



Comptroller General  
of the United States

Washington, D.C. 20548

## Decision

**Matter of:** Bendix Oceanics, Inc.

**File:** B-247225.3

**Date:** July 27, 1992

Michael D. Newman, Esq., and Paul Shnitzer, Esq., Crowell & Moring, for the protester.

John W. Chierichella, Esq., Jones, Day, Reavis & Pogue, and Barbara A. Pollack, Esq., for Hughes Aircraft Company, an interested party.

Louis F. Sadler, Esq., Department of the Navy, for the agency.

John Van Schaik, Esq., and John Brosnan, Esq., Office of the General Counsel, GAO, participated in the preparation of the decision.

### DIGEST

1. Protest that agency unreasonably analyzed the capacity of a proposed sonar system to meet a performance requirement of generating 35 consecutive sonar pulses is sustained where the agency's analysis does not provide reasonable support for its conclusion that the batteries proposed for the protester's sonar system do not have sufficient capacity to meet the performance requirement.

2. Protest contention that agency unreasonably evaluated whether the electrical cable proposed by awardee would overheat is denied since the awardee specifically committed itself to providing a cable that meets the solicitation requirements and since the protester does not argue that no cable could be made to handle the energy and temperature loads required by the awardee's proposed system; in the absence of evidence that a compliant cable could not be obtained, there was nothing unreasonable in the agency's decision to accept the risk of the awardee's proposed approach.

3. Agency evaluation of cost proposals was reasonable where based on computerized cost modeling system agency created cost estimates for each proposal based on specific features of proposed systems and used those cost estimates in the selection decision. Although protester argues that agency has not justified its use of higher cost estimates than proposed by the protester for a number of items, since agency has explained the factors that went into its estimating system to arrive at estimates for particular cost

items and protester has not explained why its own estimates are any more accurate than the agency's estimates, cost evaluation was reasonable.

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## DECISION

Bendix Oceanics, Inc. protests the award of a contract to Hughes Aircraft Company under request for proposals (RFP) No. N00019-89-R-0061 issued by the Navy for development of an airborne low frequency sonar (ALFS) system, which is a "dipping" sonar system used on Navy helicopters to detect submarines.

We sustain the protest based on our conclusion that the Navy's evaluation of the predicted performance of the batteries used in the Bendix system was not rationally based.

## BACKGROUND

The purpose of the ALFS system is to provide an increased detection capability over that provided by the dipping sonar currently used by the Navy. The ALFS system is required to provide: (1) detection capability for long range active searches; (2) detection and classification of subsurface threats; (3) rapid, accurate localization of threats; (4) attack criteria; and (5) an embedded training capability to maintain combat ready skills.

According to the solicitation, the contractor is to design, develop, fabricate, test and furnish full scale engineering development (FSED) of five ALFS systems on a cost-plus-incentive-fee basis. The solicitation also included line items for technical data, performance tests and demonstrations, logistics, software and engineering support. The solicitation also included optional line items for additional FSED ALFS systems on a cost-reimbursement basis and, on a fixed-price basis, production quantities of ALFS systems, related hardware, training, spare parts, and other support.

The solicitation contemplated the award of a contract to the offeror submitting the proposal that provided the best value to the government, considering the listed evaluation criteria. It included the following evaluation criteria, listed in descending order of importance: A. Technical, B. Cost, C. Management, and D. Integrated logistics support (ILS). In relevant part, the solicitation described the evaluation criteria and subcriteria as follows:<sup>1</sup>

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<sup>1</sup>The solicitation also stated that risk was to be assessed under some of the subcriteria.

- A. Technical. The following subcriteria are listed in descending order of importance:
1. System Design, with emphasis on performance and physical compatibility with specified Navy helicopters. The following areas are listed in descending order of importance:
    - a. Acoustic system performance.
    - b. Operating and mechanical design.
    - c. Adaptability to platform, i.e., interfaces.
  2. Engineering and production disciplines.
- B. Cost. The cost-plus-incentive-fee contract will be evaluated for reasonableness, completeness, and realism. The following subcriteria are listed in descending order of importance:
1. Production cost.
  2. Full scale development cost (FSD).
  3. Life-cycle-cost.
- C. Management. The following subcriteria are of equal importance:
1. Schedule.
  2. Past performance and systemic improvement.
- D. Integrated logistics support(ILS). The following subcriteria are of equal importance:
1. Supportability.
  2. ILS development/deployment.

Five firms, including Bendix and Hughes, submitted proposals. Bendix submitted two separate proposals, one for its "F" system and a second for its "X" system. The proposed Bendix systems are powered by batteries that are recharged by a low level power source supplied through a cable connected to the helicopter. In the systems proposed by all of the other offerors, power is supplied directly to the system by means of a high voltage cable running from the helicopter to the sonar transducer; no batteries are used.

The proposals were evaluated and several rounds of discussions held. Revised proposals and best and final offers (BAFO) were then submitted and evaluated. The

proposals were rated as Outstanding, Highly Satisfactory, Satisfactory, Marginal, or Unsatisfactory with risk ratings of Low, Medium, and High. The two Bendix proposals and the Hughes proposal were rated as follows on the technical criterion:

	Bendix F	Bondix X	Hughes
1. System Design			
a. Acoustic Systems performance	Sat.	High Sat.	Sat.
b. Operating & Mech. Design	Marg. Med. risk	Marg. Med. risk	Outstand. Low risk
c. Adaptability to Platform	Sat. Low risk	Sat. Low risk	Sat. Low risk
2. Engineering and Production	Outstand. Low risk	Outstand. Low risk	Sat. Low risk
Technical Overall	Sat. Med. risk	Sat. Med. risk	High Sat. Low risk

Under the management criterion, the Hughes proposal and both Bendix proposals were given overall ratings of Highly Satisfactory with Low risk. On the ILS criterion, the Hughes proposal and both Bendix proposals were given ratings of Satisfactory with Low risk.

In the cost/price evaluation, since the FSED is to be performed on a cost-reimbursement basis, the Navy developed its own independent estimates based on each firm's approach set forth in its proposal. The agency estimated that of all the proposals received, the Bendix F proposal represented the lowest cost approach, with the Hughes proposal second low and the Bendix X third low. On the fixed-price production options, the Bendix F was low, Hughes was second low and Bendix X was third low. In the final area of the cost/price evaluation, life-cycle costs, the Navy estimated the Hughes proposal to be second low, the Bendix F, third low and the Bendix X, fourth low.

In deciding to award the contract to Hughes, the source selection authority stated that Hughes was the only offeror whose technical proposal was rated highly satisfactory with low risk, and that other offerors had either a lower rating or higher risk in the technical area, which was the most important under the solicitation. With respect to cost/price, the second most important criterion, the source selection authority stated that Hughes was very competitive since it was second lowest in each of the three cost/price

areas (FSED, production, and life-cycle). The source selection authority also noted that on the less important criteria, Management and ILS, no offeror was identified as clearly superior. The source selection authority awarded the contract based on the determination that the Hughes proposal represented the best value and lowest risk to the government.

With respect to Bendix, based on the evaluation results, the Navy eliminated the F proposal from consideration. In addition, the Navy's technical evaluators listed a single weakness in both of the firm's proposals under the technical subcriteria, operating and mechanical design. According to that report, the evaluators were concerned that the systems proposed by Bendix could not permit the generation of 35 consecutive 4-second pulses as required under conditions set out in the solicitation specifications. The minutes of the final meeting of the source selection advisory council state:

"The consensus of the SSAC membership was that the potential for the battery to drain during extended dip operations would adversely affect the performance of ALFS. Therefore, the increased coverage offered by the Bendix "X" system would be offset if the ALFS system experienced an excessive battery drain causing the aircraft to lose its active dipping capability."

#### PROTEST ALLEGATIONS

Bendix argues that as a result of flaws in the Navy's evaluation of its and Hughes's proposals, there was no rational basis for the technical evaluation and ratings. With respect to the evaluation of its own proposals, Bendix maintains that the Navy irrationally gave the firm a "Marginal" rating under the operating and mechanical design technical subcriterion as a result of the purported inability of the batteries used in the Bendix proposed systems to generate 35 consecutive sonar pulses in compliance with the specifications. Bendix also argues that the Navy failed to conduct meaningful discussions regarding this issue. According to Bendix, since the erroneous 35-pulse concern was the only weakness listed in the final evaluation report under the operating and mechanical design technical subcriterion, its "Marginal" rating under that subcriterion was improper and should have been "Satisfactory" or "Highly satisfactory."

Bendix also argues that the evaluation of the Hughes proposal lacked a rational basis since the evaluators failed to realize, or even consider, a critical flaw in the Hughes technical approach. Hughes proposed to power its sonar

system by sending current from a generator in the helicopter down a cable to the transducer or "wet end" of the system. According to Bendix, the Navy failed to consider the substantial risk that the level of current needed to generate the acoustic performance proposed by Hughes would cause the cable to overheat and fail. Bendix maintains that if the Navy had rationally evaluated the technical approach proposed by Hughes, the rating given to Hughes under the operating and mechanical design technical subcriterion would not have been "Outstanding," with Low risk, but rather "Unsatisfactory," with High risk.

Finally, Bendix maintains that the cost/price evaluations of the Hughes and Bendix proposals were flawed. According to the protester, if the evaluation had been performed properly, the evaluated cost for the Bendix X FSED would have been less than the evaluated FSED cost of the Hughes proposal and the life-cycle cost for both Bendix proposals would have been much closer to that of Hughes. Bendix argues that this, in conjunction with the higher rating it should have received under the technical criterion and the lower rating Hughes should have received under the same criterion, would have resulted in a Navy selection of one of the Bendix proposals for award.<sup>2</sup>

In order to address the technical issues concerning the batteries in Bendix's proposed systems and the impact of the alleged cable heating in the Hughes system, we conducted a hearing to obtain testimony from Navy technical personnel and a consultant retained by Bendix. In addition, we obtained assistance from our Office's technical staff. Based on our review, we agree with Bendix that the Navy's evaluation of battery capacity and the ability of the Bendix

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<sup>2</sup>The Navy and Hughes argue that most or all of these allegations are untimely because they were not filed within 10 working days after each specific basis of protest was known. Bid Protest Regulations, 4 C.F.R. § 21.2(a)(2) (1992). Without analyzing the particular circumstances that led Bendix to each of its specific grounds for protest, we conclude that the issues which we consider here were timely filed. In this respect, Bendix filed three separate protests--one on January 9, 1992 (B-247225), another on March 3 (B-247225.2), and a final one on March 19 (B-247225.3). The protests were based on information or documents that it received on various dates, starting with the agency's award notice on January 2, and on documents released in connection with the protests on February 22 and March 5. Each of the issues which we consider here was either encompassed within an original broadly framed protest allegation or was filed within 10 working days of receipt of information on which the particular allegation was based.

proposed systems to meet the requirement for 35 consecutive pulses was flawed. We disagree with the protester concerning the agency's evaluation of the Hughes proposal.

## ANALYSIS

### The Bendix Battery

The Navy explains that during discussions, agency personnel questioned Bendix about the ability of its battery-powered systems to meet the requirement of the solicitation to generate 35 consecutive sonar pulses. According to the Navy, it asked Bendix to submit data that would show that its systems would meet the 35-pulse requirement. The Navy maintains that based on Bendix's explanation during discussions and on what supporting data it did submit, the evaluators questioned whether the batteries proposed by Bendix could create sufficient power to meet the 35-pulse requirement. Further, the Navy argues that the failure of Bendix to submit the actual test data which the Navy requested increased the agency's concern.

As a result of these concerns, the Navy explains that it performed its own calculations of the capacity of the batteries proposed by Bendix. According to the agency, it did so by extending graphs in a "Battery Application Manual" prepared by Gates Energy Products, the supplier of the batteries proposed by Bendix. The Navy evaluators calculated that because of excessive battery power loss there was a significant question as to whether the Bendix systems were capable of generating the required 35 consecutive pulses.

Bendix argues that there were numerous flaws in the Navy's analysis.

First, the protester maintains that in its analysis the Navy understated the capacity of the Bendix batteries by miscalculating their "recharge time," which is the time between sonar pulses during which the batteries recharge. According to the protester, the Navy's error was its use of the shape of the sonar pulse in its calculations which Bendix argues is contrary to current authoritative standards applicable to sonar. Bendix argues that this caused the Navy to erroneously adjust the charging power to the batteries downward by a factor of 0.75, with the result that the agency calculated a greater recharging time than actually will be needed.

According to Bendix, the Navy's calculation is based on a misunderstanding of how to correctly calculate duty cycle, which is the ratio of the total "on" time (pulse duration or time a pulse is being emitted) to the pulse period (pulse

emission time plus the waiting or "listening" time until the next pulse emission). Bendix argues that the Navy used an outdated definition of "pulse duration" which caused it to compare the "shape" of the Bendix pulse to a "rectangular pulse"; Bendix argues that under the current definition specifically applicable to sonar, pulse shape is irrelevant.

Second, the protester maintains that the Navy's analysis disregarded the fact that the batteries recharge between pulses. According to Bendix, the Navy's analysis, by not considering that the batteries rest and recharge between pulses, greatly exaggerates the electrical demands made on the Bendix batteries since both resting and recharging extend the batteries' operation. Bendix concludes that the impact of the Navy's errors was that the ability of the Bendix systems to meet the 35-consecutive-pulse requirement was greatly underestimated.

In reviewing an agency's evaluation of technical proposals, our Office will not make an independent determination of their merits. A.G. Personnel Leasing, Inc., B-238289, Apr. 24, 1990, 90-1 CPD ¶ 416. However, even in cases such as this, where technically complex systems are involved, the agency's judgment must have a rational basis and be consistent with the stated evaluation criteria. S-Cubed, A Div. of Maxwell Laboratories, Inc., B-242871, June 17, 1991, 91-1 CPD ¶ 571.

We find the Navy's decision here was not rationally based because in its analysis of battery capacity, the Navy incorrectly shortened the recharge time. In calculating the power available from the Bendix batteries, the Navy used an equation which includes a value for the time of the rest period, or recharge time, between pulses. In doing so, however, the Navy based its calculations on a definition of "pulse duration" that results in a shortening of the actual recharge time for the batteries. The Navy's definition is not based on when the pulse actually turns on and off, but is based on when the pulse amplitude passes a certain level going up and down. We think Bendix is correct in asserting that the Navy erroneously considered this definition of pulse duration to determine the duty cycle of the sonar system. It is clear from the expert testimony at the hearing, as well as from the authoritative literature,<sup>3</sup>

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<sup>3</sup>In the 1984 IEEE [The Institute of Electrical and Electronics Engineers, Inc.] Standard Dictionary of Electrical and Electronic Terms, the definition of "pulse duration" in the specific context applicable here, "pulse terms," includes no limitation to any specific pulse shape. Although the Navy argues that the complete definition for

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that in the sonar system pulse shape as used by the Navy is not relevant to the actual duty cycle. Indeed, as we understand it, this is the only logical conclusion that can be drawn in light of how sonar operates.

A sonar system sends out a brief burst of energy, called a pulse, into the water and then turns off for a longer period to listen for an "echo." The sonar system will continue to emit the pulse for a specified duration, await any echo for a specified listening time, and then emit the next pulse regardless of whether the pulse reaches full power instantaneously or gradually. In its analysis, the Navy used a theoretical pulse duration in order to determine the energy in the sonar pulse, and its calculations are accurate for that purpose. (The real pulse duration is actually longer.) However, the Navy's theoretical pulse duration is irrelevant to the actual duty cycle of a sonar system because the length of both the "on time" and "off time" is not affected by the amplitude of energy use. The "on time" and "off time" in fact are controlled by the sonar timing circuit. Thus, the Navy erred when it computed actual "off time" on the basis of the theoretical pulse duration; since it used the shortened theoretical pulse duration to represent the system "on time," it computed a correspondingly shortened "off time," which in turn led to its erroneous computation of available battery recharge time.

We also find that the Navy's analysis did not credit the Bendix systems with the full effect of recharging. The battery is constantly charging during the time the sonar is "listening" for the return signal (echo) when the transducer is off and not drawing any appreciable current from the battery supply. Although the Navy claims that the analysis done by Bendix to demonstrate that its system would meet the 35-pulse requirement--an analysis that did not consider the battery to be constantly charging between the pulses--was optimistic, it is in fact very conservative. In actuality, Bendix's system provides for constant charging between the pulses which provides a much more capable battery source and current supply than would be available if the battery was simply discharging constantly. Additionally, the manufacturer's specifications support this conclusion.<sup>4</sup>

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<sup>3</sup>(...continued)

"pulse duration" requires consideration of pulse shape, what the Navy relies on is not applicable to sonar duty cycle.

<sup>4</sup>Although the Navy argues that its calculations did consider that the battery recharge time between pulses, the Navy's analysis was dependent on a misreading of a graph included

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Thus, we find that the Navy's calculations do not provide reasonable support for its conclusion that the batteries proposed by Bendix do not have sufficient capacity for the systems to meet the RFP performance requirements and for the agency's resultant "Marginal" rating under the operating and mechanical design subcriterion. We sustain the protest on this ground.

Although the Navy has disputed the protester's position on these matters, the agency also argues that, in any event, this issue was covered in discussions and Bendix was given the opportunity to submit additional data to alleviate the agency's concerns. The Navy states that during oral discussions it asked Bendix for test data that would show that Bendix's proposed X system could sustain the required 35 consecutive pulses required by the solicitation. According to the Navy, Bendix's failure to submit the requested test data added to the agency's concerns.

The record shows that during discussions, the Navy asked questions of Bendix regarding the 35-consecutive-pulse issue and in response a Bendix representative presented to the Navy his analysis of how the requirement would be met. Nothing in the record shows that Bendix was informed of the Navy's specific concerns regarding this matter.<sup>3</sup> In addition, (although the Navy argues that Bendix failed to submit test data to demonstrate the capability of its battery system, as Bendix explains, it submitted test data on the batteries used in its ALFS advanced development model, a predecessor to the proposed X system, and data on the batteries used in another developmental system. Further, as Bendix correctly explains, no test data exist on the proposed systems since the ALFS hardware, not having been designed or built yet, did not exist to be tested. Moreover, as we explained above, the Navy's evaluation of the battery issue was flawed since it was based on certain fundamental misconceptions regarding the functioning of the batteries in the Bendix systems. Under the circumstances,

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<sup>4</sup>(...continued)

in the battery specifications prepared by Bendix's battery supplier. The Navy erroneously read that graph, which has its horizontal axis equal to capacity, not time, as showing time when in fact it shows capacity.

<sup>5</sup>At no time during discussions did the Navy explain to Bendix its own analysis that demonstrated that the Bendix systems could not meet the 35-consecutive-pulse requirement. Under the circumstances, since the discussions focused on Bendix's analysis of the battery issue, Bendix had no way of knowing during discussions that the Navy's analysis of this issue was flawed.

we question whether there was anything else that Bendix could have submitted that would have corrected the agency's misconceptions.

#### The Hughes Cable

Bendix also argues that the evaluation of the Hughes proposal lacked a rational basis since the evaluators failed to consider the substantial risk that the level of current needed to generate the acoustic performance proposed by Hughes would cause the firm's proposed cable to overheat and fail. Bendix argues that, under these circumstances, the "Outstanding" rating and low risk rating given to Hughes under the operating and mechanical design technical subcriterion were unreasonable.

In response, the Navy states that the issue of cable heating was indeed considered by its technical personnel when they performed rudimentary calculations to determine which approach, that of Bendix, which charged its batteries through a cable from the helicopter, or that of Hughes, which powered its sonar directly by current sent through the cable from the helicopter, caused the most heat. According to the Navy, based on these calculations, which were not retained, its technical personnel concluded that cable heating would not create a problem for Hughes.

We have no basis to question the Navy's decision to accept the cable approach proposed by Hughes. First, although the agency failed to retain documents that demonstrate its analysis of this matter, the record indicates that the Navy did consider the possibility of the Hughes cable overheating and raised the matter during discussions. In a question posed to Hughes, the Navy described the temperature range of the cable proposed by the awardee and asked: "How will cable meet full temperature requirements?" Hughes responded that it would comply with the solicitation's temperature requirements and stated that the proposed cable had been extensively used on another system which has the same required temperature range as the ALFS. In addition, Hughes replied: "We are fully confident that the same cable will totally comply with the [ALFS temperature] range. Our cable supplier has been requested to take necessary action so that the cable will withstand the requirement without altering sonar performance."

Although Bendix argues that the Navy did no analysis of whether the Hughes cable would overheat in the specific circumstances required by the solicitation, Bendix does not argue that no type of cable would be able to handle the energy and temperature loads required by the Hughes system and meet the operating requirements of the solicitation. In fact, at the hearing held on this protest, Bendix's

technical expert conceded that he was not arguing that the cable which Hughes would have to supply for its system to meet the performance requirements is beyond current cable technology.<sup>6</sup> Under the circumstances, where the Navy raised this matter in discussions and Hughes specifically committed itself to providing a cable that meets the requirements, in the absence of evidence that such a compliant cable could not reasonably be obtained by Hughes, we conclude that there was nothing improper in the Navy's decision to accept the risk of Hughes's proposed approach. Nor do we think based upon the hearing testimony and the documentary record before us that the evaluators' judgment that the risk was low that Hughes could avoid such heating problems was unreasonable. Therefore, we have no basis to challenge the rating given to Hughes under the operating and mechanical design subcriterion.

#### The Cost Evaluation

Bendix also argues that the Navy's cost evaluation was flawed. According to the protester, there are numerous unexplained markups in the evaluation of its cost proposals for FSED and a single substantial unexplained markdown in Hughes's costs. For example, Bendix argues that without explanation, after receipt of BAFOs, the Navy added \$3 million above the amount of the original government cost estimate to the evaluated cost of FSED for the Bendix X proposal. Bendix also argues that the FSED cost for the Hughes proposal was decreased by \$7 million, again without explanation. Bendix also argues that there are numerous other unexplained markups to its FSED proposed costs for its X and F proposals and, in addition, unexplained and unreasonable markups to its proposed life-cycle costs for both proposals.

Where, as here, a cost-reimbursement contract is awarded, the offerors' proposed estimated costs of contract performance should not be considered as controlling, since they may not provide valid indications of the actual costs which the government is, within certain limits, required to pay. Bendix Field Eng'g Corp., B-230076, May 4, 1988, 88-1 CPD ¶ 437. Thus, the government's evaluation of estimated costs should determine the extent to which the offerors' proposed costs represent what the contract should cost, assuming reasonable economy and efficiency. Arthur D.

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<sup>6</sup>The Bendix expert was asked whether he was arguing that a cable could not be made within current cable technology that would allow the Hughes system to meet the acoustic performance requirements without overheating or failing. He replied that a cable could be built that would not fail at the required temperature level. Video transcript at 04:09.

Little, Inc., B-229698, Mar. 3, 1988, 88-1 CPD ¶ 225. In order to undertake a proper cost realism evaluation, the agency must independently analyze the realism of an offeror's proposed costs based upon its particular approach, personnel and other circumstances. United Int'l Eng'g, Inc. et al., 71 Comp. Gen. 177 (1992), 92-1 CPD ¶ 122. Our review of an agency's cost evaluation is limited to a determination of whether the evaluation was reasonably based and was not arbitrary. Id.

We think that the cost evaluation was reasonable.<sup>7</sup> First, in response to the protester's allegations that the Bendix X FSED cost was inexplicably increased by \$3 million and the Hughes FSED cost was decreased by \$7 million, without explanation, the Navy states that Bendix has mistakenly relied on obsolete government cost estimates. According to the Navy, a computer printout provided as part of the cost evaluation record erroneously included an obsolete government cost estimate that was not used in the actual evaluation. The Navy explains that the record also includes the up-to-date government estimates that actually were used in the evaluation and that, in the case of Bendix, that up-to-date estimate, on which the evaluation was based, is \$3 million higher than the obsolete government estimate. Also, the Navy explains that the up-to-date estimate for Hughes, on which the Hughes evaluation was based, is \$7 million less than the out-of-date Hughes estimate. The Navy notes that the obsolete government estimate printout for Hughes includes a notation on the software line item that it was "to be updated yet," and argues that this accounts for the \$7 million difference between the two government estimates. Our review of the documents in question confirms this. Although Bendix argues that the Navy's explanation lacks credibility, the firm has not otherwise challenged these particular cost figures. Under the circumstances, we have no grounds to question the agency's explanation.

Bendix also challenges a number of other increases made by the Navy in its proposed costs. First, Bendix argues that the Navy increased its FSED costs for the X proposal by \$3.2 million and that there is no explanation in the record for it. Specifically, Bendix refers to increases over the costs proposed by it for the transducer, the sonar interface unit and the reeling machine/reel cable assembly. Bendix

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<sup>7</sup>Bendix challenges a number of adjustments to its proposed costs for the F proposal. However, based upon technical concerns related to the projected performance of the system, the Navy did not consider the F proposal for award. For that reason, we will not consider here any alleged unexplained markups for the Bendix F proposal.

also argues that the record includes no explanation of why the Navy increased by \$3.1 million the systems engineering and program management costs proposed by the firm.

In response to these allegations, the Navy explains that in its cost evaluation, it used a computerized modeling system to individually analyze each proposal based on its specific features. This evaluation used data provided by each offeror in the cost section of its proposal. The data used for hardware items included such information as weight, material, components, maturity, testing requirements, and schedule. For software items, information such as lines of code, type of code, whether code was new, modified or reused, software writing tools, testing standards and schedule was used. According to the Navy, although its cost evaluation system was applied consistently to each offeror, it allowed for flexibility to account for specific details of each proposal.

With respect to the increases over Bendix's proposed costs for the transducer, the sonar interface and the reeling machine/reel cable assembly, the Navy states that it believed that the X system was not as mature as did Bendix and, therefore, the agency concluded that the system would require more development work and thus greater cost than did Bendix.

Bendix has offered no reason to challenge the Navy's judgment as to the maturity of its proposed X system or its likely cost. Under the circumstances, we have no grounds to question the reasonableness of the evaluation of the FSED cost for the X proposal.

With respect to system engineering and program management costs, the Navy maintains that the difference between its estimate and Bendix's estimate is based primarily on differences in cost estimating methodology. According to the Navy, its modeling methodology takes into account, among other things, historical costs and contractor values as well as the degree of difficulties in designing, building, and managing. As an example of how its cost modeling evaluation works, the Navy explains that it had higher estimates than Bendix for hardware costs and under its evaluation system those higher costs increased the costs of system engineering and program management.

Although Bendix generally argues that the Navy has not justified the projected cost increases for this element, the protester has not justified why its own cost estimate for this element is any more accurate than the government's and therefore has not shown why the cost evaluation in this respect was unreasonable.

Finally, Bendix argues that the Navy unreasonably increased its proposed life-cycle costs for the X proposal on six items, totaling \$774,206. According to Bendix, on these six items, on both the X and F systems, it proposed to perform virtually identical work at virtually, and in some cases exactly, the same prices. Bendix argues that in the cost evaluation the Navy unreasonably assigned higher costs to these items on the X proposal than on the F proposal.

The Navy does not attempt to explain the difference between the F and the X proposals for each of these six items. Rather, the agency generally asserts that it evaluated the F and X proposals separately using the cost estimating methodology described above and, due to differences between the two systems, such as the weight of the reeling machines proposed for each, different cost estimates resulted. In addition, the Navy explains that in its cost estimating system, the costs of some of the six challenged items are related to the agency's judgment that the X proposal hardware will cost more than the hardware proposed for the F. According to the Navy, the costs of some of the challenged items increased with the cost of hardware.

Although the Navy has not explained in detail the differences between the F and X proposals that justify the cost differences, Bendix has not disputed that there are differences between the two systems that justify the cost differences. In any event, the amount which Bendix disputes here, only \$774,206, out of a life-cycle cost of hundreds of millions, is not significant, and in our view, would have made no difference in the selection decision.

#### CONCLUSION AND RECOMMENDATION

For the reasons stated above, we find that the Navy's evaluation of the ability of the Bendix proposed systems to meet the requirement for 35 consecutive pulses lacked a reasonable basis. Ratings of "Marginal" with medium risk were assigned to both Bendix proposals on the operating and mechanical design subcriterion due to concerns about the 35-pulse requirement. Since we have concluded that the rationale for the ratings was faulty, a proper evaluation could well result in a higher rating under the subcriterion and possibly a higher overall technical rating. This could impact the selection.

Accordingly, we recommend that the Navy reevaluate the Bendix technical proposals in light of this decision and conduct a new cost/technical tradeoff to determine whether Bendix or Hughes should receive the award. If the agency concludes that Bendix is entitled to award, the Hughes contract should be terminated and award made to Bendix, if otherwise appropriate. We also find that Bendix is entitled

to the costs of filing and pursuing this protest, including attorneys' fees. 4 C.F.R. § 21.6(d)(1). Bendix should submit its claim for costs directly to the agency.

We sustain the protest in part and deny it in part.

*for Milton J. Howler*  
Comptroller General  
of the United States