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**Comptroller General
of the United States**

**United States General Accounting Office
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Decision

Matter of: Kearfott Guidance & Navigation Corporation

File: B-292895.2

Date: May 25, 2004

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DIGEST

Protest against proposed sole-source award to establish and certify an integrated support facility for repair and refurbishment of the MK 6 guidance system used in the Trident II (D-5) submarine-launched ballistic missile is denied where the record shows that the agency reasonably concluded that only one responsible source, the MK 6 guidance system design agent and system integrator, could satisfy its needs.

DECISION

Kearfott Guidance & Navigation Corporation protests the proposed sole-source award by the Department of the Navy, Strategic Systems Programs (SSP), of a contract to The Charles Stark Draper Laboratories (Draper) to set up and certify an integrated support facility (ISF) for repair and refurbishment of the MK 6 guidance system for the Trident II (D-5) submarine-launched ballistic missile (SLBM).

We deny the protest.

BACKGROUND

Trident II (D-5) MK 6 Guidance System

The MK 6 guidance system, the current generation of guidance systems for the Navy's SLBM program, serves as the guidance system for the Navy's Trident II (D-5) missile system. The Trident II (D-5) missile, first deployed in 1990, is launched from submerged Ohio class (Trident) submarines. The D-5 missile has a range of more than 4,600 miles; can travel at speeds greater than 20,000 feet per second; and is capable of carrying multiple, nuclear-armed warheads, each of which can be independently targeted with pinpoint accuracy. The ability of the D-5 missile to accurately strike its targets involves the precise interaction of the missile's six main subsystems: (1) the ship's navigation system, which uses sonar, a global positioning system and other navigation equipment to identify the missile's launching position from the submarine; (2) the ship's fire control system, which constantly processes the submarine's location, true north, target location and other data to compute the proper trajectory for each missile; (3) the launcher system, which uses expanding gases that are ignited to eject the missile from the launch tube, through the water and to the surface; (4) the missile's three-stage rocket motor propulsion system; (5) the missile guidance system, considered the most complicated and sensitive of the D-5 missile's six main subsystems, which is responsible for directing the missile on a corrected trajectory, compensating for submarine position and in-flight effects such as high winds, and triggering the re-entry bodies for release towards the target; and (6) the re-entry bodies system, including separation of the warheads towards the precise target, which is totally dependent on the missile guidance system. Facts/Chronology Polaris, Poseidon, Trident at 1-9.

The MK 6 guidance system is packaged in two assemblies, including the inertial measurement unit (IMU), containing the inertial instruments in a gimbaled stabilized platform, and the electronic assembly, containing the computers and support electronics. The IMU is primarily comprised of: (1) four gimbals; (2) two Kearfott-manufactured MITA-5 gyros, to provide a stable inertial frame of reference; (3) three size 10 "pendulous integrating gyro accelerometers" (10-PIGA), which measure missile velocity and transfer that information to the associated electronics to ensure that the proper velocity is maintained throughout the missile's flight so that the missile stays on target; (4) a stellar sensor system, comprised of a telescope optics assembly and a camera detector assembly, which updates the guidance system through sightings of stars; and (5) electronics for the camera, PIGA control, temperature control, gyros, gimbal torque motor drive, data measurement and other purposes, which are collectively referred to as the IMU electronics (IMUEs).

The electronic assembly contains six computers that collectively provide for gimbal control, utility control and monitoring, and missile navigation and guidance computations. *Id.* at 1. For example, in the event that the pitch and roll of the missile causes the missile to tilt and move off target, thus moving the IMU gimbals,

an electronic signal is sent via the IMUEs to the two gyros and three 10-PIGA accelerometers; the electronic assembly and IMUEs process the signals and information from the gyros and accelerometers and send corrections back to the gimbals, which aligns the gimbals back to an accurate target position; and the correction by the gimbals is then sent to the electronic assembly, which sends a signal to the missile steering system to correct the flight of the missile so that it stays on target. Contracting Officer's Statement (COS), at 2-5; Agency Report, Tab 73, Marvin A. Biren, The Trident II (MK 6) Guidance System, American Institute of Aeronautics and Astronautics, Inc. (1991).

Guidance System Contractor Support

There have been six generations of the SLBM nuclear weapons systems--the Polaris A-1, A-2 and A-3 missiles, developed and deployed throughout the 1950s and 1960s, the Poseidon (C-3) missile, first deployed in 1971, the Trident I (C-4) missile, first deployed in 1978, and the current Trident II (D-5) missile, first deployed in 1990--and five generations of SLBM guidance systems. Draper, a nonprofit research and development laboratory originally associated with the Massachusetts Institute of Technology, has been the only prime contractor responsible for the design, development, initial production and repair of each of the five generations of SLBM guidance systems, including the current, MK 6 guidance system. In fiscal year (FY) 1984, Draper was awarded a contract by SSP under which Draper was responsible for the overall design and development of the MK 6 guidance system. From 1983 to 1986, Draper established and qualified various industrial support contractors (ISC) as subcontractors for production and repair of various components of the MK 6 guidance system. Beginning in 1992, upon completion of the design, development and initial production effort, Draper was awarded a series of contracts for Technical Engineering Support (TES) activity, under which contracts Draper serves as the MK 6 system integrator, with overall responsibility not only for engineering support of the MK 6 guidance system, configuration management, changes to manufacturing processes or repair processes, procedures and documentation, test equipment development and production and test development, and alterations to the guidance system itself, but also for systems integration into the D-5 missile system.

Starting in 1987, SSP began awarding prime contracts to the ISCs for the production and repair of the major hardware components of the MK 6 guidance system, including the IMU, electronic assembly, IMUEs and PIGAs. The agency initially dual sourced these components to various ISCs, awarding two prime contracts each for the IMU, electronic assembly and IMUEs, and the PIGA. Kearfott and another contractor received contracts for the IMU. Subsequently, SSP determined that there no longer was a need to dual-source the production and repair of the major MK 6 hardware elements and, in 1994, the agency made a series of down-select decisions that resulted in the selection of a single ISC for the manufacture and repair of each MK 6 component. Kearfott was selected as the single manufacture and repair contractor for the IMU, Raytheon for the electronic assembly and IMUEs, and

Honeywell for the PIGAs. While Kearfott continues to be the prime contractor for IMU repairs, and Raytheon continues to be the prime contractor for electronic assembly and IMUE repairs, in fiscal year 2003, Draper replaced Honeywell as the prime contractor for PIGA repairs.

Integrated Support Facility

Because production for the major hardware elements of the MK 6 guidance system has ended, and only a continuing repair effort is still required, and in order to reduce the resources required to support the MK 6 guidance system, SSP in 2001 developed a plan for consolidating the MK 6 repair effort in a single integrated support facility (ISF). Under the contemplated ISF approach, one contractor would provide the infrastructure and personnel necessary to perform the repair, modification, diagnostics, fault isolation and calibration for all of the components of the MK 6 guidance system, with full repair operations to begin in October 2005. Draft Navy ISF Requirements Planning Document, Jan. 28, 2002.

SSP then undertook a series of meetings with the guidance system contractors, including (for a number of the early meetings) Kearfott, to discuss the implementation of the ISF concept. See, e.g., ISF Meeting Presentations and Minutes, Jan. 2002; ISF Meeting Presentations and Minutes, Feb. 28, 2002. Ultimately, on September 9, 2003, the agency published a synopsis on the Federal Business Opportunities (FedBizOpps) web site announcing its intention to award a sole-source contract to Draper, as the “only known source” capable of satisfying the agency’s requirement, to “establish an integrated support facility for repair and refurbishment of the Trident II (D-5) MK 6 missile guidance subsystem.” The notice, however, also referenced Note 22, which affords interested persons 45 days to identify their interest and capability to meet the stated requirement. On September 10, SSP issued its justification and approval (J&A) for other than full and open competition.

On September 22, Kearfott filed a protest with our Office asserting that the proposed sole-source award was unjustified. In a subsequent letter to the agency, Kearfott outlined its repair capabilities with respect to, and expressed its interest in, the ISF contract. Kearfott Letter to SSP, Sept. 26, 2003. On October 28, after Kearfott had withdrawn its protest because the agency was still evaluating Kearfott’s qualifications, SSP invited Kearfott to submit a technical proposal “which demonstrates your capability to set-up and certify an ISF for the repair and refurbishment of the complete TRIDENT II D5 MK 6 Guidance Sub-System to the TRIDENT II D5 Missile System.” Contracting Officer’s Response to Kearfott’s Expression of Interest, Oct. 28, 2003, at 1. In this regard, SSP’s letter specifically cautioned Kearfott that, while PIGAs “will not be repaired on the line [at the ISF] initially,” “the line must provide for the repair of PIGAs in future years.” Id. at 2.

In response, on December 17, Kearfott submitted a technical proposal. When SSP, by letter dated February 5, 2004, issued its determination that Kearfott's technical proposal failed to demonstrate it could meet the requirement for establishing and certifying an ISF, and reaffirmed SSP's initial intention to award a sole source contract to Draper as the only source known to be capable of meeting the requirement, Kearfott filed this protest with our Office. Kearfott argues that the proposed sole-source award is improper because Kearfott in fact has the capability to establish and certify the ISF.

ANALYSIS

Although the overriding mandate of the Competition in Contracting Act of 1984 (CICA) is for full and open competition in government procurements, obtained through the use of competitive procedures, 10 U.S.C. § 2304(a)(1)(A) (2000), CICA permits noncompetitive acquisitions in certain circumstances. 10 U.S.C. § 2304(c). One of those exceptions to the mandate that competitive procedures be used—that only one responsible source and no other supplies or services will satisfy the agency's requirements—was cited by SSP as the authority for its proposed sole-source to Draper. Justification and Approval For Award to Draper (J&A).

When an agency uses noncompetitive procedures under 10 U.S.C. § 2304(c)(1), it is required to execute a written J&A with sufficient facts and rationale to support the use of the cited authority, and publish a notice to permit potential competitors an opportunity to challenge the agency's decision to procure without full and open competition. See 10 U.S.C. § 2304(f)(1)(A), (B); Federal Acquisition Regulation §§ 6.302-1(d)(1), 6.303, 6.304; Marconi Dynamics, Inc., B-252318, June 21, 1993, 93-1 CPD ¶ 475 at 5. Our review of the agency's decision to conduct a sole-source procurement focuses on the adequacy of the rationale and conclusions set forth in the J&A. When the J&A sets forth a reasonable justification for the agency's actions, we will not object to the award. Global Solutions Network, Inc., B-290107, June 11, 2002, 2002 CPD ¶ 98 at 6; Diversified Tech. and Servs. Of Virginia, Inc., B-292497, July 19, 1999, 99-2 CPD ¶ 16 at 3. Here, based on our review of the record, we find no basis to question SSP's overall determination that only Draper could satisfy the agency's need for the establishment and certification of an ISF for the MK 6 guidance system.

As documented in its J&A justifying award to Draper, SSP determined that only Draper could establish and certify the ISF SSP because, while individual ISCs were familiar with their particular individual subsystems, only Draper, as the design and development agent for the MK 6 guidance system, as well as for the fleet ballistic missile guidance systems generally, had (1) "comprehensive knowledge" of "all critical elements unique to the guidance system's performance," and (2) "comprehensive knowledge" of "the interrelationships of these elements with the entire Trident II weapon system." J&A at 2. SSP concluded that Draper's "overall systems engineering knowledge and technical expertise in the MK 6 guidance system

is unmatched as a result of over forty years as sole design and development agent on the [fleet ballistic missile] guidance systems.” Id.

We conclude that SSP reasonably determined that Draper’s overall knowledge of all of the critical components of the MK 6 guidance system, including the IMU, electronic assembly/IMUEs, and 10-PIGA, was essential in view of the broad scope of the requirement to establish and certify the ISF. Again, the record indicates that the contemplated ISF is to be an integrated support facility which ultimately consolidates all guidance system repair, assembly and factory support in a single facility, merging three separate repair lines—the IMU, electronic assembly/IMUEs, and PIGA repair lines—to form a single, consolidated repair line for the overall MK 6 guidance system (other than Kearfott’s MITA-5 gyro).¹ The ISF contractor and its subcontractors will be responsible for ensuring: (1) that the selected facility is made ready for repair process setup and qualification; (2) that fixturing, tooling, procedures, infrastructure and personnel are in place to perform the repair, modification, diagnostics, fault isolation, and calibration for all elements of the MK 6 guidance system; and (3) the qualification/certification of the integrated repair facility’s ability to perform and sustain repair and refurbishment operations in the selected location. COS at 20; Tr. at 19-20; 87-88, 256-57; Procurement Request, Aug. 14, 2003; Draft Statement of Work for Competitive Set Up of Integrated [Guidance System] Repair, Mar. 26, 2003.² Further, according to SSP, consolidating the three repair lines into one integrated repair line for the overall MK 6 guidance system and maximizing efficiency will require developing new manufacturing and testing equipment and processes.³ Indeed, SSP reports that the required work under

¹ The record indicates that the Navy has a large inventory of MITA-5 gyros, sufficient to last through planned retirement for the MK 6 guidance system, and thus defective MITA-5 gyros will be replaced rather than repaired. Hearing Transcript at (Tr.) at 70-71, 95, 276-77, 639.

² In resolving this protest, GAO conducted a 2-day hearing, during which testimony was given by witnesses from SSP, Draper and Kearfott.

³ Although Kearfott contends that SSP failed to advise it of the agency’s desire for achieving new efficiencies in the ISF, we find no basis to question SSP’s position that Kearfott, through its participation in meetings with SSP and other ISCs leading up to the issuance of a synopsis for the ISF requirement, was or should have been aware of the agency’s intent in this regard. See, e.g., Agenda–Initial ISF Transition Team Meeting, Jan. 24-25, 2002, at 4, 6. In any case, to the extent that Kearfott asserts that the agency failed to advise it of a desire for improved efficiency, or of other desired characteristic of the ISF, Kearfott has failed to demonstrate that it could have furnished additional information in response to a clearer statement of the agency requirements sufficient to establish its ability to meet those requirements. See Statistica v. Christopher, 102 F.3d 1577, 1581 (Fed. Cir. 1996) (prejudice is an essential element of every viable protest, and even where an agency’s actions may

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the contemplated ISF contract would be similar in some respects to the work Draper performed under the FY 1984 contract, under which Draper was responsible for the overall design and development of the MK 6 guidance system, including responsibility for the establishing and certifying of the IMU, 10-PIGA, and IMUE/ electronic assembly facilities, and to Draper's ongoing work as the MK 6 systems integrator prime contractor under its TES contracts, under which Draper has developed additional repair processes and performed hands-on repair work for each of the MK 6 components, albeit on a smaller scale than that performed by the ISCs. Navy's Hearing Comments, Apr. 29, 2004, at 7; Tr. at 69-70.

In contrast, the record supports the Navy's determination that Kearfott lacked familiarity with at least two of the components of the MK 6 guidance system, the 10-PIGA and the Trident electronics. While Kearfott in its December 17 technical proposal to SSP pointed to its experience in establishing and operating its IMU repair facility, e.g., Kearfott Technical Proposal at 1-1, 2-1, 2-11, 2-12, the fact remains that Kearfott has never produced or repaired the Trident MK 6 10-PIGA (nor even the preceding MK 5 generation of 10-PIGA). Tr. at 391-92, 615.⁴ Further, as noted by SSP, while Kearfott asserts that its experience with other accelerometers will be useful with respect to the 10-PIGA, Kearfott's Director of Strategic and Space Programs acknowledged in his testimony that the MK 6 10-PIGAs were complicated components, testifying that the 10-PIGA was "too complicated a design for reverse engineering." Tr. at 542. In these circumstances, we find that SSP reasonably determined that Kearfott lacked adequate knowledge of the 10-PIGA, a major, complex component of the MK 6 guidance system, such as to call into question Kearfott's qualifications for the contemplated contract to establish and certify the ISF.⁵

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arguably have been improper, GAO will not sustain a protest where the record does not reflect that the protester was prejudiced).

⁴ In its protest submissions and testimony, Kearfott asserts that its personnel assisted Draper engineers in designing elements of the IMU. Any contributions Kearfott may have made in this regard does not alter the fact that, as found by the agency, Kearfott lacked knowledge with respect to critical aspects of the MK 6 guidance system.

⁵ Kearfott contends that SSP does not intend to include repair of the 10-PIGA in the ISF. SSP concedes that because the move would be a complex engineering task, it may not initially move the repair of the 10-PIGAs to the ISF, but instead may wait a year. The agency, however, does not rule out an immediate move and, in any case, maintains that the facility must be set up to accommodate 10-PIGA repair. We find that, although the record indicates some earlier uncertainty with respect to the agency's plans in this regard, see SP23 Guidance Executive Council Meeting, Dec. 7, 2001, SSP's current intention concerning 10-PIGA repair is evidenced by the agency's letter of October 28, 2003, inviting Kearfott to submit a technical proposal establishing its qualifications; this letter specifically stated that the ISF line "must
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As for the Trident electronics, even accepting that Kearfott possesses experience with electronics similar in complexity to the Trident electronics, a proposition which the agency maintains Kearfott failed to adequately demonstrate in its technical proposal (or even at the hearing on this matter), the fact remains that, as emphasized by the agency, Kearfott lacks experience with the actual Trident electronics. We conclude that the agency could reasonably view this lack of experience with Trident electronics as the basis for concern as to Kearfott's qualifications to establish the ISF.

Furthermore, the record supports SSP's determination that, contrary to Kearfott's position, Draper's unique, comprehensive knowledge of the interrelationships of the MK 6 guidance system and its various components with the overall Trident II (D-5) missile and its various subsystems was necessary to meeting the ISF requirement.

Kearfott's director for strategic and space programs conceded at the hearing that Kearfott lacks an understanding of the other subsystems of the D-5 missile and how the subsystems interact. Tr. at 566. Kearfott maintains that such knowledge is not necessary because each component of the MK 6 guidance system, including the 10-PIGA, IMU, and electronic assembly, has a test console for measuring performance; if the data output from the test console matches the established performance requirements, then the unit is acceptable to the fleet. Tr. at 566-67. According to Kearfott, this is how the ISCs currently test the respective components that they repair, and Kearfott does not foresee that the establishment of an ISF would change this arrangement.⁶

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provide for the repair of PIGAs in future years." Contracting Officer's Response to Kearfott's Expression of Interest. Oct. 28, 2003, at 2. To the extent that Kearfott objected to the agency's statement of its requirements in this regard, it could not delay filing a protest to this effect until approximately 5 months after receipt of the agency's letter. 4 C.F.R. § 21.2 (2004).

⁶ When questioned during the hearing as to whether Kearfott's lack of experience with other D-5 subsystems would adversely affect its ability to establish an ISF, Kearfott's director of strategic and space programs testified as follows:

The factory is the factory. The test console is there, you run it [the component] through the test console, it makes it. That's what we do today. Why would I need to have the fire control experience at all? I don't need it today. Why do I have to have it for any factory?

Tr. at 568.

Testimony at the hearing, however, indicated that knowledge such as Draper possesses of the various subsystems of the D-5 missile, including the guidance system, navigation system, fire control system, missile propulsion system and re-entry bodies, and how these subsystems interact, is essential because the subsystems are highly integrated and interconnected. Tr. at 19-23, 87-88, 279-81; Agency Hearing Comments, Apr. 29, 2004, at 19-20.⁷ While the individual ISCs may not have or need an understanding of the interrelationship of the MK 6 guidance system with the other subsystems of the D-5 missile, Draper through its TES contract has such an understanding. Draper, as part of its TES contract, maintains the parameters for each of the test consoles that are used by the ISCs, to repair the components of the MK 6 guidance system, and Draper changes and updates the test consoles to accommodate changes in the other subsystems of the D-5 missile. Kearfott Supplemental Submission (May 6, 2004) at 2. Under the TES contract, Draper serves as the MK 6 systems integrator, whose work includes systems integration into the D-5 missile. Contracting Officer's Statement at 13. According to SSP, the ISF contractor must be able to make appropriate changes in the MK 6 guidance system, the repair processes, and the appropriate test consoles, in reaction to changes in other subsystems of the D-5. Indeed, SSP's MK 6 Program Manager testified that the navigation subsystem of the D-5 missile is changing and will result in a "different device," which sends out "different signals," so that the ISF contractor will be required to develop new repair and refurbishment processes for the electronic assembly. Tr. at 87-88. In these circumstances, we find reasonable the agency's position that while an individual ISC such as Kearfott may have been able to rely on test consoles furnished by another entity, instead of on knowledge of the interaction of the Trident and MK 6 subsystems, this approach will be insufficient for meeting the future ISF requirement.

⁷ In this regard, Draper's director for strategic and space programs testified that:

part of the actual input to a repair process is being able to ascertain the cause and effect relationship between these highly integrated and interconnected subsystems to determine that you are having the actual [submarines] remove the appropriate failed component and send these back for repair, not one sending good components back or leaving bad components in.

Again, that is all predicated on being able to understand the overall interrelationship and interaction amongst all of these subsystems, and that was Draper's responsibility in the initial development of the system, and continues to be as we monitor that.

Tr. at 280.

In summary, we conclude that SSP reasonably determined that Kearfott had failed to demonstrate its qualifications to establish and certify the ISF for the MK 6 guidance system. Our review of the record further indicates that SSP reasonably determined that only Draper, with its unique, comprehensive overall knowledge of the critical elements of the MK 6 guidance system and of the interrelationships of these elements with the subsystems of the Trident II weapon system, could satisfy the agency's need for the establishment and certification of an ISF for the MK 6 guidance system.

The protest is denied.

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General Counsel