



Comptroller General  
of the United States

Washington, D.C. 20548

## Decision

146756  
Westfall-McGrail  
REDACTED VERSION

**Matter of:** Eyring Corporation

**File:** B-245549.8

**Date:**

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Management Inc., an interested party.  
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preparation of the decision.

### DIGEST

1. Protest that awardee's proposed system will not meet solicitation's technical requirements is denied where record establishes reasonableness of agency determination that awardee's system will meet the requirements.
2. Protester's allegation that awardee has not properly manufactured its screen or configured its display system is dismissed where awardee had not manufactured its screen at the time it submitted its proposal--nor was it required to have done so--and where protester presents no evidence that system was not properly configured.
3. Protest that given the lack of information in the awardee's proposal concerning its proposed display system, the agency could not reasonably have determined that the proposed system would comply with certain of the specification requirements is dismissed as untimely where

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'We issued a decision responding to Eyring's protest on March 9, 1992. Eyring Corp., B-245549.4, Mar. 9, 1992. Because the decision incorporated protected information, it was issued subject to the terms of a General Accounting Office protective order and was released only to the parties admitted to the protective order. The protected information has been redacted from the following version of the decision.

argument was not raised until more than 10 days after the protester received portions of the awardee's proposal describing its proposed display system.

4. Protest that awardee failed to demonstrate certain required performance characteristics with its proposed system is denied where awardee demonstrated the characteristics using a system incorporating a different type of screen and protester has not shown that substitution of one type of screen for the other invalidated the demonstration.

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#### DECISION

Eyring Corporation protests the award of a contract to AAI Systems Management Inc. under request for proposals (RFP) No. N61339-90-R-0004, issued by the Naval Training Systems Center for visual upgrades to Navy helicopter weapon system trainers. Eyring challenges the technical acceptability of the image generator and display system proposed by AAI and complains that AAI failed to demonstrate several of the major components of the two systems, as required by the solicitation.<sup>1</sup>

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

#### BACKGROUND

##### The RFP

The RFP required proposals for the design, development, manufacture, integration, testing, and delivery of visual system upgrades for three U.S. Navy helicopter weapon system training devices: Device 2F146 (corresponding to the SH-60F Seahawk/CV Helo); Device 2F106 (corresponding to the SH-2F Seasprite); and Device 2F135 (corresponding to the SH-60B Seahawk). The trainers, which are used to simulate

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<sup>1</sup>In a previous protest challenging the same award decision, Eyring argued that the Navy had improperly classified the image generator proposed by AAI as a non-developmental item (NDI), thereby permitting AAI to avoid incurring the expense of complying with the solicitation's extensive testing requirements for trainer unique equipment. Eyring also complained that AAI's proposed image generator and display systems failed to comply with certain of the RFP's technical requirements and that the Navy had allowed AAI a longer period than that provided for in the solicitation to conduct its system demonstration. By decision dated January 24, 1992, we denied the protest in part and dismissed it in part. Eyring Corp., B-245549.2, Jan. 24, 1992. (This decision was also issued subject to the terms of a General Accounting Office protective order.)

helicopter flights in varying atmospheric and flight conditions, consist of five principal subsystems: a host computer; an image generator; an image display system (i.e., projectors, a screen, and a dome); an instructor monitor and control system; and a motion system. The upgrade was to include replacement of the image generation and display systems on all three devices; upgrade of the instructor display processing system of Device 2F106; replacement of the motion systems of Devices 2F106 and 2F135; and integration of the image and display systems, motion systems, and instructor displays of the three devices.

The RFP set forth in detail the required characteristics of the image generation and display systems. The specification stated that these systems were to provide real-time "out-the-window" visual displays of the surrounding environment corresponding to the simulated aircraft flight conditions received from the host trainer. The systems were to compute and display scenes consisting of point lights and surfaces (polygons) combined with stored image data. The specification further required that the systems provide all of the visual information needed by the crew to assess aircraft position, attitude, and motion and that it provide realistic depth perception over 3-dimensional (3-D) and flat terrain and ocean surfaces.

The specification required that the image generator be capable of generating a number of different types of scenes, including airfield formation flight, ocean, shipboard landing, anti-submarine warfare, and sea search and rescue scenes. The specification also required that the image generator be capable of simulating a variety of atmospheric and meteorological effects (i.e., clouds, haze, fog, rain, lightning, sky and horizon, and storm cells) and that it be capable of simulating various conditions of natural illumination (corresponding to day, dawn, dusk, and night) and artificial illumination, such as landing lights and search lights. Further, the specification required that the system be capable of simulating motion, including moving models, within the scenes depicted. In addition, it set forth a number of requirements relating to image quality and quantity, including requirements concerning luminance, contrast, color, image perspective and geometric accuracy, adjacent channel matching, video and update rates, flicker, and polygonal capacity.

The RFP provided for award to the offeror submitting the lowest priced, technically acceptable proposal. The solicitation required that during discussions each offeror conduct a demonstration of the major components of its visual system to substantiate required performance characteristics which could not be conclusively proven by data and analysis.

## Receipt of Proposals and Award

Six offerors, including AAI and Eyring, submitted proposals in response to the RFP. The source selection board determined that all proposals, though marginal, were susceptible of being made acceptable through discussions and recommended that all six offers be included in the competitive range.

The agency conducted extensive oral and written discussions with all offerors and requested revised proposals. The agency determined that none of the revised proposals was acceptable, notified offerors of the remaining deficiencies in their proposals, and requested another round of revised proposals. Upon evaluation of these proposals, all offers were determined to be technically acceptable. The agency then requested best and final offers (BAFO). AAI offered the lowest price of \$44,892,684; Eyring's price was second low.

In its original proposal, AAI, along with Eyring and two of the other competitors, proposed to furnish an Evans and Sutherland (E and S) ESIG-3000 image generator. After the system demonstration, however, where, according to AAI, the E and S system performed poorly, AAI amended its proposal to replace the E and S system with a Star Technologies, Inc. Graphicon 2000 (G2000) image generator configured to meet the specific requirements for the visual upgrade. In a second demonstration, AAI demonstrated the commercially available model of the G2000 family, the G2000/PTX. AAI was awarded the contract as the lowest priced, technically acceptable offeror.

## COMPLIANCE WITH TECHNICAL REQUIREMENTS

Eyring alleges that the image generator and display systems proposed by AAI fail to comply with a number of the RFP's technical requirements.<sup>2</sup> In particular, the protester asserts that AAI's proposed system does not provide for correct depiction of atmospheric and meteorological effects without undesirable image artifacts at each point in the scene. The protester further argues that AAI's proposed image generator does not have the capacity to provide the required number of polygons and that it will not handle at least 8 moving models at a rate of 60 Hertz (i.e., 60 times per second) and offer the capability of being expanded to

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<sup>2</sup>Eyring also alleged initially that the agency had incorrectly determined that both the lenticular screen and the dome assembly proposed by AAI as part of its display system qualified as NDI. In its report, the agency stated that neither the screen nor the dome had been proposed as NDI. We accordingly dismiss these bases of protest.

16 moving models through the addition of circuit cards only, as required by the solicitation.<sup>3</sup> In addition, the protester asserts that AAI has not properly manufactured, applied, and configured its display system, and therefore cannot comply with the solicitation's requirements concerning viewing volume, luminance, luminance variation, contrast, and image perspective and geometric accuracy.

We will examine an evaluation of technical proposals to ensure that it was reasonable and consistent with the stated evaluation criteria. Fairfield Mach. Co., Inc., B-228015; B-228015.2, Dec. 7, 1987, 87-2 CPD ¶ 562. A protester's disagreement with the agency's judgment in these matters is not sufficient to establish that the agency acted unreasonably. DBA Sys., Inc., B-241048, Jan. 15, 1991, 91-1 CPD ¶ 36.

#### Atmospheric and Meteorological Effects

The solicitation required that the image generator be capable of simulating atmospheric and meteorological effects, including the attenuation and scattering of light by the atmosphere due to clouds, fog, rain, and haze, "with the contribution of each effect accounted for at each point in the scene (as a function of the distance along the line-of-sight through each visibility region)." (Emphasis added.) The specification also required that undesirable image artifacts, including quantization and Mach bands, that might result from image processing, be minimized.

AAI's proposal stated that its image generator would perform haze calculations on a basis other than per pixel. Eyring contends that this approach does not comply with the solicitation's requirements. The protester insists that the RFP required that calculations be performed for each point in the scene, i.e., per pixel. Eyring further asserts that the methodology proposed by AAI may result in quantization, a distracting effect which causes large polygons, such as those in a simulated airport runway, to appear to sink relative to small polygons, such as those in a simulated building adjacent to the runway.

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<sup>3</sup>In addition, Eyring argued initially that AAI's proposed image generator failed to comply with the solicitation requirements for blending at boundaries, spare processing capacity, a scene update rate of 60 Hertz and for critical item resolution of 4 arc minutes per optical line pair. The agency responded to each of these allegations in its report, and in commenting on the report, the protester failed to take issue with any of the responses. We therefore consider it to have abandoned these issues. Ariay Elecs. Corp., B-243080, July 1, 1991, 91-2 CPD ¶ 3.

We disagree with the protester's interpretation of the specification language. The specification required that the contribution of each effect be "accounted for" at each point in the scene, not that calculations be performed for each point. Thus, we think that the agency could reasonably have concluded that the methodology proposed by AAI, which did account for the contribution of each effect at each point, satisfied the requirement.

With regard to Eyring's assertion that AAI's proposed methodology may result in quantization, the Navy responds that no artifacts appeared during AAI's system demonstration. Further, according to the agency, other features of the proposed methodology preclude the formation of artifacts. We think that the agency reasonably determined, based on these facts, that AAI's proposed system would minimize undesirable image artifacts, as required by the solicitation.

#### Polygonal Capacity and Throughput

The specification required that polygons be provided in features other than terrain as follows:

|                     | <u>System</u> | <u>Channel</u> |
|---------------------|---------------|----------------|
| Moving models       | 700           | 350            |
| Geo-specific        | 600           | 300            |
| Generic 3-D fill-in | 2,500         | 500            |

It further provided that throughput in polygons must be substantially higher than the sum of the above numbers and the number of polygons required to meet terrain requirements. Although the specification did not define precisely how many polygons this would be, the agency maintains that all of the offerors, including Eyring, understood that at a minimum, approximately 2,500 to 3,000 polygons were required.

The protester contends that AAI's proposed image generator will not meet this requirement. Eyring asserts that the calculations used by AAI to estimate the polygonal capacity of its proposed image generator were flawed and failed to take into consideration normal and expected system throughput degradation factors.

We see no evidence that AAI's calculations were flawed; the agency in fact repeated the calculations and obtained identical results. In addition, based on the record before us, we are not persuaded that AAI failed to take into consideration expected system throughput degradation factors. Offerors were required to take factors that would degrade performance into account in computing their data, and we see no evidence that AAI failed to do so. We

disagree with the protester's assertion that AAI's failure to discuss in its proposal the various factors that might reduce system throughput should be viewed as evidence that it failed to consider degrading factors, since, according to the agency, none of the proposals discussed degrading elements in addressing the solicitation requirement concerning throughput.

#### Moving Models

The specification required that the proposed image generator be capable of displaying simultaneously a minimum of 8 moving models such as ships, aircraft, or trucks, and that it be capable of updating position and attitude data for all moving models at a rate not less than 60 Hertz. In addition, the specification stated that moving model capacity must be expandable to 16 by the addition of circuit cards only. The protester contends that AAI's proposal did not demonstrate compliance with these requirements.

The record shows that the image generator that AAI demonstrated supports four moving models and that replacement of the primary processor chip on the object processor boards with a later version of the chip increases the capacity to eight. The record further shows that AAI has proposed an additional technical modification that will permit expansion of the system to 16 moving models. Thus, we think that the agency could reasonably have concluded that AAI's proposed image generator complied with the solicitation's requirements for moving models.

#### Display System

Eyring alleged in its letter of protest that AAI had not properly manufactured, applied, or configured its display system, and that it therefore could not comply with solicitation requirements regarding viewing volume, luminance, luminance variation, contrast, and image perspective and geometric accuracy.<sup>4</sup>

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<sup>4</sup>The specification set forth the following requirements concerning viewing volume, luminance variation, and image perspective and geometric accuracy:

Viewing volume: The viewing volume for both the pilot and copilot is 9 inches radius sphere centered at the design eyepoint.

Luminance variation: Luminance shall be not less than 65 percent of the specified average maximum luminance of all points in each display zone. Luminance at each point in the display shall not

We dismiss these allegations as speculative. As the protester itself recognizes elsewhere in its protest and comments, AAI had not manufactured its screen or applied that screen to its dome at the time it submitted its proposal--nor did the solicitation require that it have done so. Further, the protester has provided no evidence to support its allegation that AAI has not properly configured its system.

In commenting on the agency report, the protester raises an additional argument concerning AAI's proposed display system i.e., that given the lack of information in AAI's proposal concerning the lenticular material that it proposed to furnish, its proposed method of applying the screen to the dome, the shape of the dome, and the proposed configuration of the display system components, the agency could not reasonably have determined that the proposed display configuration would comply with the previously listed technical requirements.

We dismiss this argument as untimely. Eyring received the portions of AAI's proposal describing its proposed lenticular screen and dome on October 29, but did not raise this argument until it filed its comments on the agency report on November 27. Thus, the argument was not raised within 10 days after the protester learned of its basis for protest, as required by our Bid Protest Regulations, 4 C.F.R. § 21.2(a)(2) (1992).

In any event, we do not think that it was unreasonable for the agency to have concluded, based on information in AAI's proposal and its experience with other lenticular screens on domes, that there was a reasonable likelihood that the proposed display system would comply with the previously noted technical requirements. The protester has not persuaded us that AAI will be unable to achieve the required lack of variation in luminance with a lenticular screen. Eyring argues that variations in luminance will occur because light reflected off a dome with a lenticular screen

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vary by more than 20 percent between any two points within the specified viewing volume.

Image perspective and geometric accuracy: The system shall generate and display true perspective images of the 3-D visual scene.

In our previous decision, we considered the protester's argument that AAI's proposed display system fails to meet the minimum luminance and contrast values set forth in the specification; thus, we will not address these arguments here.



is brightest at the spectral angle; however, as the agency points out, reflections are brightest at the spectral angle on painted screens, but not on lenticular ones. In fact, as AAI notes, luminance is uniform through the useable bend angle on a lenticular screen.

Finally, the record does not support the protester's assertion that image perspective and geometric accuracy may be affected by the use of a lenticular screen as opposed to a painted one, and that the agency could therefore not have reasonably determined that AAI's proposed system would satisfy that technical requirement without requiring additional information and revised analysis from AAI. Image perspective and geometric accuracy are determined by the combination of the image generator and the projector and are not affected by the screen material.

#### DEMONSTRATION

The RFP required that offerors conduct a demonstration of the visual system major components during technical discussions to substantiate proposed performance characteristics which could not be conclusively proven by data and analysis alone. Performance characteristics to be demonstrated included image perspective and geometric accuracy, flicker, collimation, and adjacent channel matching. The solicitation further required that the system demonstrated be comparable in performance to the specification requirements and that where the demonstration system differed from the proposed one, the required changes be described and an assessment of the development, performance, and schedule risk be provided.

The protester alleges that AAI failed to conduct a complete demonstration of its proposed visual system, as required by the RFP. Eyring complains that AAI failed to demonstrate its proposed system's ability to provide image perspective and geometric accuracy, flicker, collimation, or adjacent channel matching.<sup>5</sup> In addition, the protester objects to

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<sup>5</sup>The specification set forth the following requirements with regard to these characteristics:

**Flicker:** Flicker due to image refresh rate shall not be noticeable for the image luminance as specified.

**Adjacent channel matching:** Variation in color, brightness, contrast, resolution and collimation between adjacent channel displays shall not be immediately noticeable for the full range of simulated conditions.

AAI's failure to demonstrate its light point board as a system component and its failure to demonstrate its lenticular screen and dome.

The Navy denies Eyring's allegations. The agency reports that AAI acceptably demonstrated image perspective and geometric accuracy, flicker, and adjacent channel matching. Further, according to the agency, neither AAI nor Eyring was required to demonstrate collimation since neither proposed a collimated display.

In response, Eyring asserts that although AAI may have demonstrated the previously listed characteristics during its system demonstration, portions of that demonstration were invalidated after AAI revised its proposal to substitute a lenticular screen for a unity gain painted screen. According to Eyring's expert, use of a lenticular screen, as opposed to a unity gain one, could have adversely affected AAI's ability to meet solicitation requirements regarding image perspective, geometric accuracy, and adjacent channel matching.<sup>6</sup> The expert offers no explanation, however, as to how a change in the screen material could adversely affect the solicitation requirement regarding adjacent channel matching. Further, although he purports to explain how the use of a lenticular screen as opposed to a unity gain one could affect the system's ability to generate and display true perspective images of the 3-D visual display, the explanation demonstrates only that image perspective is determined by the location of the projector and the viewer. Moreover, both the agency and AAI deny that image perspective and geometric accuracy are affected by the screen material. We are therefore unable to conclude, based on the record before us, that AAI's demonstration of the listed characteristics was invalidated by its substitution of a lenticular screen for a unity gain one.

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Collimation: All infinity display shall have the same collimation distance within +/- 0.03 diopters for the respective centers and edges of each display even if the displays are separated in the field of vision.

Image perspective and geometric accuracy (see footnote 6).

<sup>6</sup>The protester does not allege that the substitution of a lenticular screen for a painted one could have adversely affected its ability to meet the solicitation requirement regarding flicker.

With regard to Eyring's complaint that AAI failed to demonstrate its proposed light point board as a system component, the agency maintains that the RFP did not require that the light point board be integrated with the image generator during the demonstration. Since the protester has not taken issue with the agency position in commenting on the agency report, we consider it to have abandoned this issue. Arjay Elecs. Corp., supra.

In response to Eyring's complaint regarding AAI's failure to demonstrate its proposed lenticular screen, AAI did not demonstrate its proposed lenticular screen because at the time it conducted its system demonstration, its proposal incorporated a painted screen rather than a lenticular one. After AAI's demonstration, the Navy advised AAI that based on its measurements of the luminance of AAI's proposed projector and its extrapolation of both measurements to the proposed display configuration, it did not believe that the system as proposed would meet the minimum luminance values set forth in the specification. In response, AAI revised its proposal to substitute a lenticular screen for the painted one, and, according to the agency, showed that the required performance could be achieved using this type of screen. The Navy insists--and we agree--that since the system's ability to achieve the required performance could be ascertained from data and analysis, demonstration of the substituted screen was not required.

Finally, with regard to the protester's complaint concerning AAI's failure to demonstrate its proposed dome assembly, the agency contends that the RFP did not require a demonstration of the dome assembly since the presence of this item was not necessary to demonstrate the required performance characteristics. In commenting on the agency report, the protester does not dispute the agency position; thus, we consider it to have abandoned the issue as well.

#### SUFFICIENCY OF THE AGENCY RECORD

In commenting on the agency report, the protester raises a number of additional concerns regarding the way in which the agency conducted this procurement. First, the protester asserts that the Source Selection Policy Council, which was responsible for approving the evaluation of proposals as technically acceptable, approved AAI's proposal on the basis of blatantly incorrect and misleading information presented to it in the final proposal evaluation report; thus, the protester maintains, its decision was a legal nullity.

We dismiss this basis of protest as untimely. The protester received a copy of the final proposal evaluation report on October 17, but did not raise its argument concerning alleged inaccuracies contained therein until November 27,

when it filed its comments on the agency report. Since a protest other than a protest based on an alleged impropriety in a solicitation must be filed not later than 10 days after the basis of protest is known or should have been known, 4 C.F.R. § 21.2(a)(2), the protest is untimely.

The protester also argues that the agency failed to document its evaluation of proposals, as required by the Federal Acquisition Regulation (FAR) and the proposal evaluation plan. In this regard, the protester notes that FAR § 15.608(a)(2) provides, with regard to technical evaluation, that:

"If any technical evaluation is necessary beyond ensuring that the proposal meets the minimum requirements in the solicitation, the cognizant technical official, in documenting the technical evaluation, shall include--

- (i) The basis for evaluation;
- (ii) An analysis of the technically acceptable and unacceptable proposals, including an assessment of each offeror's ability to accomplish the technical requirements;
- (iii) A summary, matrix, or quantitative ranking of each technical proposal in relation to the best rating possible;
- and
- (iv) A summary of findings."

The protester also cites FAR § 15.612(d), which requires that agencies, when making formal source selection decisions, prepare documentation setting forth "the relative differences among proposals and their strengths, weaknesses, and risks in terms of the evaluation factors," as well as "the basis and reasons for the decision." In addition, the protester notes that the proposal evaluation plan stated that evaluations should be fully documented with evaluation worksheets describing, in detail, the justifications for finding a proposal acceptable, marginal, or unacceptable.

We do not think the agency violated FAR § 15.608(a)(2) by failing to document its evaluation of AAI's compliance with the solicitation's technical requirements. Subsection 15.608(a)(2) applies only where technical evaluation is necessary beyond ensuring that a proposal meets the minimum requirements of the solicitation. Here, the RFP provided for award to the lowest priced, technically acceptable offeror; thus, evaluation beyond ensuring compliance with the solicitation's minimum requirements was not required. Nor does section 15.612(d) apply since this procurement did not follow formal source selection procedures since award

was to be made to the lowest priced, technically acceptable offeror. Finally, we will not consider the agency's alleged noncompliance with the proposal evaluation plan since the proposal evaluation plan is an internal agency document that does not give outside parties any rights. Burnside-Ott Aviation Training Center, Inc.; Reflectone Training Sys., Inc., B-233113; B-233113.2, Feb. 15, 1989, 89-1 CPD ¶ 158. Accordingly, we deny this basis of protest.

The protest is denied in part and dismissed in part.

James F. Hinchman  
General Counsel