies to Gain Insight into Long-Term Impacts	24
	Conclusions	34
	Recommendations for Executive Action	35
	Agency Comments and Our Evaluation	35
<hr/>		
Appendix I: Objectives, Scope and Methodology		38
Appendix II: Comments from the Department of Defense		43
Appendix III: GAO Contact and Staff Acknowledgments		47
	GAO Contact	47
	Staff Acknowledgments	47
<hr/>		
Appendix IV: Accessible Data		48
	Data Tables	48
	Agency Comment Letter	50
<hr/>		
Tables		
	Table 1: Selected DOD Acquisition Programs Reviewed by GAO	3
	Table 2: Examples of Industrial Base Risks That Could Impede DOD's Ability to Obtain Products at the Time, Quantity, and Quality Needed	7
	Table 3: Department of Defense (DOD) Industrial Sectors	8
	Table 4: Examples of Measures Used on Projects funded by DOD's Investment Programs	30
	Table 5: Select Department of Defense (DOD) Offices Interviewed by GAO	38
	Table 6: Non-generalizable Sample of Major Defense Acquisition Programs and Recent Milestones GAO Reviewed	40

Figures

Figure 1: Notional Illustration of a Ground Vehicle Supply Chain	6
Figure 2: Funding for DOD's Manufacturing and Industrial Base Policy's Investment Programs, Fiscal Years 2014 through 2017	12
Figure 3: Values and Durations of Selected Defense Production Act Title III Projects	26
Figure 4: Values and Durations of Selected Industrial Base Analysis and Sustainment Projects	27
Figure 5: Values and Durations of Selected Office of the Secretary of Defense Manufacturing Technology Projects	28
Accessible Data for Examples of Risks Facing the Defense Industrial Base	48
Accessible Data for Figure 2: Funding for DOD's Manufacturing and Industrial Base Policy's Investment Programs, Fiscal Years 2014 through 2017	48
Accessible Data for Figure 3: Values and Durations of Selected Defense Production Act Title III Projects	49
Accessible Data for Figure 4: Values and Durations of Selected Industrial Base Analysis and Sustainment Projects	49
Accessible Data for Figure 5: Values and Durations of Selected Office of the Secretary of Defense Manufacturing Technology Projects	50

Abbreviations

DCMA	Defense Contract Management Agency
DOD	Department of Defense
DPA Title III	Defense Production Act Title III
FPDS-NG	Federal Procurement Data System-Next Generation
IBAS	Industrial Base Analysis and Sustainment
ManTech	Manufacturing Technology
MIBP	Manufacturing and Industrial Base Policy
OSD	Office of Secretary of Defense

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June 13, 2018

The Honorable Mac Thornberry
Chairman
Committee on Armed Services
House of Representatives

Dear Mr. Chairman:

Each year, the Department of Defense (DOD) spends billions of dollars acquiring and sustaining weapon systems to ensure that it can meet U.S. national security objectives and maintain military superiority. DOD relies on an extensive network of suppliers that make up the defense industrial base to provide the components, subsystems, raw materials, and equipment needed to develop and sustain these weapon systems. For example, the Joint Air-To-Ground Missile program—a missile used on fixed and rotary wing aircraft—depends on over 100 suppliers that provide over 1,000 distinct parts. DOD’s network of suppliers is a diverse collection of companies ranging from some of the largest publicly traded companies to medium- and small-sized businesses, some of which are privately held. The suppliers work in tandem to provide the products and services DOD needs, which are often complex and defense-unique.

Ensuring that these companies can supply products and services at the time, quantity, and quality DOD needs is essential to support current and future mission requirements. However, globalization and an interconnected defense and commercial market pose significant challenges to maintain an adequate supplier base to meet DOD’s needs. Today, much of the technology that DOD relies on to maintain U.S. military superiority is now supplied by the commercial sector, compared to its past model where it could afford to support a dedicated industrial base to develop, produce, and sustain defense products and services. At the same time, DOD’s low demand relative to the commercial sector has reduced its influence on the market. As a result, companies may choose to make fewer investments in their defense portfolio or abandon them altogether, particularly if their business can be sustained by commercial demand.

Historically, DOD has primarily allowed the structure and sustainment of the industrial base to be driven by market forces. At times, it has intervened when rising costs, decreased DOD procurements, or other

factors jeopardized a supplier's ability to remain financially viable. For example, in 2014, DOD's sole domestic source of leading-edge microelectronics exited the market. As we have previously testified, DOD relies heavily on leading-edge microelectronics as a key component in many weapon systems, yet it found its low-volume requirements were not enough to influence the commercial market.¹ The microelectronics market is dominated by the commercial sector that also uses these products in cellphones and other consumer electronics, medical equipment, and automobiles, among other things. Recognizing DOD's potential vulnerability to commercial market demand, DOD initiated efforts partnering with industry to consider alternative approaches to maintain access to microelectronics to meet its needs.

Concerns about the health of the defense industrial base have prompted action by the executive branch and Congress. For instance, in July 2017, the President issued an Executive Order instructing DOD to lead a government-wide assessment of the U.S. manufacturing capacity, defense industrial base, and supply chain resiliency and to provide recommendations to address any gaps that threaten the ability of the United States to manufacture or obtain goods and services critical to national security.² Congressional committees have identified various areas of concern about the industrial base including reliance on single sources of supply. Further, in the Fiscal Year 2017 National Defense Authorization Act, Congress required that DOD develop a plan to enhance the integration of the national technology and industrial base—that is, the technologies, personnel, administrative procedures and research and production facilities that supply defense equipment and services.³

You asked us to review DOD's effectiveness in identifying and mitigating risks to the industrial base. This report addresses (1) DOD's approach to identify industrial base risks and associated challenges, and (2) the industrial capabilities DOD has invested in and efforts to monitor the impact of its investment.

¹GAO, *Trusted Defense Microelectronics: Future Access and Capabilities Are Uncertain*, [GAO-16-185T](#) (Washington, D.C.: Oct 28, 2015).

²Exec. Order No. 13.806. 82 Fed. Reg. 34,597 (July 26, 2017).

³Pub. L. No. 114-328. § 881 (2016).

To assess DOD’s approach to identify industrial base risks and any associated challenges, we reviewed documents on industrial base assessments and interviewed officials from the office of Manufacturing and Industrial Base Policy (MIBP) and the Defense Contract Management Agency (DCMA). We also spoke with industrial base analysts and planners within the military departments and other DOD components such as the Missile Defense Agency and Defense Logistics Agency. We selected a non-generalizable sample of seven major defense acquisition programs to gain insight on program offices’ practices to meet the requirement to identify and assess industrial base risks as part of acquisition planning efforts. We selected these programs because they had entered system development or production after January 2015—the date of the most recent revision to DOD acquisition instruction that generally requires industrial base assessments as part of the acquisition decision-making process. Further, we selected the programs to get a representation of different industrial sectors and all military departments—the Air Force, Army, and Navy. Table 1 lists the selected acquisition programs included in our review.

Table 1: Selected DOD Acquisition Programs Reviewed by GAO

Military department	Program
Army	Common Infrared Countermeasure
Army	Joint Air-to-Ground Missile
Navy	Columbia Class Aircraft Carrier
Navy	Next Generation Jammer
Air Force	Military Global Positioning System User Equipment
Air Force	KC-46A Tanker Modernization
Joint program ^a	Joint Light Tactical Vehicle

Source: GAO analysis of Department of Defense (DOD) data. | GAO-18-435

^aThe program is being developed by the Army and Marine Corps, which is part of the Navy.

In addition, we identified MIBP’s past efforts to assess risks facing the industrial base. We also reviewed MIBP’s development plans for information systems containing supplier data on the industrial base and assessed it against DOD Instruction 5000.60 which calls for MIBP to maintain a supplier repository. As part of this effort, we also observed demonstrations of MIBP’s Business Intelligence and Analytics platform and the Defense Planning Guidance Data Input and Retrieval System, and DCMA’s Industrial Base Integrated Data System to gain insight about their functionality. To identify projects DOD has invested in that can help sustain or expand the defense manufacturing and industrial base capabilities, we interviewed officials and collected information from

department-wide investment programs: Defense Production Act Title III (DPA Title III), Industrial Base Analysis and Sustainment (IBAS), and the Office of Secretary of Defense Manufacturing Technology (OSD ManTech).⁴ These programs are administered by the MIBP office. Of the 90 projects that were active and received funding during fiscal years 2014 through 2017, we reviewed all 33 projects completed during this time frame to assess the investment programs' efforts to monitor the impact of its investment during and after project completion. We analyzed project documentation including interim and final progress reports, among others. Our findings cannot be used to make inferences about other risk mitigation projects that we did not review. We interviewed program officials from the three investment programs to discuss ongoing and planned efforts to monitor and assess investment impacts. We compared actions taken by the three investment programs against performance management guidance from the Office of Management and Budget,⁵ leading practices of results-oriented organizations that we have identified in our prior work,⁶ as well as federal standards for internal control.⁷ Appendix I contains additional detail on our objectives, scope, and methodology.

We conducted this performance audit from January 2017 to June 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that

⁴ The Defense-wide Manufacturing Science and Technology program consists of manufacturing institutes and a technology investment portfolio. For the purposes of this report, we refer to the technology investment portfolio as OSD ManTech.

⁵ OMB, *Strategic Plans, Annual Performance Plans, Performance Reviews, and Annual Program Performance Reports*, Circular No. A-11, Part 6 (Washington, D.C.: Aug. 1, 2017).

⁶ We have previously stated that performance measurement is an important management tool that can serve as leading practices for planning and implementing individual federal programs or initiatives. For example, see GAO, *Performance Measurement and Evaluation: Definitions and Relationships*, [GAO-11-646SP](#) (Washington, D.C.: May 2, 2011); *Managing for Results: Enhancing Agency Use of Performance Information for Management Decision Making*, [GAO-05-927](#) (Washington, D.C.: Sept. 9, 2005); and *Executive Guide: Effectively Implementing the Government Performance and Results Act*, [GAO/GGD-96-118](#) (Washington, D.C.: June 1, 1996).

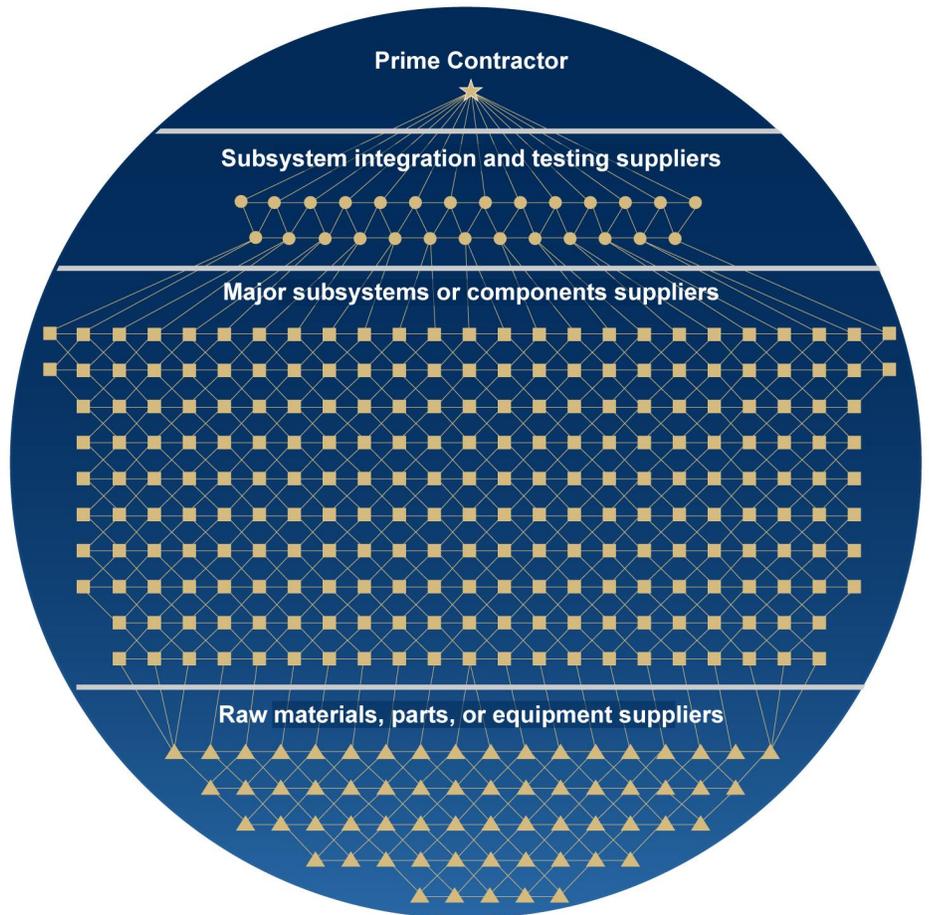
⁷ GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 10, 2014).

the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The U.S. defense industrial base is the combination of people, technology, institutions, technological know-how, and facilities used to design, develop, manufacture, and maintain the weapons needed to meet U.S. national security objectives. The base encompasses three broad components of the acquisition life cycle: research and development, production, and maintenance and repair—each of which includes public and private sector companies, employees, and facilities. The base is divided into several tiers: prime contractors, major subcontractors, and lower tiers that include suppliers of parts and raw materials. The prime contractor—with whom DOD directly contracts—is generally responsible for things such as integrating and delivering the end product and for selecting and managing the subcontractors that manufacture components or subsystems. These manufacturers might, in turn, work with another tier of companies that supply the raw materials and parts. Figure 1 depicts a notional supply chain for a ground vehicle showing the scale of suppliers—at different tiers—that may be involved in providing the major subsystems or components, parts, and raw materials necessary to provide the end-item.

Figure 1: Notional Illustration of a Ground Vehicle Supply Chain



Source: GAO analysis of Department of Defense supplier data. | GAO-18-435

Industrial Base Risks

The multi-tiered supply chain for a weapon program is vulnerable to disruptions at various stages throughout the acquisition life cycle that can impact DOD's ability to obtain products in the time, quantity, and quality that it needs. Supplier disruptions can range from a company going out of business to a diminishing workforce of specialized engineers. Such disruptions have the potential to interrupt access to one or more defense industrial capabilities that are central to designing, developing, producing, and sustaining weapon systems used by DOD. Defense industrial capabilities include the knowledge, skills, materials, facilities, manufacturing processes, equipment, and technologies—all of which are

critical to suppliers' ability to produce at the rate and quantity needed to maintain readiness. The loss of a capability can occur for a number of reasons, thus creating an industrial base risk when one or a combination of the following conditions described in table 2 is present.

Table 2: Examples of Industrial Base Risks That Could Impede DOD's Ability to Obtain Products at the Time, Quantity, and Quality Needed

Risk	Description
Financial Health of Suppliers	Financial instability caused, in part, by a decline in DOD or commercial sales could lead to a company going out of business or abandoning its defense portfolio.
Specialized Equipment or Skills	Loss of access to equipment or highly specialized scientific or engineering skills—potentially increasing costs or extending time needed to begin or restart production.
Production Capacity of Facility	Production rate at a facility may not be sufficient to produce at the quantity and time when needed to support DOD demand, thus, resulting in long wait times.
Foreign Dependence	Dependence on foreign sources of supply can be less desirable and disrupt supply due to export control restrictions, political instability, or other conditions.
Obsolete Items	Materials, parts or technologies can become obsolete if replaced by newer models or variants or the supplier has stopped production, resulting in manufacturing or maintenance delays.
Emergencies or Disasters	Natural or man-made disasters can disrupt operations at production facilities, thus delaying deliveries.
Single Source	Only one source may be available for reasons such as (1) no other alternative exists with the skills or equipment necessary to produce the raw material or component or (2) only one company has been qualified and it can be expensive and time consuming to qualify additional sources.

Source: GAO analysis of Department of Defense (DOD) information | GAO-18-435

Single Source Supply Issue for C-130J propellers

Single sources of supply—particularly for parts or materials in the lower-tiers of the supply chain—can pose an industrial base risk for DOD. For example, a fire in February 2015 destroyed a factory that was the single source of propellers for the C-130J aircraft, which provides tactical airlift in support of military and peacetime missions. The Air Force was able to obtain propellers from various stocks and the other military services and develop alternative sources of supply for the propellers, but in the absence of a successful mitigation effort, a disruption in the supply of propellers could have caused manufacturing and repair delays.

Source: Adapted from [GAO-17-768](#) | GAO-18-435

Industrial base risks can occur in any of the nine industrial sectors DOD has identified. Most sectors cut across all three military departments—Air Force, Army, and Navy, whereas a few sectors are unique to one military department for production requirements such as shipbuilding as shown in table 3. In addition, some sectors, such as munitions, are driven primarily by DOD’s buying power, whereas others have both a defense and commercial market.

Table 3: Department of Defense (DOD) Industrial Sectors

Industrial sector	Example	Market	Military department or DOD component
Aircraft	Fixed wing, vertical lift, unmanned aircraft	Defense and commercial	Air Force, Army, Navy
Electronics	Integrated circuits	Defense and commercial	Air Force, Army, Navy
Command, control, communications, and computers	Radio and computer systems that operate DOD’s various weapons	Defense and commercial	Air Force, Army, Navy, Missile Defense Agency
Ground vehicles	Tanks, armored personnel vehicles	Defense	Army
Materials	Specialty chemicals, composite, metals, alloys	Defense and commercial	Air Force, Army, Navy
Munitions and missiles	Tactical and strategic missiles, missile defense systems	Defense	Air Force, Army, Navy, Missile Defense Agency
Radar and electronic warfare	Radar and other equipment used to track potential threats and jam electronic equipment of adversaries	Defense	Air Force, Army, Navy, Missile Defense Agency
Space	Satellites, launch services, payloads, propulsion	Defense and commercial	Air Force, Missile Defense Agency, National Reconnaissance Office
Shipbuilding	Aircraft carriers, submarines, surface combatants, amphibious warfare, combat logistics, command and support vessels	Defense and commercial	Navy

Source: GAO analysis of DOD information. | GAO-18-435

Note: Additional DOD components such as the Defense Logistics Agency may have primary responsibility for procuring items within these sectors for sustainment purposes. In addition, other federal agencies such as the National Aeronautics and Space Administration may also procure items that align with these sectors.

Roles and Responsibilities to Identify, Assess, and Mitigate Industrial Base Risks

When an industrial base risk surfaces on an individual acquisition program, program managers are the first line of defense and are encouraged to resolve the issue that threatens access to an industrial capability for their respective program. In cases where more than one program office or military department may be affected, individual program office action may not be sufficient or appropriate to mitigate the risk. It then becomes the responsibility of the program manager to elevate the issue to their respective Program Executive Office that manages a portfolio of programs for a particular sector—for example, aircraft or missiles—to take the lead on coordinating mitigation. Depending on the number of programs affected, programs are also to alert the MIBP office, which falls under the Office of the Undersecretary of Defense for Acquisition and Sustainment.

MIBP is the department's focal point for issues affecting the defense industrial base. DOD's Instruction for Defense Industrial Capability Assessments—recently updated in December 2017—outlines MIBP's responsibilities, which include establishing policy and providing guidance on industrial base assessments. In addition, MIBP is required to maintain a repository of supplier data and assist military departments in assessing and preserving access to defense industrial capabilities.⁸ MIBP is to conduct analyses of risks affecting defense supply chains and provide information to decision makers, including required annual reports to Congress.

In its 2016 *Annual Industrial Capabilities Report to Congress*, DOD reported on the state of the industrial base for each sector including funding history and projections, supplier trends, key challenges, summary of risk assessments, and risk mitigation efforts.⁹ In its assessment, DOD reported that the aerospace and defense sectors as a whole are profitable at all tiers and the industrial base is financially healthy. However, it acknowledged there are some weaknesses, such as with suppliers who provide major subsystems in mostly defense-unique niche

⁸Department of Defense Instruction 5000.60, *Defense Industrial Base Assessments*, (Washington, D.C.: July 18, 2014, incorporating change 1. Dec. 4, 2017).

⁹Department of Defense, Manufacturing and Industrial Base Policy, *Annual Industrial Capabilities Report to Congress* (Washington, D.C.: June 13, 2017).

markets. As such, these suppliers tend to have less diversified portfolios and can be heavily reliant on DOD to sustain their businesses, according to the report.

While individual program offices and military departments are generally responsible for identifying risks within their own areas, MIBP officials stated that they coordinate and share information with relevant stakeholders for issues that affect multiple programs within or across the military departments. MIBP's coordination role includes participating in or leading various coordinating bodies within DOD or other federal departments. For example, MIBP leads the Joint Industrial Base Working Group, which shares industrial base information across DOD components and military departments, as outlined in the working group's charter. To support the working group, MIBP officials told us they conduct an annual data collection effort among the military departments and other DOD components to identify defense industrial base areas of risk and to learn about ongoing issues across the industrial base. In addition, MIBP officials noted they work closely with the Industrial Analysis Group within DCMA to collect and analyze data on industrial capabilities. Further, we reviewed documents that showed DCMA conducts its own assessments, upon request by program offices, to identify industrial base risks facing individual acquisition programs at various points in the program's life cycle and makes recommendations to program offices aimed at sustaining industrial capabilities.

Investment Programs Available to Sustain Defense Manufacturing and Industrial Capabilities

MIBP administers three investment programs that can be used to help sustain or expand manufacturing and industrial base capabilities—DPA Title III, IBAS, and OSD ManTech.¹⁰ Projects funded by each of the investment programs are identified from a variety of sources, including industry, DOD program offices or military departments, DOD research labs, or relevant industrial base groups within DOD, such as the Joint Industrial Base Working Group. Each program has a different focus, allowing DOD to tailor its investments.

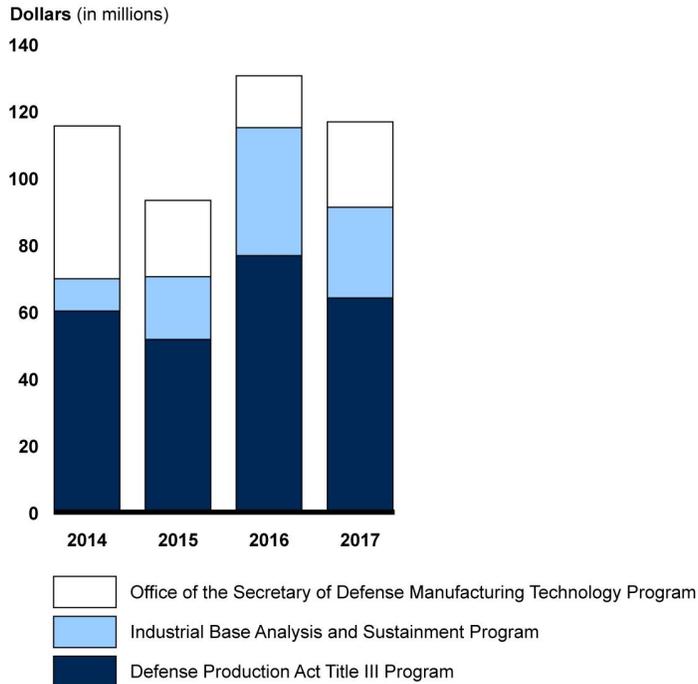
¹⁰DOD may also utilize other programs and activities to assist with industrial base risk mitigation, such as Committee on Foreign Investment in the United States, reviews of proposed acquisitions and mergers, Small Business Innovation Research program, Rapid Innovation Fund or the Defense Priorities and Allocation System.

- **DPA Title III:** among other things, the DPA Title III program enters into agreements to provide funding to help sustain production capabilities and capacities for materials considered essential to national defense. The program is designed to establish, expand, maintain, or restore domestic production capacity for critical components and technologies, as well as to develop industrial capacity to execute U.S. national security strategies. Before DPA Title III agreements can be entered into, the President generally must determine (1) an industrial resource, material, or critical technology item is essential to the national defense, (2) industry cannot reasonably be expected to provide the capability in a timely manner, and (3) providing DPA Title III funding is the most cost-effective, expedient, and practical alternative for meeting the need.
- **IBAS:** seeks to maintain or improve the health of essential parts of the defense industry by addressing critical capability shortfalls in the base, specifically capabilities that are critical to multiple military departments or DOD components and are at risk of being lost. In its 2016 *Annual Industrial Capabilities Report*, DOD noted that the goal of the IBAS program is not to sustain all capabilities indefinitely, but to avoid costs to stop and restart production when capabilities are likely to be needed in the foreseeable future.
- **OSD ManTech:** seeks to help develop advanced manufacturing processes, techniques, and equipment to develop, produce, and sustain weapon systems. The program was established to anticipate and respond to gaps that can impede warfighter capability. Funding from OSD ManTech is intended to lower acquisition and sustainment costs, improve manufacturing processes, and improve product quality for defense manufacturing.¹¹ While the OSD ManTech program was not designed to mitigate industrial base risks, its initiatives—which focus on anticipating and closing gaps in manufacturing capabilities—have the added benefit of helping to sustain a healthy and resilient industrial base. According to MIBP, defense acquisition programs rely on innovative manufacturing capabilities and an industrial base that can use these capabilities to deliver products to meet warfighter requirements.

¹¹In addition to the ManTech program administered by the Office of the Secretary of Defense, each military department, the Defense Logistics Agency, and the Missile Defense Agency have individual ManTech offices to focus on issues that are specific to their respective component and do not directly impact other components.

As shown in figure 2, funding for each investment program has varied over the past 4 years.

Figure 2: Funding for DOD’s Manufacturing and Industrial Base Policy’s Investment Programs, Fiscal Years 2014 through 2017



Source: GAO presentation of Department of Defense (DOD) budget data. | GAO-18-435

Various DOD Entities Identify Industrial Base Risks, but Challenges Limit Sharing and Analysis

DOD takes a dispersed approach to identify risks to the industrial base that draws on data from several DOD components and program offices. However, data and workforce challenges have prevented MIBP from fully harnessing this information to facilitate department-wide information sharing and analysis. Acquisition program offices and industrial base planners and analysts within the military departments and other DOD components routinely conduct a range of activities, including surveying industry and monitoring suppliers’ financial health. Since 2014, DOD instruction has called for MIBP to maintain a data repository that identifies

industrial base data gathered across DOD—such as copies of assessments and supplier data including lower tiers of the supply chain. Despite previous attempts to systematically collect and analyze supplier data, DOD does not currently have a repository due, in part, to ongoing challenges to access supplier data. These are similar challenges that DOD faced when developing a comparable system three decades ago. MIBP has reported to Congress they would like to be more proactive in their approach to identifying industrial base risks across DOD. To that end, MIBP is currently developing two data systems. MIBP officials told us these two systems could meet the requirement for a repository. MIBP officials acknowledged these ongoing challenges, but have not yet determined how to overcome them.

DOD Entities Employ Various Approaches to Gain Insight about Industrial Base Risks

MIBP Fragility and Criticality Factors

Fragility considers the state of current suppliers as well as the market composition including:

- Risk that current provider of the capability will go out of business or exit the market
- How much of the total sales for the existing supplier or facility results from DOD contracts
- Extent of dependence on foreign sources for the capability
- Number of available companies that provide the capability

Criticality factors that make a product or service difficult to replace include the degree to which:

- Alternatives are available relative to cost, time, and performance requirements
- Market demand for the capability is driven by commercial versus defense requirements
- Specialized skills, facilities, or equipment are needed and available to integrate, manufacture, or maintain the capability

- DOD would be affected in terms of time or cost needed to restore the capability if lost
- Defense-unique design knowledge is required to reproduce the capability, an alternative, or the next-generation design

Source: Adapted from Department of Defense information| GAO-18-435

Multiple offices across DOD—at the department, command, and program office level—play a role in assessing industrial base risks. These offices utilize various approaches to identify risks, including surveying industry, monitoring suppliers' financial health, and conducting on-site visits. DOD policy instructs MIBP to provide guidance to the military departments and defense components on assessing the industrial base. As a result, MIBP developed a methodology in 2014 to assess fragility and criticality relative to industrial base risks. Fragility focuses on factors that are likely to disrupt DOD's access to a particular product or service when needed, whereas criticality measures the likelihood that a capability will be difficult to replace if disrupted.

Beyond MIBP, program officials and industrial base planners and analysts across DOD components conduct studies of their respective suppliers using their own processes. For example, we found that the Army Materiel Command's Industrial Base Capabilities Division conducts an annual industrial base baseline assessment, using MIBP's fragility and criticality methodology. The assessment provides Army leadership with insight on the risks that could impede their suppliers' ability to sustain access to fragile and critical capabilities within the Army's portfolio, including ground vehicles, missiles, munitions, and aircraft, among other sectors. The Army draws on data about suppliers' financial health and manufacturing processes collected from program offices, industry surveys, and facility site visits to assign risk ratings and inform recommendations to address gaps. In addition, in 2014, the Army—according to its industrial base report—began incorporating economic analysis as part of their assessments based on primarily multi-year budget projections for procurement; research, development, testing and evaluation; as well as the financial health of its suppliers at the prime contractor level and lower-tier small- to medium-sized companies.

Other offices have taken their own approach to assess their respective industrial bases. For example, Naval Air Systems Command officials said they have developed a database that contains data on roughly 6,000 suppliers. These suppliers are at various tiers in the supply chain that supports Navy requirements. The Naval Air Systems Command supply chain lead said the database was developed by the command's cost analysis department which routinely collects supplier data from bills of materials to inform its pricing analysis during contract negotiations. Navy officials said they also use these data for industrial base analysis. For example, the supply chain lead said that when the Naval Air Systems Command's cost analysis department became aware that one of its suppliers of aircraft components was at risk of going out of business, the

Bill of Materials

When required, contractors provide a bill of materials that allows the government to track parts and associated suppliers—often at lower tiers of the supply chain—to help plan for maintenance of weapon systems after production. Bill of materials we reviewed included:

- Supplier's name and address
- Supplier's tier level
- Part provided
- Part quantities

When this information is consolidated from programs across DOD, it can allow for identification of common suppliers and DOD's overall demand from the supplier.

Source: GAO analysis of Department of Defense (DOD) information | GAO-18-435

cost analysis department used the database to identify 12 Navy programs that relied on the supplier and alerted the program offices about the potential risk.

Program offices also have a role in assessing risks that could impede their access to capabilities that are central to fulfilling weapon system requirements. Since 1992, DOD has been statutorily required to factor industrial base considerations into its acquisition planning for major defense acquisition programs.¹² DOD's most recent instruction implementing this provision, requires that major defense acquisition programs summarize the results of their industrial base analysis in their acquisition strategies at certain acquisition milestones.¹³ DOD instruction does not provide specific instructions for how these assessments should be completed, thus providing program offices with flexibility to tailor the assessment to meet their individual needs. We found that the seven program offices we spoke with during the course of our work varied in their approaches to complete these assessments. For example:

- We found that, to facilitate its milestone industrial capabilities assessment, the Army's Joint Air-to-Ground Missile program office collected information from industry as part of its process to solicit potential contractors. According to the Army's industrial capabilities assessment, the contract solicitation for system development for the missile program required that prospective contractors provide information on critical sub-tier suppliers. Specifically, the assessment stated that the solicitation required the prime contractor and each of its critical subcontractors to complete a survey to provide information on financial health, production capacity of the facility, and specialized equipment or skills at the facility that are central to producing items for the missile, among other things. Using this information, the program office identified key suppliers, their capabilities, and their financial viability to meet the program's needs at the time, quality, and quantity needed. In addition, the program was able to identify quality issues with parts manufactured by three different subcontractors and identified planned actions to mitigate them.
- Other program offices we spoke with relied on their industrial base planners and analysts to conduct these milestone assessments. For

¹²10 USC § 2440.

¹³Department of Defense Instruction 5000.02, *Operation of the Defense Acquisition System*, (Washington, D.C.: incorporating change 3. August 10, 2017); 10 U.S.C. § 2440.

example, the Military Global Positioning System User Equipment program—led by the Air Force—collaborated with its industrial base planners in the Space and Missile Systems Center to identify industrial base risks as the program entered system development, according to program officials. The Air Force’s Space and Missile Systems Center conducted industrial base assessments relying, in part, on a federally funded research and development center to assist with data collection and analysis. This research center collected and analyzed information on technologies that are critical—those that are essential to requirements within the Space and Missile Systems Center’s portfolio. Information assessed on these technologies included available suppliers of the technologies, substitute technologies, and the impact on DOD if the capability were to become unavailable. We also found that the Air Force Space and Missile Systems Center uses the results of this analysis to develop a prioritized list of industrial base risks for its critical technologies at all tiers of the supply chain, which is used to develop mitigation plans for the highest-priority risks.

- We found that some acquisition program offices enlisted assistance from the Industrial Analysis Group within DCMA to conduct industrial base assessments for acquisition milestone decisions. For example, one program office in our review, the Navy’s Next Generation Jammer program, relied on DMCA to conduct its industrial capabilities assessment as the program progressed from design to system development. In its report summarizing the assessment, DMCA described its standardized methodology, which includes administering voluntary industry surveys. DCMA uses surveys to collect data that are not readily available to DOD but yet are necessary for robust assessment. Our review of DCMA’s surveys and assessments showed that they collect information on facilities where defense items are manufactured and assembled. In particular, DCMA collects information on the financial stability of individual production facilities, current manufacturing equipment processes, DOD customers who obtain goods from a facility; and critical technologies, capabilities, or skills that are present at a facility. In addition, officials from DCMA’s Industrial Analysis Group said they are able to gather additional facility insights from DCMA officials who work on-site to monitor contractors’ performance. Using this methodology, DCMA’s assessment identified areas for monitoring by the Next Generation Jammer program office. Specifically, DCMA found a number of sole-source suppliers for the program that could pose a risk to the program’s schedule or costs if these suppliers were to become unavailable to supply goods to the program.

DCMA's Industrial Analysis Group officials said they have a database that contains information DCMA has gathered over more than 20 years. According to DCMA officials, the database contains information for about 70 percent of DOD's major defense acquisition programs, including sub-tier suppliers, unique capabilities, and the minimum monthly production rate needed to sustain an existing capability. Based on our observations during demonstrations of the database, we noted that the information available in the database enables DCMA to illustrate the relationship of parts, components, and materials for a given end-item produced by prime contractors, subcontractors, and suppliers.

Past Efforts to Collect Supplier Data to Identify Risks Have Been Unsuccessful

As noted above, multiple DOD entities have their own processes to assess risks within their respective domains. In contrast, MIBP's focus is to determine the extent to which risks impact more than one program or military department. In addition, DOD instruction, issued in July 2014 and revised in December 2017, requires MIBP to create and maintain a defense industrial base data repository. At a minimum, the repository is to enable DOD components access to existing information across the department that is necessary to conduct an industrial base assessment.¹⁴

MIBP has tried to implement a system to collect and analyze supplier data, but each attempt has been discontinued for various reasons. In 2011, DOD launched the Sector-by-Sector, Tier-by-Tier initiative that was intended to gain insight into all tiers of the supply chain by surveying industry to collect information from prime contractors and lower-tier suppliers to map DOD's supplier base. MIBP planned to use the data collected to inform future assessments and decisions about how to allocate funding to mitigate supplier risks. MIBP officials said they were able to use the data collected as part of this initiative to identify industrial base risks and request funding for mitigation efforts, but said it abandoned the effort because it lacked the analytical framework and tools needed to process the large volume of data. In addition, MIBP officials told us that this initiative informed the development of the fragility and criticality methodology used to assess at-risk capabilities.

¹⁴Department of Defense Instruction 5000.60, *Defense Industrial Base Assessments*, (Washington, D.C.: July 18, 2014, incorporating change 1, Dec. 4, 2017).

In 2013, MIBP launched the Defense Industrial Base e-repository in collaboration with the Army to store summary narratives of industrial base assessments completed by the military components and program offices that could then be shared across the department. However, according to MIBP officials, the data warehouse did not capture supplier data that could be used for analysis to determine how widespread the impact of a risk may be. For example, the data warehouse did not include information about the extent of DOD's demand for the capability. MIBP officials said they stopped updating the data warehouse shortly after it launched because they did not have the resources necessary to add information in the data warehouse to assess the industrial base.

Current Efforts to Improve Supplier Data Collection and Analysis Face Challenges As Well

More recently, MIBP initiated two data systems aimed at improving collection and analysis of supplier data—the Business Intelligence and Analytics platform and Defense Planning Guidance Data Input and Retrieval System.¹⁵ In 2015, MIBP began the development of the Business Intelligence and Analytics tool, a web-based platform with analytical capability intended to capture data on lower tiers of the supply chain, among other things.¹⁶ MIBP envisions that these data can then be used to enhance visibility into the interdependencies among DOD's suppliers and the acquisition programs that rely on them. MIBP officials indicated plans to populate the analytics tool using commercially available financial data sources and federal data systems. In addition, MIBP officials stated their plans to use the data to identify domestic and global trends, such as mergers and acquisitions that can have implications for the industrial base. Further, in fiscal year 2016, MIBP developed the Defense Planning Guidance Data Input and Retrieval System, a collaborative data system for military components to report risks they have identified to MIBP as part of an annual data call. The data input

¹⁵ For the purposes of this report, we collectively refer to the Business Intelligence and Analytics platform and the Defense Planning Guidance Data Input and Retrieval System as data systems, which are designed to collect, maintain, and share data, among other things.

¹⁶ MIBP uses the terms business intelligence and analytics platform and DIBnow interchangeably to describe its defense industrial base analytics data system. For the purposes of our report, we use the term business intelligence and analytics platform.

system is intended to help standardize data submissions and facilitate data sharing across the department and other government agencies.¹⁷

MIBP officials said that these data systems could meet DOD's requirement to maintain a supplier data repository, which first went into effect in 2014. Moreover, in its annual reports to Congress, MIBP has highlighted these data systems as instrumental to its goal of taking a more data-driven approach to proactively identify industrial base risks across DOD rather than wait for program offices or other DOD entities to elevate concerns to MIBP. However, we identified various concerns with MIBP's plans for its data systems that indicate these systems may not fully meet DOD's requirement for a department-wide repository or MIBP's goal of taking a more proactive approach. We found that MIBP's development plans for these two data systems do not fully address ongoing challenges regarding (1) the lack of information on lower-tier suppliers, and (2) the right mix of personnel needed to access business-sensitive information that is central to MIBP's goal of predictive analysis.

Limited Supplier Data at Lower Tiers

We found that the two data systems as currently conceived, do not fully meet the repository requirement called for in DOD instruction to centrally identify existing supplier data. Specifically, the data systems are limited in their capacity to help MIBP achieve its goal to better understand the interdependencies in the lower tiers of the supplier base. In its annual industrial capabilities reports, MIBP has reported the need to enhance its visibility into the lower tier suppliers, whose business portfolios can be less diversified, making them more reliant on DOD to sustain

¹⁷ Other federal agencies such as the Department of Commerce also contribute to analysis of the defense industrial base.

operations.¹⁸ The lack of insight into lower tiers of the supply chain has been a long-standing issue which we highlighted as far back as 1989.¹⁹

MIBP officials told us that the Business Intelligence and Analytics platform is being designed to track financial health indicators for DOD suppliers using commercial sources such as Thomson Reuters, which provide financial health indicators on publicly traded companies. Initial development plans for this analytical capability focus heavily on integrating commercial financial data with contractor data from federal data sources. For example, MIBP is drawing on the Federal Procurement Data System-Next Generation (FPDS-NG) to capture information on contracts awarded to DOD prime contractors.²⁰ MIBP also plans to have the Business Intelligence and Analytics platform draw on the System for Award Management, which contains contractors registered to compete for prime contracts with the federal government.²¹

We identified a number of challenges that could impact MIBP's plans to draw on these federal data sources to populate its new analytics tool. Specifically, contractor data in FPDS-NG and the System for Award Management are limited and do not cover all tiers of the supply chain. FPDS-NG includes data on contractors with a direct contractual relationship with DOD and would not include lower-tier supplier that do not have a direct contractual relationship with DOD. In some cases, the System for Award Management contains information on suppliers that do not have a direct contractual relationship with DOD, but the system does not allow DOD to trace these suppliers to the specific programs that may

¹⁸Department of Defense, Office of the Deputy Assistant Secretary of Defense for Manufacturing and Industrial Base Policy, *Report to Congress Annual Industrial Capabilities Fiscal Year 2016* (Washington, D.C.: March 2017), Department of Defense, Office of the Deputy Assistant Secretary of Defense for Manufacturing and Industrial Base Policy, *Report to Congress Annual Industrial Capabilities Fiscal Year 2015* (Washington, D.C.: September 2016), Department of Defense, Office of the Deputy Assistant Secretary of Defense for Manufacturing and Industrial Base Policy, *Report to Congress Annual Industrial Capabilities Fiscal Year 2014* (Washington, D.C.: September 2016)

¹⁹GAO, *Industrial Base: Adequacy of Information on the U.S. Defense Industrial Base*, [GAO/NSIAD-90-48](#) (Washington, D.C.: Nov. 15, 1989).

²⁰The Federal Procurement Data System-Next Generation captures procurement data on contracts awarded by the federal government. It is maintained by the General Services Administration and is accessible at www.fpds.gov.

²¹The System for Award Management is maintained by the General Services Administration and is accessible at www.sam.gov. The system also includes information on specific facilities of contractors, among other things.

rely on the supplier. As a result, these two federal government databases do not provide MIBP the level of insight it needs about the subcontractors—typically, suppliers at the lower tiers—that do not have direct contracts with DOD. MIBP officials acknowledged these limitations and told us they plan to incorporate sub-tier supplier data from other sources, such as the Federal Funding Accountability and Transparency Act Subaward Reporting System, which is intended to give insight into first-tier subcontracting.²² However, even the addition of this system may not fully resolve this issue because we have previously reported that this system identifies only a limited number of sub-contractors for each prime contract.²³

Similarly, MIBP officials said the Defense Planning Guidance Data Input and Retrieval system is not intended to have an analytical capability that would provide MIBP with the information necessary to determine the extent to which an industrial base risk impacts multiple weapon programs. Rather, the data input system is designed for program offices and military departments to report risks to MIBP. While the information reported by an individual program office includes an identification of sub-tier suppliers that may be at risk, the data input system does not capture information on the extent to which these at-risk sub-tier suppliers provide capabilities to other weapon programs. MIBP officials acknowledged these shortcomings but explained that, ideally, they would take information reported in this data input system and use the Business Intelligence and Analytics platform to further their analysis of the risk. However, this plan is contingent on the ability to incorporate sub-tier supplier data in the Business Intelligence and Analytics platform which, as discussed above, may not be easily resolved.

In addition, MIBP's development plans for its two data systems do not include utilizing other existing data on lower-tier suppliers that is already amassed by acquisition program offices and industrial base planners across DOD. As described earlier in this report, these entities routinely collect information on lower-tier suppliers as part of normal operations to meet existing DOD requirements at various stages of the acquisition

²²The Federal Funding Accountability and Transparency Act Subaward Reporting System was created in 2010 for prime contractors to report subcontract information for first-tier subcontractors.

²³GAO, *Federal Subcontracting: Linking Small Business Subcontractors to Prime Contracts Is Not Feasible Using Current Systems*, [GAO-15-116](#) (Washington, D.C.: Dec. 11, 2014).

process. MIBP officials acknowledge the supplier data collected as part of milestone assessments can be useful but explained that each program office collects different information and in varying formats. MIBP officials noted that these different formats make it difficult for them to incorporate the data in the Business Intelligence and Analytics platform. Further, MIBP officials noted they are reluctant to impose additional requirements on program offices that would standardize the data to be collected and specify a uniform format. Nonetheless, these data can be a rich source of quality information that could potentially provide MIBP with greater visibility into the lower-tier supply chain in addition to MIBP's existing plans to rely on federal data systems. *Standards for Internal Control in the Federal Government* call for agency leaders to use quality information to achieve program objectives.²⁴ MIBP's ability to meet the repository requirement to enable access to existing supplier data depends on leveraging quality information from sources across the department. Without ensuring it obtains quality information from all potential sources, it again risks investing resources to develop data systems that may not have the data needed to achieve its objective, especially about interdependencies among lower-tier suppliers.

Proprietary Data Challenges

MIBP's current approach to developing its two data systems limits its ability to include supplier data such as financial health indicators that are considered business-sensitive proprietary. This is because MIBP is relying extensively on contract support staff to augment its workforce. MIBP officials said they plan to incorporate business-sensitive proprietary data into the data tools to help facilitate the objective of predictive analysis, but currently are limited in doing so because the Trade Secrets Act prohibits government employees from disclosing trade secrets and other confidential information.²⁵ As a result, MIBP officials said they have determined that they cannot provide contractors with access to business-sensitive proprietary data. Further, MIBP officials said because both data systems are being developed by contractor personnel and contractors also support industrial base analysis, they are limited in the business-sensitive proprietary data that the systems can contain. For example, MIBP has not been able to fully incorporate the supplier data from existing resources such as DCMA's database into the Business

²⁴[GAO-14-704G](#).

²⁵18 U.S.C. § 1905.

Intelligence and Analytics platform and Defense Planning Guidance Input and Retrieval system, because according to MIBP officials, contractors would not be allowed to access the business-sensitive proprietary data. Therefore, it will be difficult for MIBP to maximize the benefit of the vast amounts of supplier data that already exist across the department for inclusion in its data systems due to MIBP's concern related to the disclosure of business-sensitive proprietary supplier data.

Unlike MIBP, DCMA's Industrial Analysis Group officials noted that its staff are federal employees and therefore may access business-sensitive proprietary supplier data without raising the concerns described above. MIBP officials said they have considered using non-disclosure agreements as one option to allow support contractors to view proprietary data but ultimately determined that they would need thousands of agreements, one for each supplier that MIBP had data on, which was not feasible. Without being able to consolidate and share business-sensitive proprietary data across the department, MIBP's current plan is to reduce raw data into summary narratives when sharing them with contractors and others in the department. Summary narratives are informative up to a point, but only provide a broad overview of the risks facing the industrial base. For example, the narratives may state that a particular sector faces risks because the domestic supplier faces competition from a foreign source. However, the narrative will not be able to identify the specific domestic suppliers that are affected by foreign competition. This additional information would provide MIBP and other offices that did not conduct the analysis with specific actionable information on suppliers that may be at risk. If business-sensitive proprietary data are not included in the data tools MIBP is developing, DOD will have limited insights beyond its current practices.

MIBP officials acknowledged the benefit of having a workforce mix that uses federal personnel to supplement its reliance on contractor staff who have limited access to business-sensitive proprietary data. While officials perceive this to be a viable option, they have not yet made a decision on how best to address this issue. *Standards for Internal Control in the Federal Government* call for agency management to ensure they have personnel with the requisite capabilities needed to achieve the agency's objectives.²⁶ To get the full benefit of its new data systems to proactively identify industrial base risks, MIBP will need to draw on supplier data,

²⁶[GAO-14-704G](#).

which is generally business-sensitive proprietary. However, access to business-sensitive proprietary information for industrial base analysis is limited to government personnel. By relying more heavily on contractors to develop and implement its new data systems, MIBP does not have the assurance that the systems it is developing will meet the requirements called for in DOD's instruction. As MIBP moves forward with development plans for its two data systems, it will be important to ensure that it has the appropriate workforce mix of government personnel and contractors to ensure that it can to achieve its objective of developing data systems with the information needed to conduct industrial base analysis.

MIBP Invested in Projects to Preserve or Establish Industrial Base Capabilities, and Is Considering Strategies to Gain Insight into Long-Term Impacts

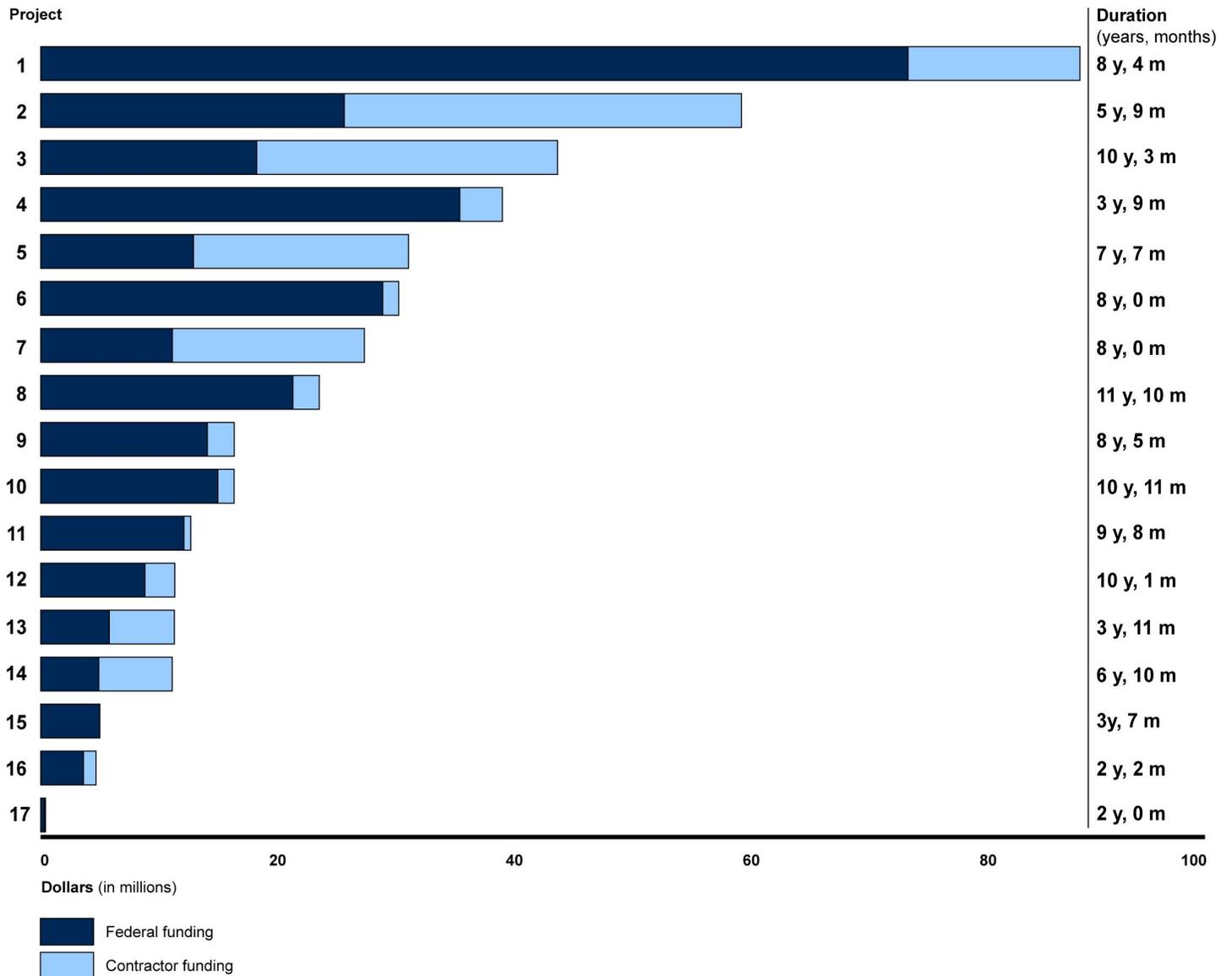
For the 33 projects we reviewed that were completed between fiscal years 2014 through 2017, we found that DPA Title III, IBAS, and OSD ManTech—MIBP's department-wide investment programs available to mitigate industrial base risks—invested in projects to preserve existing industrial capabilities or establish new capabilities that did not previously exist. For these projects, we found that the investment programs conducted periodic monitoring reviews that tracked progress toward technical or programmatic objectives throughout the project up to completion. However, the programs did not track additional information after the projects were completed to assess DOD's continued access to the capabilities after funding for the project ended. MIBP officials noted that assessing DOD's continued access to these capabilities after project completion is challenging because DOD is limited in its ability to obtain key information. MIBP program officials are in the early stages of exploring potential strategies—contracting approaches and other program management practices—to improve visibility into the long-term benefits of its investments and obtain information needed to better assess DOD's long-term access to its investments after projects have been completed. Because these efforts are ongoing, it is too soon to evaluate the effectiveness of these strategies.

Investment Projects Sought to Preserve or Establish Industrial Base Capabilities

In our review of 33 projects that were completed between fiscal years 2014 through 2017, we found that MIBP's investment programs selected projects to either (1) maintain existing industrial base capabilities or suppliers, or (2) establish new domestic sources or capabilities to meet DOD's needs. These projects cut across all military departments.

We reviewed 17 DPA Title III projects that ranged in value from \$400,000 to over \$87 million. All but one of the projects included a mix of funding provided by DPA Title III and the contractor that provides the capability. The funding provided by the contractor ranged from 4 percent to 59 percent of the total project value. These projects varied in length from 2 to nearly 12 years and at least seven of the 17 projects were congressionally directed. Figure 3 highlights the funding levels and duration of projects we reviewed.

Figure 3: Values and Durations of Selected Defense Production Act Title III Projects



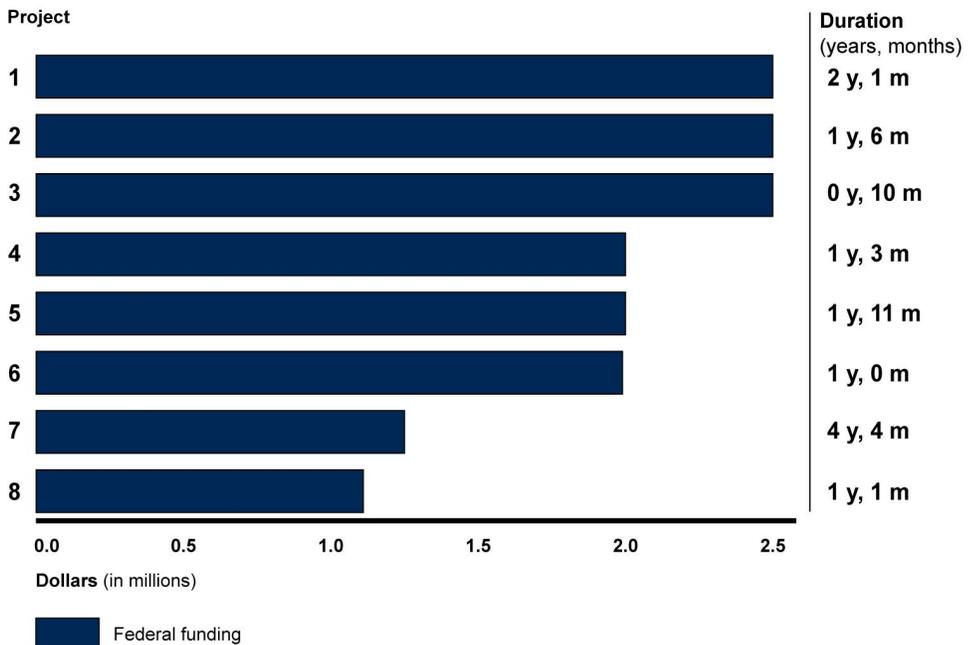
Source: GAO analysis of Department of Defense project information. | GAO-18-435

DPA Title III primarily invested in these 17 projects to establish new domestic sources for materials considered essential to national defense to meet DOD’s needs—that is, the quality, quantity and at the time when needed. For example, DPA Title III awarded a project in 2006 to establish a domestic production facility for an absorbent material that filtered air on submarines. DPA Title III provided \$14 million over 8 years to help

establish a new manufacturing process for the absorbent material. While MIBP is making these investments via the DPA Title III program, we found that these projects also sought to help the supplier achieve financial stability and eventually become economically viable so that DOD’s investment is not needed indefinitely.

The eight IBAS projects that we reviewed ranged in value from \$1.1 million to \$2.5 million, and lasted from 10 months to over 4 years, as shown in figure 4.

Figure 4: Values and Durations of Selected Industrial Base Analysis and Sustainment Projects



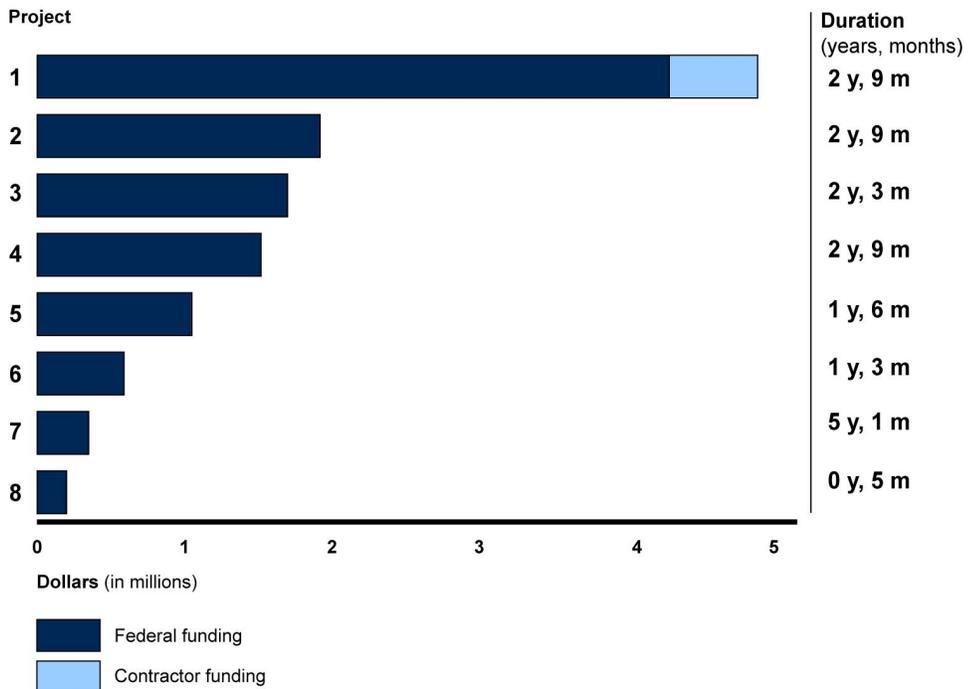
Source: GAO analysis of Department of Defense project information. | GAO-18-435

IBAS primarily invested in projects to preserve existing suppliers and capabilities. In particular, these projects focused on maintaining workforce capabilities such as engineers at a supplier’s production facility whose specialized skills were at risk of atrophying due to a reduction in DOD’s demand. For example, IBAS funded a project in 2015 to support the sole domestic supplier of a specialized semiconductor component. Although there was a projected future need for the component, the semiconductor supplier faced financial hardship and was at risk of going out of business. As a result, the supplier was at risk of losing the critical semiconductor design and engineering skills and knowledge necessary to produce these

items without additional investment to maintain production, preserve specialized skills and knowledge, and allow the supplier to diversify its product offerings. We found that IBAS provided nearly \$2 million to support the production of new capabilities and fund equipment upgrades, based on its finding that it would have proved more costly to stop and restart production and retrain workers.

For the eight OSD ManTech projects we reviewed, the total value ranged from nearly \$200,000 to nearly \$5 million, and lasted from 5 months to over 5 years, as shown in figure 5.

Figure 5: Values and Durations of Selected Office of the Secretary of Defense Manufacturing Technology Projects



Source: GAO analysis of Department of Defense project information. | GAO-18-435

OSD ManTech invested in projects focused on establishing new capabilities by developing lower-cost or more efficient manufacturing processes for DOD weapon systems. For example, in 2012, OSD ManTech awarded a 3-year project, and ultimately obligated \$1.5 million, to test new processes for filling exterior seams on aircraft. The existing process was labor intensive and could not be completed at DOD’s required production rate.

The 33 projects that we reviewed across the three investment programs primarily focused on funding projects at lower-tier suppliers that had the skills, knowledge, or equipment to produce parts or materials that would be integrated into a larger weapon system. We found that the three investment programs used different contracting approaches to award mitigation projects to these sub-tier suppliers. For example, for the projects in our sample, DPA Title III always awarded a contract directly to the sub-tier supplier with the target capability. This approach allowed DPA Title III to set specific requirements for the supplier, such as notifying DPA Title III officials of foreign investments that could impede DOD's access to the supplier's capabilities.

For the projects we reviewed, IBAS and OSD ManTech primarily modified existing contracts with prime contractors, who then awarded subcontracts to the suppliers with the target capabilities. For example, IBAS funded a project by modifying an existing missile contract to establish a propellant production line at a sub-tier supplier in order to ensure a domestic source instead of the foreign source that DOD had previously depended on for 10 years. Program officials said that modifying existing contracts allowed them to begin projects more quickly but limited the ability of the IBAS and OSD ManTech program officials to establish specific project requirements—like DPA Title III's foreign investment notification requirement previously mentioned—in part because the programs did not have a direct contractual relationship with the sub-tier supplier.

Measuring DOD’s Continued Access to Investments Is Challenging but MIBP Is Adopting Practices to Alleviate Data Gaps

DPA Title III, IBAS, and OSD ManTech conduct monitoring of mitigation projects through periodic management reviews. For the 33 projects we reviewed, these periodic reviews included an assessment of input, output, or outcome measures called for by leading performance management practices.²⁷ Table 4 includes a summary of the types of measures used by the three investment programs.

Table 4: Examples of Measures Used on Projects funded by DOD’s Investment Programs

Measure	Definition	Example of measures used
Input	Measures the consumption of resources such as time or money spent	A project measured the extent to which more than 90 percent of funds were obligated 6 months before the project completion date.
Output	Measures the level of product or activity that will be provided over a specified period of time	A project measured the extent to which new equipment achieved the target of producing at least 12 million additional pounds of metal per year. In another instance, a project measured the extent to which a 30 percent reduction in manufacturing defects was achieved.
Outcome	Measures the extent to which projects achieve intended outcomes to determine program effectiveness and assesses the net effect of a program.	Projects measured reduction in unit cost, sales volume or manufacturing time based on production improvements. For example, a project measured the extent to which manufacturing time for an item was reduced from 4 hours to 1 hour. In another instance, a project measured the number of units sold to new customers against the specified target of selling 1,000 units per year.

Source: GAO analysis of leading performance management practices and Department of Defense (DOD) project documentation. | GAO-18-435

The measures used by the three investment programs generally allowed the investment programs to assess the extent to which DOD had access to the capability at project completion. Based on these measures, 31 of the 33 projects met or partially met the technical parameters at project conclusion. Additionally, MIBP officials indicated that monitoring practices did not extend beyond project conclusion to include an assessment of DOD’s continued access to the funded capability or the cost savings realized as a result of DOD’s investment. MIBP officials said that measuring long term access is challenging because (1) DPA Title III and IBAS have difficulty accessing key information—such as supplier’s financial data—that they would need for continued monitoring after project

²⁷OMB Circular A-11, [GAO-11-646SP](#), and [GAO-14-704G](#).

completion, and (2) because return on investment is difficult to measure for OSD ManTech as savings may be realized over long periods of time after project completion. However, MIBP is in the process of undertaking initiatives to gather more information about projects after conclusion and alleviate gaps in their data about the projects' long term-results. Therefore, we are not making recommendations for the three investment programs regarding data collected after project completion at this time. Below is additional information about the steps that the programs are taking to address the difficulties in measuring long-term impacts.

DPA Title III and IBAS Programs Are Initiating Efforts to Gain Insight into Suppliers' Continued Viability after Project Completion

MIBP's investment program officials said that post-project completion monitoring is challenging; however, they are taking steps to identify options to do so. Currently, the investment programs do not have access to sub-tier supplier information that would provide insight about the supplier's long-term viability after DOD funding has ended. Of the 25 DPA Title III and IBAS projects that we reviewed, 23 projects sought to either establish economically viable suppliers or maintain an existing suppliers to meet DOD's needs. According to officials, in order to determine DOD's continued access to the supplier's capabilities after project completion, MIBP would need information about the volume of DOD or commercial sales that would indicate financial stability, production, and workforce capacity to meet DOD's needs. The programs do not currently collect these data, which are not publicly available and officials told us that suppliers have little incentive to provide such information to DOD after contract completion. For example:

- IBAS invested nearly \$4.5 million in a nearly 3-year project that began in 2014 to support DOD's two suppliers of a specific technology used to provide surveillance, tracking, and targeting information for national missile defense, among other capabilities. Our review of project documents revealed that DOD's immediate demand for the technology was delayed, causing a gap in production between DOD's current and future projected demand for the technology. Without an ongoing demand, we found that the suppliers were at risk of losing the technical skills necessary to produce the technology. The IBAS project was intended to bridge the gap by maintaining two sources of this technology during the delay and thereafter. During the performance of this project, IBAS tracked input measures of the rate at which DOD's funding was obligated and the project's progress against its schedule. At project conclusion, the two suppliers

completed final reports, which noted that the IBAS funding sustained DOD's access to the technology from each domestic source during the project. One supplier reported at project completion that it had won the DOD contract to develop the next generation of the technology. In its final report, the second supplier stated that IBAS funding bridged a production gap, but its report did not address whether it would continue to produce this technology for DOD after project completion. As the contract for the project did not require continued reporting from the second supplier, the extent to which DOD was able to maintain a viable second source after project completion is unknown.

- In 2005, DPA Title III invested in a 10-year, \$12 million project to establish a domestic production facility for miniature, portable refrigerant compressors for use in vehicles and aircraft. During the performance of the project, DPA Title III established and tracked various input, output, and outcome measures of technical and economic viability. These included output measures for demonstrated production capacity of a specific number of units per year in the new facility constructed for the project as well as outcome measures for reduction in the cost to produce each compressor, and the level of compressor sales per year needed to break even independent of DPA Title III funding once the project ends, among other things. The final performance review for this project in May 2015 showed that the supplier achieved its performance objectives and noted that the supplier had potential future business prospects. DPA Title III was not able to collect information to monitor the extent to which the company was able to remain financially viable independent of DPA Title III funding after project completion.

Officials told us that finding an enforcement mechanism for suppliers to provide additional information is difficult because contractors would have little incentive to do so after project completion. While not required, MIBP officials noted that monitoring of suppliers' financial health after project completion are beneficial in helping ensure long term access to the investment. Specifically, tracking this type of information assists MIBP with its stated objective of being more proactive in its efforts to identify and mitigate industrial base risks. As such, both IBAS and DPA Title III program officials said that they are exploring options to improve project monitoring during and after project completion to help ensure DOD's long term access to its investment. Specifically, DPA Title III and IBAS are exploring options such as the addition of a contract provision that would require suppliers receiving funding from the investment programs to

provide DOD with information on the suppliers' financial condition and DOD-related purchases after project completion.

In light of ongoing efforts by the DPA Title III and IBAS programs to explore contracting strategies that would provide them access to information to assess long-term impacts of investments made to ensure DOD continued access to at-risk capabilities, we are not making a recommendation at this time. It is too early to evaluate the effectiveness of these strategies; however, we believe that when fully implemented, these strategies could better position DPA Title III and IBAS programs to gather additional information on their investment impact on the industrial base.

OSD ManTech Has Taken Steps to Demonstrate Return on Investment

The objective of the OSD ManTech program is to develop manufacturing technologies or processes that reduce the acquisition or sustainment costs of weapon systems. To measure the effectiveness of the projects in our review, OSD ManTech generally established and monitored input, output, and outcome technical performance parameters, such as obligation rates and transition to weapon systems. In addition, OSD ManTech developed estimates for reductions in acquisition or sustainment costs. However, for the projects that we reviewed, we found that OSD ManTech often did not assess actual cost savings achieved by projects. Therefore, OSD ManTech has limited insight into the extent to which its projects met its core program objective.

For example, in 2012, OSD ManTech initiated a project to mature the existing manufacturing process for windows on military vehicles and aircrafts. The prior process could not meet DOD's production timelines, and produced a high volume of flawed windows that could not be used. OSD ManTech provided nearly \$2 million over almost 3 years to test and implement new manufacturing processes to increase the production rate and decrease flaws at a reduced cost. Over the duration of this project, OSD ManTech tracked technical measures such as the increased speed with which a protective window material for military vehicles and aircraft could be produced, the decrease in the number of flaws in the windows produced, and the increase in the thickness of the windows, among other things. OSD ManTech estimated a return on investment for this project based on potential unit cost savings the new technology would provide for a fleet of aircraft. The technology was ultimately transitioned to pilot production on the F-35 aircraft, but final project documents repeated the

estimated return on investment rather than including an actual acquisition or sustainment cost saving achieved. Although the total number of aircraft procured with the funded technology is not known at the end of the project, an assessment of the cost savings each unit realized from this project would provide information on the impact of OSD ManTech's investment in this technology, linked to the overall program goal of reducing acquisition or sustainment costs through the use of new technologies.

OSD ManTech officials explained it can be difficult to determine the achieved return on investment at a project's conclusion in part because it will be achieved over the acquisition life cycle of production and sustainment of weapon systems that utilizes the technology developed by the program. The officials said they have considered requiring contractors to report on the extent to which technologies developed with ManTech funding are used by DOD and commercial markets after project completion. But similar to DPA Title III and IBAS, there is little incentive for contractors to provide such information when they are not performing under a contract. Instead, to improve internal reporting on project outcomes, OSD ManTech has developed a new reporting requirement that seeks to capture and communicate the impact of OSD ManTech projects when they are completed. This new requirement calls for OSD ManTech project managers to report on the expected benefits to DOD, the financial return on investment, and the implementation of the technology on a DOD weapon system. In light of efforts by the OSD ManTech program to gather information on the extent to which cost savings have been achieved to demonstrate long-term impacts of its investments, we are not making any recommendations at this time.

Conclusions

As the defense industrial base evolves in response to an already globalized supply chain, DOD must adjust to the fact that it is no longer the dominant player in all markets. In this ever-changing environment, MIBP, and DOD as a whole, is tasked with the difficult mission of assessing risk at all levels of the supply chain and ensuring that suppliers are capable of meeting DOD's needs. In particular, MIBP is challenged to assess risk at lower levels of the supply chain where DOD's access to information is limited. In its past efforts to build a repository of supplier data to better share information on industrial base risks, MIBP moved forward to implement initiatives without a solution for how to overcome foreseeable limitations to collect and analyze supplier data. MIBP is again

moving forward with plans to improve collection and analysis of supplier data without identifying solutions to longstanding challenges, such as obtaining information on the lower-tiers of the supply chain that already exists within the department and can supplement its other data sources. Similarly, MIBP's reliance on contractors to perform crucial supply chain analysis when the contractors cannot access the needed data is a concern. MIBP will have to determine the workforce mix that is appropriate and will allow it to build a repository that fully leverages proprietary data necessary for robust industrial base analysis. Otherwise, MIBP risks developing a repository that does not provide solutions the department is seeking.

Recommendations for Executive Action

We are making the following two recommendations to the Deputy Assistant Secretary for Defense, Manufacturing and Industrial Base Policy:

- As MIBP moves forward with its plans to improve data collection and analysis, determine a solution to make better use of existing lower-tier supplier information from program offices. (Recommendation 1)
- Identify the appropriate workforce mix with the requisite skills and capabilities needed to enable MIBP to collect business-sensitive proprietary data to achieve the repository requirement and MIBP's goal of proactive analysis. (Recommendation 2)

Agency Comments and Our Evaluation

We provided a draft of this report to DOD for comment. DOD provided written comments which have been reproduced in appendix II. DOD also provided technical comments, which we incorporated as appropriate. DOD generally concurred with the findings in our report, but partially concurred with our recommendations.

Regarding our first recommendation that DOD determine a solution to make better use of lower-tier supplier information from program offices as it develops its two systems, DOD identified plans to identify and integrate additional supplier data. However, DOD partially concurred, stating that MIBP is only developing one system, DIBNow, which is the business intelligence and analytics platform that is discussed in the report. DOD noted that the second system described in the report, the Defense

Planning Guidance Data Input and Retrieval System, is used to collect information related to industrial base risks and is not expected to provide standalone analytics capability. DOD also noted future plans to integrate Defense Planning Guidance Data input and Retrieval System data with the analytics platform. At the time of our review, the Defense Planning Guidance Data Input and Retrieval System operated independently from the analytics capability in DIBNow. We recognize that the Defense Planning Guidance Data Input and Retrieval System does not have an analytic capability, which is reflected in the report. The purpose of our recommendation was to ensure that DOD focus on the need to make better use of existing lower-tier supplier information from program offices in whatever technological solutions it chooses to overcome the department's longstanding challenge of increasing visibility at lower-tiers of the supply chain. We modified the wording of the recommendation to more broadly apply to MIBP's data collection and analysis efforts.

Regarding our second recommendation that DOD identify the appropriate workforce mix with the requisite skills and capabilities needed to incorporate business-sensitive proprietary data, DOD acknowledged the challenges and limitations of using support contractors to handle business-sensitive data but noted that any changes to the workforce mix will need to be aligned with DOD's strategic plan. While we recognize DOD may face hiring constraints, there are other options available to achieve the appropriate workforce, including obtaining civilian employees detailed from other organizations within DOD or leveraging resources from other DOD offices, such as Defense Contract Management Agency, to work with business-sensitive data. As MIBP evaluates procedures and policies for safeguarding sensitive data, we continue to believe that workforce mix should be an integral part of these considerations to ensure that DOD has access to the information—some of which are business-sensitive—and resources that it needs to assess risks to the defense industrial base. As in the first recommendation, DOD noted that there is only one system under development. As a result, we have revised the recommendation to more broadly apply to MIBP's data collection and analysis efforts.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Defense, and the Deputy Assistant Secretary of Defense, Manufacturing and Industrial Base Policy. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-4841 or makm@gao.gov. Points of contact for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix III.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Marie A. Mak". The signature is fluid and cursive, with a long horizontal stroke at the end.

Marie A. Mak
Director, Contracting and National Security Acquisitions

Appendix I: Objectives, Scope and Methodology

The objectives for this review were to examine 1) the Department of Defense’s (DOD) approach to identify industrial base risks and associated challenges, and (2) the industrial capabilities DOD has invested in and efforts to monitor the impact of its investment.

To assess DOD’s approach to identifying industrial base risks, we reviewed industrial base assessment activities of the Office of Manufacturing and Industrial Base Policy (MIBP) and the Defense Contract Management Agency (DCMA), the military departments, and other DOD components. We interviewed officials and reviewed assessment information from offices across the department. We identified these offices for inclusion in our review based on discussions with DOD officials and their membership in the Joint Industrial Base Working Group, which shares industrial base information across DOD agencies and military departments. See table 5 for the full list of offices included in our review.

Table 5: Select Department of Defense (DOD) Offices Interviewed by GAO

Military component or department	Office
Manufacturing and Industrial Base Policy	Assessments Group*
Manufacturing and Industrial Base Policy	Defense Production Act Title III
Manufacturing and Industrial Base Policy	Business Intelligence and Analytics
Manufacturing and Industrial Base Policy	Industrial Base Analysis and Sustainment Program
Manufacturing and Industrial Base Policy	Office of Secretary of Defense Manufacturing Technology
Defense Contract Management Agency	Industrial Analysis Group*
Defense Logistics Agency	Warstopper*
Air Force	Secretary of the Air Force, Acquisition*
Air Force	Air Force Research Lab*
Air Force	Space and Missile Systems Center
Army	Assistant Secretary of the Army for Acquisition, Logistics, and Technology*
Army	Army Materiel Command*
Army	Aviation and Missile Research, Development, and Engineering Center
Army	Edgewood Chemical and Biological Center
Army	Tank Automotive and Armaments Command

Appendix I: Objectives, Scope and Methodology

Military component or department	Office
Army	Tank Automotive Research, Development, and Engineering Center
Navy	Naval Sea Systems Command (NAVSEA)
Navy	NAVSEA Shipbuilding Support Office*
Navy	NAVSEA Industrial and Economic Analysis Division
Navy	Naval Air Systems Command*
Missile Defense Agency	Industrial Manufacturing and Technology*

Source: GAO analysis of DOD data | GAO-18-435

Note: Asterisk denotes Joint Industrial Base Working Group member, which shares industrial base information across DOD agencies and military departments.

In addition, we reviewed DOD’s guidance on industrial base assessments, DOD Instruction 5000.60, and the parts of its guidance on the acquisition system (Instruction 5000.2) that pertain to industrial base assessment. We also examined MIBP’s prior efforts to identify and assess risks, including Sector-by-Sector, Tier-by-Tier, Fragility and Criticality assessments, and the Defense Planning Guidance information requests. To determine the extent to which MIBP’s systems met the repository requirement to identify supplier data, we compared these systems’ current and planned datasets against DOD Instruction 5000.60 and MIBP’s fragility and criticality methodology. As part of this effort, we also observed demonstrations of MIBP’s Business Intelligence and Analytics platform and the Defense Planning Guidance Data Input and Retrieval System and DCMA’s Industrial Base Integrated Data System to gain insight about the systems’ functionality and the information contained in the systems.

To assess program-level efforts to identify and assess industrial base risks, we selected a non-generalizable sample of seven major defense acquisition programs. Major Defense Acquisition Programs are required by DOD Instruction 5000.02 to summarize their industrial base assessment assessments in their acquisition strategies at program start. Further, strategies must be updated as necessary at subsequent milestone decisions B (entry to engineering and manufacturing development) and C (production and deployment).¹ Of the 20 programs

¹Milestones are decision points where a recommendation is made to the Milestone Decision Authority about starting or continuing an acquisition program into the next Acquisition Phase. The decision points and their requirements are described in DOD Instruction 5000.02, Operation of the Defense Acquisition System. The Milestone A decision approves program entry into the technology maturation and risk reduction (TMRR) Phase and release of final RFPs for TMRR activities. The development RFP release decision point authorizes the release of RFPs for engineering and manufacturing development and often for low rate initial production or limited deployment options.

that completed acquisition milestones to enter engineering and manufacturing development or production and deployment since January 2015—the most recent revision to the 5000.02 instruction—we selected 7 programs from different industrial base sectors across all three military departments. We reviewed each program’s industrial base analyses against DOD’s criteria for these assessments and met with officials from the program offices to discuss the extent to which they used other tools such as manufacturing readiness levels to assess their industrial base. We also reviewed each program’s bill of materials and the contract clauses that required suppliers to provide data in order to assess the kind of data that programs collect on a regular basis. See table 6 for the programs that we reviewed.

Table 6: Non-generalizable Sample of Major Defense Acquisition Programs and Recent Milestones GAO Reviewed

Military department	Program	Recent milestone	Milestone date
Army	Common Infrared Countermeasure	Entered system development	8/25/2015
Army	Joint Air-to-Ground Missile	Entered system development	7/15/2015
Navy	Columbia Class Aircraft Carrier	Entered system development	11/15/2016
Navy	Next Generation Jammer	Entered system development	4/5/2016
Air Force	Military Global Positioning System User Equipment	Entered system development	1/18/2017
Air Force	KC-46A Tanker Modernization	Entered production	8/12/2016
Joint program	Joint Light Tactical Vehicle	Entered production	8/25/2015

Source: GAO presentation of Department of Defense (DOD) information| GAO-18-435

To determine what projects DOD’s industrial base investment programs selected, we assessed projects funded by Defense Production Act Title III (DPA Title III), Industrial Base Analysis and Sustainment (IBAS) program, and the Office of the Secretary of Defense Manufacturing Technology (OSD ManTech). We selected these three investment programs based on their role as MIBP’s department-wide industrial base investment programs, which DOD identifies as its primary tools available to mitigate department-wide industrial base risks.² In addition, each program is available to assist DOD with sustaining or expanding the defense industrial base. To better understand changes to the investment programs’ processes over time, we discussed planned changes to project monitoring procedures with the investment program managers.

²Fiscal Year 2016 National Defense Authorization Act Report to Congress on Single-Source Providers of Critical Acquisition Program Components(May 3, 2016).

To assess the investment programs' effort to monitor project effectiveness, we identified all projects that received funding between fiscal years 2014 and June 2017 from sources such as MIBP's Annual Industrial Capabilities Reports to Congress, budget justifications, and information provided by the three programs. We selected this time frame because IBAS was established in fiscal year 2014. We collected and reviewed project documentation for all 33 mitigation projects that ended during our time frame. We limited our selection to completed projects in order to fully understand the outcome of projects. We reviewed documents for each of the 33 completed projects, including funding opportunity announcements, contract awards and modifications, program management reviews, and final progress reports. We compared the monitoring practices used by the three investment programs with federal standards for internal controls,³ leading practices for performance management,⁴ and Office of Management and Budget guidance,⁵ which calls for programs to calls for federal programs to adopt a variety of measures to assess progress toward achieving intended outcomes. We interviewed program officials from the three investment programs to discuss the facts and circumstances regarding their actions to monitor the effectiveness of projects they invested in, as well as planned and ongoing initiatives to collect additional information on the long-term impact of their investments. Our findings cannot be generalized to all risk mitigation projects.

We conducted this performance audit from January 2017 to June 2018 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain

³GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 10, 2014).

⁴ We have previously stated that performance measurement is an important management tool that can serve as leading practices for planning of individual federal programs or initiatives. For example, see GAO, *Performance Measurement and Evaluation: Definitions and Relationships*, [GAO-11-646SP](#) (Washington, D.C.: May 2, 2011); *Managing for Results: Enhancing Agency Use of Performance Information for Management Decision Making*, [GAO-05-927](#) (Washington, D.C.: Sept. 9, 2005); and *Executive Guide: Effectively Implementing the Government Performance and Results Act*, [GAO/GGD-96-118](#) (Washington, D.C.: June 1, 1996).

⁵ Office of Management and Budget, *Strategic Plans, Annual Performance Plans, Performance Reviews, and Annual Program Performance Reports*, Circular No. A-11, Part 6 (Washington, D.C.: Aug 1, 2017); *Tax Administration: IRS Needs to Further Refine Its Tax Filing Season Performance Measures*, [GAO-03-143](#) (Washington, D.C.: Nov. 22, 2002)

sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Comments from the Department of Defense

**Appendix II: Comments from the Department
of Defense**



ACQUISITION
AND SUSTAINMENT

OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

May 29, 2018

Ms. Marie A. Mak
Director, Acquisition and Sourcing Management
U.S. Government Accountability Office
441 G Street, N.W.
Washington, DC 20548

Dear Ms. Mak:

This is the Department of Defense (DoD) response to the Government Accountability Office (GAO) Draft Report, GAO-18-435, "Defense Industrial Base: Integrating Existing Supplier Data and Addressing Workforce Challenges Could Improve Risk Analysis" dated April 25, 2018 (GAO Code 101337). Overall, I concur with this report. I partially concur with the report recommendations as detailed in enclosure (1).

Thank you for the opportunity to respond to the report.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric D. Chewning".

Eric D. Chewning
Deputy Assistant Secretary of Defense for
Manufacturing and Industrial Base Policy

Enclosures: As stated

GAO Draft Report Dated April 25, 2018
GAO-18-435 (GAO CODE 101337)

**“DEFENSE INDUSTRIAL BASE: INTEGRATING EXISTING SUPPLIER DATA AND
ADDRESSING WORKFORCE CHALLENGES COULD IMPROVE RISK ANALYSIS”**

**DEPARTMENT OF DEFENSE COMMENTS
TO THE GAO RECOMMENDATION**

The Government Accountability Office (GAO) makes the following two recommendations to the Deputy Assistant Secretary for Defense, Manufacturing and Industrial Base Policy (MIBP):

RECOMMENDATION 1: As MIBP moves forward to develop its two new systems, determine a solution to make better use of existing lower-tier supplier information from program offices.

DoD RESPONSE: Partially Concur. There is only one system under development, DIBNow. The purpose of DIBNow is to serve as a business intelligence and analytics capability that will allow leadership to make informed decisions to support a robust, secure, resilient, and innovative industrial base. MIBP recognizes that our goal to establish a data repository of supplier information is not yet realized. MIBP developed the DIBNow system as part of a phased approach to create a useful database of supplier information.

One part of this phased approach is to include the Defense Planning Guidance (DPG) Data Input and Retrieval System information, which includes proprietary data, into DIBNow. The DPG tool is used by the Military Departments and the Joint Industrial Base Working Group (JIBWG) to collect information related to industrial base risks and is not expected to provide standalone analytics capability independently of DIBNow.

In the first phase of developing DIBNow, the platform went through a required security accreditation process that limited inputs to publicly available information. Recently accredited, DIBNow is authorized to ingest and store more sensitive data, a requirement for working with proprietary data. During the second phase, the development team will identify available information, determine the effective use of the data for industrial base assessments, and develop the best way to integrate it into the DIBNow platform. MIBP will continue working with the Military Departments (including industrial base planners and program offices) and JIBWG representatives as the platform integrates more data.

RECOMMENDATION 2: Identify the appropriate workforce mix with the requisite skills and capabilities needed to enable MIBP to incorporate business-sensitive proprietary data into its two new systems to achieve the repository requirement and MIBP's goal of proactive analysis.

DoD RESPONSE: Partially Concur. First, as part of the Acquisition & Sustainment reorganization, MIBP is evaluating the necessary workforce skills and the optimum mix of employees needed to meet its mission. Any changes in the workforce mix, however, will need to be aligned with DoD's strategic plan and consider the limitations on the number of civilian billets available.

MIBP recognizes the challenges and limitations of using support contractors to assess the defense industrial base due to the business-sensitive and proprietary nature of some of the data required for some industrial base assessments. Contractors are specifically proscribed from accessing business-sensitive and proprietary information and are subject to the Trade Secrets Act (18 U.S.C. § 1905) and the confidentiality provision contained in Section 705(d) of the Defense Production Act ((DPA) 50 U.S.C. app. § 2155(d)). At the time of the GAO review, the MIBP workforce was optimized to achieve accreditation for DIBNow, which was only handling publicly available information and therefore optimized for the work at hand.

MIBP will continue to leverage open, commercial, and publicly-available data to provide lower-tier visibility and assess the health of the industrial base using its current workforce. Using these data sources can reduce the workload on government staff and augment analysis of propriety supplier data. Using these data sources also lessens risk to the Department and owners of the proprietary data, and facilitates sharing of the resulting analyses with a wider audience than proprietary data may otherwise allow. In addition, MIBP is evaluating technical and administrative procedures and policies for using and safeguarding proprietary data in analytics platforms. MIBP believes these efforts will better inform future staffing and resourcing requirements.

Finally, as mentioned in response to Recommendation 1, MIBP is developing only one system, DIBNow.

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

Marie A. Mak, (202) 512-4841 or makm@gao.gov

Staff Acknowledgments

In addition to the contact named above, Candice Wright (Assistant Director), Beth Reed Fritts (Analyst-in-Charge), Sarah Martin, and Jonathan Munetz were principal contributors to this report. In addition, the following people contributed: Lorraine Ettaro, Jaci Evans, Laura Greifner, Kurt Gurka, Hawi Itana, and Roxanna Sun.

Appendix IV: Accessible Data

Data Tables

Accessible Data for Examples of Risks Facing the Defense Industrial Base

- **Industrial base risks**
 - Obsolete items
 - Foreign dependence
 - Financial viability of suppliers
 - One available supplier
 - Limited production capacity
 - Facility damage by disaster
 - Loss of skill or equipment

Accessible Data for Figure 2: Funding for DOD’s Manufacturing and Industrial Base Policy’s Investment Programs, Fiscal Years 2014 through 2017

n/a	Dollars (in millions)		
Fiscal Year	Defense Production Act Title III Program	Industrial Base Analysis and Sustainment Program	Office of the Secretary of Defense Manufacturing Technology Program
2014	60.14	9.64	45.7
2015	51.64	18.78	22.79
2016	76.68	38.29	15.5
2017	64.07	27.08	25.53

Accessible Data for Figure 3: Values and Durations of Selected Defense Production Act Title III Projects

n/a	Dollars (in millions)		n/a
Project number	Federal funding	Contractor funding	Duration (years, months)
1	73.23	14.52	8 y, 4 m
2	25.63	33.54	5 y, 9 m
3	18.23	25.41	10 y, 3 m
4	35.38	3.6	3 y, 9 m
5	12.9	18.15	7 y, 7 m
6	28.87	1.35	8 y, 0 m
7	11.11	16.21	8 y, 0 m
8	21.29	2.22	11 y, 10 m
9	14.07	2.27	8 y, 5 m
10	14.95	1.37	10 y, 11 m
11	12.09	0.57	9 y, 8 m
12	8.79	2.52	10 y, 1 m
13	5.78	5.5	3 y, 11 m
14	4.9	6.2	6 y, 10 m
15	4.99	0	3y, 7 m
16	3.6	1.06	2 y, 2 m
17	0.29	0.11	2 y, 0 m

Accessible Data for Figure 4: Values and Durations of Selected Industrial Base Analysis and Sustainment Projects

Project number	Federal funding (dollars, in millions)	Duration (years, months)
1	2.5	2 y, 1 m
2	2.5	1 y, 6 m
3	2.5	0 y, 10 m
4	2	1 y, 3 m
5	2	1 y, 11 m
6	1.99	1 y, 0 m
7	1.25	4 y, 4 m
8	1.11	1 y, 1 m

Accessible Data for Figure 5: Values and Durations of Selected Office of the Secretary of Defense Manufacturing Technology Projects

Project number	Federal funding (dollars, in millions)	Duration (years, months)
1	4.29	2 y, 9 m
2	1.92	2 y, 9 m
3	1.7	2 y, 3 m
4	1.52	2 y, 9 m
5	1.05	1 y, 6 m
6	0.59	1 y, 3 m
7	0.35	5 y, 1 m
8	0.2	0 y, 5 m

Agency Comment Letter

Accessible Text for Appendix II: Comments from the Department of Defense

Page 1

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON

WASHINGTON, DC 20301-3000

ACQUISITION

AND SUSTAINMENT

Ms. Marie A. Mak

Director, Acquisition and Sourcing Management

U.S. Government Accountability Office

441 G Street, N.W.

Washington, DC 20548

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May 29, 2018

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Thank you for the opportunity to respond to the report.

Sincerely,

Eric D. Chewning

Deputy Assistant Secretary of Defense for

Manufacturing and Industrial Base Policy

Enclosures: As stated

Page 2

GAO Draft Report Dated April 25, 2018 GAO-18-435 (GAO CODE 101337)

"DEFENSE INDUSTRIAL BASE: INTEGRATING EXISTING SUPPLIER DATA AND ADDRESSING WORKFORCE CHALLENGES COULD IMPROVE RISK ANALYSIS"

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Page 3

RECOMMENDATION 2: Identify the appropriate workforce mix with the requisite skills and capabilities needed to enable MIBP to incorporate business-sensitive proprietary data into its two new systems to achieve the repository requirement and MIBP's goal of proactive analysis.

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MIBP will continue to leverage open, commercial, and publicly-available data to provide lower-tier visibility and assess the health of the industrial base using its current workforce. Using these data sources can reduce the workload on government staff and augment analysis of propriety supplier data. Using these data sources also lessens risk to the Department and owners of the proprietary data, and facilitates sharing of the resulting analyses with a wider audience than proprietary data may otherwise allow. In addition, MIBP is evaluating technical and administrative procedures and policies for using and safeguarding proprietary data in analytics platforms. MIBP believes these efforts will better inform future staffing and resourcing requirements.

Finally, as mentioned in response to Recommendation 1, MIBP is developing only one system, DIBNow.

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