

Selection Statement

Inflatable Reentry Vehicle Experiment-3 (IRVE-3) and Other Inflatable Analysis & Development RFP: NNL10324801R

On June 30, 2010, the final evaluation was presented to me by the NASA Source Evaluation Team (SET) designated to evaluate proposals for the IRVE-3 procurement.

Background

The contract will provide the design, development, fabrication, and testing of an inflatable aeroshell (both an engineering development unit and a flight unit) for an IRVE-3 reentry vehicle (RV) to be launched by the Government on a Black Brant XI at Wallops Flight Facility. The contractor will also support integration of the flight article to the RV skin section, and will support IRVE-3 system testing. The contract will also include an Indefinite Delivery/Indefinite Quantity (IDIQ) Contract Line Item (CLIN) with a maximum value of \$2M. The Government may issue tasks against this CLIN for additional design, development, fabrication or testing of the IRVE-3 system or other inflatables and for other inflatable technology development and analysis, as needed.

Market research was conducted using a Sources Sought Synopsis on the NASA Acquisition Internet Service (NAIS) and FedBizOpps website. There were 11 respondents to the Synopsis. The procurement was conducted as a full and open competition.

The IRVE-3 procurement will result in award to the offeror who presents the best value to the Government based on the evaluation of Mission Suitability, Cost/Price and Past Performance evaluation factors. The contract will be cost-plus-fixed-fee. The period of performance for CLIN 1 will be 33 months. The period of performance including CLIN 2 is 60 months.

The Request for Proposal (RFP) was released on February 12, 2010, with a response date of March 12, 2010. The following companies responded to the RFP:

ILC Dover LP (ILC)
Airborne Systems North America of CA, Inc. (Airborne)
Takata TK Holdings, Inc.

Evaluation Factors

Prior to the issuance of the RFP, a Source Evaluation Team (SET) was designated to conduct an evaluation of proposals received in response to the RFP. The proposals were evaluated in accordance with the evaluation criteria contained in Section M of the RFP. The RFP set forth the following three evaluation factors:

Factor 1: Mission Suitability
Factor 2: Cost/Price
Factor 3: Past Performance

The Mission Suitability Subfactors are as follows:

Subfactor 1, Understanding the Requirements and Technical Approach, including approach for performing the technical requirements and approach to design and/or manufacturing of the inflatable aeroshell

Subfactor 2, Management, including Key Personnel and Facilities

Subfactor 3, Small Disadvantaged Business Participation – Contract Targets

The RFP stated that overall, in the selection of an offeror(s) for contract award, Mission Suitability, Cost, and Past Performance will be of essentially equal importance. Mission Suitability and Past Performance, when combined, are significantly more important than Cost. The RFP also stated that within the Mission Suitability factor, Subfactor 1 is more important than Subfactors 2 and 3 combined, and Subfactor 2 is significantly more important than Subfactor 3.

Factor 1—Mission Suitability

The SET used the following adjectival ratings to evaluate the Mission Suitability Factor, as specified in the RFP.

Adjectival Rating	Definitions
Excellent	A comprehensive and thorough proposal of exceptional merit with one or more significant strengths. No deficiency or significant weakness exists.
Very Good	A proposal having no deficiency and which demonstrates over-all competence. One or more significant strengths have been found, and strengths outbalance any weaknesses that exist.
Good	A proposal having no deficiency and which shows a reasonably sound response. There may be strengths or weaknesses, or both. As a whole, weaknesses not off-set by strengths do not significantly detract from the offeror's response.
Fair	A proposal having no deficiency and which has one or more weaknesses. Weaknesses outbalance any strengths.
Poor	A proposal that has one or more deficiencies or significant weaknesses that demonstrate a lack of overall competence or would require a major proposal revision to correct.

Definitions:

The SET used the following definitions to develop their findings:

Significant Strength - An aspect of the proposal which appreciably increases the probability of successful contract performance

Strength - An aspect of the proposal which increases the probability of successful contract Performance

Weakness - A flaw in the proposal that increases the risk of unsuccessful contract performance

Significant Weakness - A flaw in the proposal that appreciably increases the risk of unsuccessful contract performance

Deficiency - A material failure of a proposal to meet a Government requirement or a combination of significant weaknesses in a proposal that increases the risk of unsuccessful contract performance to an unacceptable level

Factor 2 — Cost/Price

The RFP stated that NASA will conduct an analysis of the proposed cost to determine its reasonableness, acceptability and extent to which it reflects performance and resources addressed in the technical proposal. In addition, NASA will perform an analysis of the proposed cost elements and fee to assess cost realism and the offeror's capability to accomplish the contract objectives within the cost proposed. A lack of resource realism may adversely affect Mission Suitability ratings, and result in cost realism adjustments under this cost factor. NASA also will develop a probable cost that factors in NASA's technical evaluation for purposes of determining "best value." The RFP specified the maximum IDIQ value of \$2M and stated that no cost evaluation would be performed for CLIN 2.

Factor 3 — Past Performance

The RFP stated that NASA will evaluate each offeror's record (including the record of any significant subcontractors) of performing services that are similar in size, scope and complexity to the requirements of the solicitation. The confidence rating assigned to Past Performance will reflect consideration of information contained in the proposal, past performance evaluation input provided through customer questionnaires and other references, if any, that NASA may contact for additional past performance information.

Rating Description

The SET used the following confidence level ratings to evaluate the Past Performance Factor (NFS 1815.305). These confidence ratings reflect the Government's confidence in the offeror's ability to perform the solicitation requirements. Each of the ratings has a "performance" component and a "relevance" component. Both components contribute to a particular rating.

Very High Level of Confidence

The Offeror's relevant past performance is of exceptional merit and is very highly pertinent to this acquisition; indicating exemplary performance in a timely, efficient, and economical manner; very minor (if any) problems with no adverse effect on overall performance. Based on the Offeror's performance record, there is a very high level of confidence that the Offeror will successfully

perform the required effort.

High Level of Confidence

The Offeror's relevant past performance is highly pertinent to this acquisition; demonstrating very effective performance that would be fully responsive to contract requirements with contract requirements accomplished in a timely, efficient, and economical manner for the most part with only minor problems with little identifiable effect on overall performance. Based on the Offeror's performance record, there is a high level of confidence that the Offeror will successfully perform the required effort.

Moderate Level of Confidence

The Offeror's relevant past performance is pertinent to this acquisition, and it demonstrates effective performance; fully responsive to contract requirements; reportable problems, but with little identifiable effect on overall performance. Based on the Offeror's performance record, there is a moderate level of confidence that the Offeror will successfully perform the required effort.

Low Level of Confidence

The Offeror's relevant past performance is at least somewhat pertinent to this acquisition, and it meets or slightly exceeds minimum acceptable standards; adequate results; reportable problems with identifiable, but not substantial, effects on overall performance. Based on the Offeror's performance record, there is a low level of confidence that the Offeror will successfully perform the required effort. Changes to the Offeror's existing processes may be necessary in order to achieve contract requirements.

Very Low Level of Confidence

The Offeror's relevant past performance does not meet minimum acceptable standards in one or more areas; remedial action required in one or more areas; problems in one or more areas which adversely affect overall performance. Based on the Offeror's performance record, there is a very low level of confidence that the Offeror will successfully perform the required effort.

Neutral (N)

In the case of an Offeror without a record of relevant past performance or for whom information on past performance is not available, the Offeror may not be evaluated favorably or unfavorably on past performance [see FAR 15.305(a)(2)(ii) and (iv)].

Evaluation Procedures

The SET conducted the evaluation of proposals in accordance with Section M of the RFP. The SET began its evaluation upon receipt of the Past Performance Volumes (Volume III), which were received from the offerors prior to the proposal due date. The SET members independently reviewed each offeror's Past Performance Proposal, all of the past performance questionnaires, and the information obtained from the NASA Past Performance Database (PPDB), and DoD's Past Performance

Information Retrieval System (PPIRS). The SET considered all of the "performance" and "relevance" findings in assigning a confidence rating for each offeror as defined in the RFP.

Upon receipt of Volumes I and II of the proposals, the Contracting Officer conducted an initial review of each Technical Proposal (Volume I) and the Business Proposal (Volume II) to determine if any were unacceptable as defined in NASA FAR Supplement 1815.305-70. None were found to be unacceptable; thus all warranted a full evaluation.

The SET voting members then performed a detailed individual review of each offeror's Mission Suitability proposal and documented strengths and weaknesses for each subfactor. The designated SET consultant members provided input in their areas of expertise to the voting members. After completion of the individual evaluations for each subfactor, the SET voting members met to discuss individual findings and to develop consensus strengths and weaknesses for each of the offerors. The SET voting members then reviewed the findings for each offeror, and performed a check of the findings to ensure that all proposals were evaluated consistently and objectively. Upon completion of the review, the SET voting members assigned adjective ratings for each subfactor.

Finally, the SET reviewed each offeror's Business Proposal to determine whether the cost proposal was consistent with the technical approach. The cost proposals were assessed to ensure compliance with the RFP. The SET provided the results of its review to the NASA Cost/Price Analyst who developed a probable cost for each offeror.

A competitive range was established on April 30, 2010. ILC and Airborne were found to be the most highly rated proposals, all factors considered, and were included in the competitive range. Discussions were held with both offerors and Final Proposal Revisions (FPR) were received on May 25, 2010. The SET evaluated the responses to questions and FPR's and revised their previous findings accordingly.

The SET presented its findings to me on June 10, 2010. We discussed each strength and weakness, past performance findings, and the cost issues. A key discussion during that meeting centered on the ILC weakness regarding scalability. The SET confirmed that the ILC responses to discussion questions and FPR increased the severity of the weakness and that it should be reclassified as a significant weakness. The result of that meeting was my decision that discussions should be re-opened because I did not feel I could select either offeror at that time because of the existence of a significant weakness in one case and cost issues in both cases. The Procurement Officer concurred in re-opening discussions in accordance with NFS 1815.307. Negotiations were subsequently conducted with both offerors and Final Proposal Revisions were received on June 28, 2010. Following receipt of the FPR's, the SET findings were revised to reflect the information provided. I received the final findings on June 30, 2010.

Evaluation Findings

Factor 1 – Mission Suitability

Set forth below is a summary of the Mission Suitability Findings for the two offerors in the Competitive Range.

	ILC Dover	Airborne
Subfactor 1, Understanding the Requirements & Technical Approach	Good	Excellent
Subfactor 2, Management	Good	Good
Subfactor 3, SDB Participation	Fair	Fair

ILC

ILC received a rating of Good for Subfactor 1, and was cited with no significant strengths, six strengths, no significant weaknesses, and one weakness. Strengths were cited for ILC's strong understanding of the SOW tasks and of the fabrication of large soft-good components. ILC also received a strength for a strong understanding of how to maximize the stiffness of the inflated aeroshell structure and the interface between the inflatable structure and the centerbody. Another strength was cited for a construction method that is an improvement over IRVE-II, reducing the complexity of integration to the centerbody. Even though the approaches were demonstrated with a shape other than the IRVE-3 complicated flight geometry, ILC received two strengths, one for the mass estimate for the IRVE-3 inflatable aeroshell concept, which demonstrates an understanding of how to minimize the mass of the aeroshell system, and a second strength for the construction and test of an inflatable test article to the IRVE-3 design pressure, which demonstrates a strong understanding of how to maximize the inflated aeroshell's structural strength at the design temperature. A weakness was also assigned. The offeror's design approach was identified as a weakness because of limitations to the scalability of the technical approach. While scaling this construction approach to sizes required for future missions is technically feasible, it will require substantial production hours, which will impact the project cost and schedule. For Subfactor 2, ILC received a rating of Good, with no strengths or weaknesses. For Subfactor 3, ILC received a rating of Fair as no qualified SDB contractors were identified in the proposal.

Airborne received a rating of Excellent for Subfactor 1, and was cited with four significant strengths, five strengths, and no weaknesses or significant weaknesses. Airborne received a significant strength for an innovative structure which provides significant advantages over the IRVE-II design, reducing the leak rate, minimizing the number of structural seams, and handling the radial load away from high temperatures generated by reentry heating. This approach recognizes the technical challenges relating to component mass, leak rate, strength at temperature, allowable temperature, interface stiffness, integration complexity, and packing volume. Airborne received another significant strength for design features that demonstrate scalability of the technical approach and minimize mass and complexity growth with vehicle size. In addition, Airborne has used construction techniques identical to what was proposed. A third significant strength was assigned for a combination of features that maximizes the structural strength at operating temperature and results in a large factor of safety. The fourth significant strength assigned to Airborne was for a strong understanding of how to design a system that minimizes integration complexity of the aeroshell structure to the centerbody in addition to minimizing risk of a defect impacting structural integrity. Airborne also received five strengths. Strengths were cited for a thorough understanding of ceramic softgoods design and a manufacturing capability relevant to TPS on

the inflatable aeroshell; for a fabrication method which improves the IRVE-II geometry; for an inflatable aeroshell concept that demonstrates a strong understanding of how to minimize the mass of the inflatable structure; and for a construction which demonstrates a strong understanding of how to maximize the stiffness of the inflatable aeroshell structure and the interface between the inflatable structure and the centerbody. A strength was also identified for a strong understanding of how to maximize the continuous use and peak allowable temperature of inflated structures. For Subfactor 2, Airborne received a rating of Good, with no strengths or weaknesses. For Subfactor 3, Airborne received a rating of Fair as no qualified SDB contractors were identified in the proposal.

Factor 2, Cost

An analysis of the proposed price was performed to assess price reasonableness and cost realism, a clear understanding of the requirements, and the ability to perform the contract. Probable cost adjustments were made to each offeror's proposed prices. Negotiations were conducted based on their proposed approaches with both offerors. In the final findings, the ILC probable cost was approximately 30% lower than the Airborne probable cost for CLIN 1. Since the RFP specified that no cost evaluation would be performed for CLIN 2, only CLIN 1 cost was evaluated or considered in the source selection decision.

Factor 3, Past Performance

The SET evaluated the offeror's past performance records in accordance with M.4 of the RFP. The SET considered its record of performing contracts similar in size, scope and complexity to IRVE 3. Both the performance record and the relevance of the experience were evaluated. A confidence rating was assigned in accordance with NFS 1815.305.

Offeror	Performance	Relevance	Level of Confidence
Airborne	Very Effective	Highly Pertinent	High
ILC	Effective	Highly Pertinent	Moderate

ILC was assigned a "Moderate" level of confidence rating based on an overall effective performance record and past performance which is highly pertinent to the IRVE-3 requirements. ILC has a wide range of highly pertinent experience with soft goods, inflatable structures, high temperature materials, integrating soft goods with rigid flight articles (combined systems), and sounding rocket flight projects. For IRVE and IRVE-II projects, they designed, developed, and fabricated inflatable flight articles and integrated them to the rigid centerbody. ILC has worked on many NASA projects, giving them considerable experience with working with government protocol and procedures, as well as working projects of similar size and complexity to IRVE-3. ILC received Very Good to Excellent technical performance ratings from customers on relevant work and Good to Excellent ratings for schedule performance. Cost ratings spanned the full range from Poor/Unsatisfactory to Excellent. On several relevant contracts, ILC experienced a pattern of problems of cost overruns and failure to give the Government adequate notice of the overruns. Considering both the relevance of the experience and ILC's performance under previously awarded contracts, a Moderate Level of Confidence rating was assigned.

Airborne was assigned a "High" level of confidence rating based on an overall very effective performance record and past performance which is highly pertinent to the IRVE-3 requirements. The Airborne team was found to have highly pertinent experience, with a broad range of experience, including producing high caliber spaceflight systems. Airborne has very applicable experience working with sounding rocket class systems and significant experience with design, analysis, fabrication, testing and integration of air bags and parachutes onto launch vehicles. The proposed subcontractors augment the team experience in the design and production of inflatable decelerator structures and with flexible thermal protection systems. The Airborne team members have worked on many NASA projects, giving them considerable experience with working with government protocol and procedures, as well as working projects of similar size and complexity to IRVE-3. The Airborne team received ratings from Satisfactory to Excellent for technical, schedule, and cost control, with the great preponderance of the ratings being Very Good to Excellent. Considering both the relevance of the experience and the Airborne team's performance under previously awarded contracts, a High Level of Confidence rating was assigned.

Selection Determination

In Factor 1, Mission Suitability, I noted that both offerors, Airborne and ILC, received the same ratings and findings for Subfactors 2 and 3 so I have concluded there are no discriminators for those subfactors.

For Subfactor 1, Airborne received a significantly higher rating of Excellent, as compared to ILC's rating of Good. As shown in the summary of Mission Suitability findings above, Airborne's rating is supported by four significant strengths which, in my view, clearly offer the Government a superior approach for performing the technical requirements and approach to design and manufacturing of the inflatable aeroshell. A particular discriminator between the offerors is the scalability of the technical approach. Airborne received a significant strength because the proposed inflatable structure demonstrates scalability of the technical approach, and minimizes mass and complexity growth with vehicle size, which appreciably increases the probability of successful use on larger aeroshells. ILC received a weakness for their design approach because of limitations on the scalability. While scaling ILC's construction approach to sizes required for future missions is technically feasible, it will require substantial production hours, which will impact the project cost and schedule. Scalability was called out as a specific element under Subfactor 1. It is important because, as the RFP states, recent systems analysis studies indicate that inflatable aeroshells are an enabling technology for high mass Mars systems. As also stated in the RFP, the intent is to feed forward this technology/capability development to flight that will expose the components to more severe environments. Because of the intent to feed forward the technology, the CLIN 2 statement of work includes tasks for developing a mass estimation tool for a range of inflatable aeroshell sizes, up to 50 meters (165 feet) and for design, development, and fabrication of an engineering development unit of a larger scale aeroshell (on the order of 15 meters (50 feet)). After consideration of all strengths and weaknesses, it is my judgment that the ratings assigned to the offerors for Subfactor 1, Mission Suitability, are appropriate. I further note that the RFP stated that within the Mission Suitability factor, Subfactor 1 is more important than Subfactors 2 and 3 combined, and Subfactor 2 is significantly more important than Subfactor 3. Thus, I have concluded that Airborne, with its higher rating in Subfactor 1, Understanding the Requirements and Technical Approach, has a significantly superior proposal in Factor 1, Mission Suitability.

As regards Factor 3, Past Performance, I noted that both offerors have highly pertinent experience. However, while the Airborne team's performance record did not reflect any significant cost problems, there was a pattern of problems on several relevant ILC contracts regarding cost overruns and untimely reporting of these overruns. Therefore, it is my judgment that Airborne justifiably has the superior Past Performance confidence rating.

As regards Factor 2, Cost, ILC has the lowest probable cost, which is approximately 30% lower than Airborne's cost for CLIN 1.

In summary, the SET found, and after carefully reviewing and discussing the findings with the SET, I agree that Airborne has the superior proposal for two of the three evaluation factors, Mission Suitability and Past Performance. In weighing the cost difference between the offerors, I considered the recurring problems that ILC has experienced with overruns on similar contracts. It is my judgment that the lower estimated cost offered by ILC does not outweigh the higher Past Performance level of confidence and the superior Mission Suitability proposal offered by Airborne.

For these reasons, I conclude that selection of Airborne Systems is in the Government's best interest and provides the best value to the Government. In making this decision, I have considered the three evaluation factors as essentially equal in importance.

Rosemary C Froehlich

7-9-10

Rosemary C. Froehlich
Source Selection Authority