

# Mesoscale Atmospheric Instrument Support Services (MAISS) Source Selection Statement

Solicitation Number NNG14481818R

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I have reviewed the findings of the Source Evaluation Board (SEB) appointed to evaluate proposals in connection with the Mesoscale Atmospheric Instrument Support Services (MAISS) acquisition.

## *Procurement Description*

The purpose of this MAISS contract is to support the Mesoscale Atmospheric Processes Laboratory. The Mesoscale Atmospheric Processes Laboratory is engaged in building lidar and radar remote sensing instruments, such as, but is not limited to, the Cloud-Aerosol Transport System (CATS), Multi-Angle Cloud-Aerosol Lidar (MACAL), and Forest Lidar and Optical Research for Ecosystem Structure on Station (FLORESTA) instruments. These instruments shall be on-going efforts to develop and demonstrate atmospheric measurements from onboard research aircrafts or other suitable platforms. They shall be end-to-end instrument builds of complete lidar systems, culminating in test flights of prototype instruments. The requirements include support for the following key areas: requirements and interface definition; design and fabrication of mechanical components; thermal and structural analysis; and development of ground support equipment.

The MAISS Request for Proposal (RFP) was released on November 25, 2013 and 3 subsequent amendments were issued.

The contract is a Cost-Plus-Fixed-Fee (CPFF), Indefinite Delivery Indefinite Quantity (IDIQ) contract with an effective ordering period of 5 years from the date of award. This is a new requirement.

This procurement was conducted as competitive small business set-aside under NAICS code 541330 Engineering Services with a small business size standard of \$14M.

## *Proposals Submitted*

On January 6, 2014 NASA received timely proposals from the following four companies:

Beacon System, Inc.
Genesis Engineering Solutions, Inc.
Hawk Institute for Space Sciences (HISS), LLC
Ingenium Scientia Solutions (ISS), LLC

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## *Evaluation Procedures*

The SEB evaluated proposals in accordance with the source selection procedures identified in Federal Acquisition Regulation (FAR) part 15.3 “Source Selections”, and NASA FAR Supplement (NFS) 1815.3, same subject.

The RFP listed three evaluation factors, Cost, Mission Suitability, and Past Performance. The RFP specified the relative order of importance of these factors as follows:

The Cost/Price Factor is significantly more important than the combined importance of the Mission Suitability Factor and the Past Performance Factor. As individual Factors, the Cost/Price Factor is the most important and the Mission Suitability Factor is more important than the Past Performance Factor.

Within Mission Suitability, two subfactors were evaluated:

A. Technical/Management Approach / B. Business Approach

Subfactor A	Technical/Management Approach	600
Subfactor B	Business Approach	400

The Mission Suitability Subfactors were evaluated using the adjectival rating, definitions, and percentile ranges at NFS 1815.305(a)(3)(A). The Mission Suitability factor was weighted and scored on a 1000-point scale. After weighting the findings for the individual subfactors according to the RFP, the SEB assigned individual adjectival ratings to each subfactor under the Mission Suitability Factor. The applicable adjectival ratings were “Excellent,” “Very Good,” “Good,” “Fair,” and “Poor,” as described in Section M of the RFP. The maximum points available for each subfactor were multiplied by the assessed percent for each subfactor to derive the score for the particular subfactor.

The proposed costs for the Representative Task Order and the rates proposed in the Attachment B, Direct Labor Rates, Indirect Rates, and Fixed Fee Matrices, were assessed to determine reasonableness and cost realism. The evaluation was conducted in accordance with FAR 15.305(a)(1) and NFS 1815.305(a)(1)(B).

Past Performance evaluations were based on FAR Part 15 and were conducted in accordance with provision M.5 of the solicitation. As stated in provision L.18, an Offeror’s past

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performance record indicates the relevant quantitative and qualitative aspects of performing services or delivering products similar in size and content to the requirements of this acquisition.

An Offeror's Past Performance was assigned an overall confidence rating that reflects a subjective evaluation of the information contained in the written narrative, past performance evaluation input provided through customer interviews, and other references. The applicable level of confidence ratings were: Very High, High, Moderate, Low, Very Low, and Neutral, as set forth and described in Section M.5 of the RFP.

For purposes of past performance, the term "Offeror" refers to a prime contractor and its significant subcontractors. Accordingly, the past performance of significant subcontractors was also evaluated and attributed to the Offeror. The past performance of the prime contractor was weighted more heavily than any significant subcontractor or combination of significant subcontractors in the overall past performance evaluation.

## *Detailed Results of the Evaluation*

### **Mission Suitability Factor**

The table below provides the adjectival ratings assigned in each mission suitability factor for the four MAISS proposals:

<b>Offeror</b>	<b>Subfactor A</b>	<b>Subfactor B</b>
Beacon	Poor	Fair
Genesis	Excellent	Excellent
HISS	Fair	Fair
ISS	Good	Good

### **Subfactor A: Technical/Management Approach**

#### **Beacon**

Beacon received 0 significant strengths, 0 strengths, 3 significant weaknesses, 1 weakness, and 0 deficiencies, resulting in an adjectival rating of Poor for this subfactor.

#### **Significant Weakness #1**

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The offeror's implementation timeline does not mention any structural or thermal capability staffing assigned to these disciplines. Failure to include structural and thermal analysis disciplines dramatically increases the risk of an unsuccessful completion of the task

## Significant Weakness #2

The offeror did not provide any documentation that could give the Government the confidence that they have awareness and understanding of NASA's aircraft safety, design and interface requirements which is necessary to perform the work under the MAISS contract.

## Significant Weakness #3

The offeror fails to adequately address the technical approach to fabrication and materials required for the RTO. For example, there is no mention of what hardware might have to be fabricated or procured or how many drawings might have to be prepared for successful completion of the RTO.

## Weakness #1

The offeror failed to identify any specific risks in the areas of technical, programmatic, or schedule for the RTO.

## **Subfactor A: Technical/Management Approach**

### Genesis

Genesis received 2 significant strength, 1 strength, 0 significant weaknesses, 0 weakness, and 0 deficiencies, resulting in an adjectival rating of Excellent for this subfactor.

### Significant Strength #1

The offeror's assumption that the instrument may require Multi-Layer Insulation (MLI, or thermal blankets) as part of the thermal control demonstrates an excellent detailed, in-depth understanding of the thermal environment considerations. This proposal specifically acknowledges that the thermal subsystem will involve thermostats, heaters, temperature sensors, and other details of thermal subsystem implementation.

### Significant Strength #2

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The offeror's proposed RTO staffing and materials are exceptionally detailed and significantly increase the Government confidence that the offeror has an understanding of the requirements to perform the work under the MAISS contract.

**Strength #1**

The offeror's demonstrated detailed knowledge of the aircraft environment, previous instrument designs, and aircraft requirements is considered advantageous for successful completion of tasks under the MAISS contract.

**Subfactor A: Technical/Management Approach**

**HISS**

HISS received 0 significant strengths, 0 strengths, 0 significant weaknesses, 2 weaknesses, and 0 deficiencies, resulting in an adjectival rating of Fair for this subfactor.

**Weakness #1**

The offeror's assumption regarding the preferred method for mounting in the aircraft demonstrates a lack of understanding of the ER-2 environment. A pressurized enclosure is required to maintain thermal stability in the aircraft at 65,000 ft. and to maintain a clean, dry environment on landing.

**Weakness #2**

The offeror made an incorrect assumption that we follow strict adherence to NPR 7120.5, GEVS, etc., which is absolutely not the case for aircraft instrument development.

**Subfactor A: Technical/Management Approach**

**ISS**

ISS received 0 significant strengths, 2 strengths, 1 significant weakness, 1 weakness, and 0 deficiencies, resulting in an adjectival rating of Good for this subfactor.

**Strength #1**

The offeror clearly demonstrates knowledge of the unique safety considerations for using a sealed pressurized enclosure. Demonstrating detailed knowledge of the aircraft environment,

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previous instrument designs, and aircraft requirements is considered advantageous for successful completion of tasks under the MAISS contract.

**Strength #2**

The offeror demonstrates knowledge of the relevant thermal environment and knowledge of previous instrument implementations.

**Significant Weakness #1**

The offeror's lack of resource realism in the materials estimate demonstrates a lack of technical understanding and significantly increases the risk of unsuccessful contract performance.

**Weakness #1**

The offeror's lack of resource realism in staffing in some cases demonstrates a lack of technical understanding and increases the risk of unsuccessful contract performance.

**Subfactor B: Business Approach**

**Beacon**

Beacon received 0 significant strengths, 0 strengths, 0 significant weaknesses, 1 weakness, and 0 deficiencies, resulting in an adjectival rating of Fair for this subfactor.

**Weakness #1**

The offeror failed to include the structural and thermal analysis disciplines in their Staffing Plan at a contract level. By not having structural and thermal analysis in the contract staffing plan this increases the risk of not being able to perform all needed work.

**Subfactor B: Business Approach**

**Genesis**

Genesis received 2 significant strengths, 2 strengths, 0 significant weaknesses, 0 weaknesses, and 0 deficiencies, resulting in an adjectival rating of Excellent for this subfactor.

**Significant Strength #1**

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The offeror's proposed manufacturing facility is an excellent resource for the MAISS contract. In particular, the blanket fabrication facility is exceptionally useful to the MAISS instruments.

**Significant Strength #2**

All required personnel necessary to perform the tasks under the contract are identified and their qualifications show that the proposed personnel are experts in their fields.

**Strength #1**

The offeror demonstrates a deep awareness and understanding of laser safety and hazards.

**Strength #2**

The "government interfaces" table identifies that the autonomy conferred on the discipline leads. The offeror demonstrated an understanding of the way GSFC works and how the MAISS work will need to be streamlined.

**Subfactor B: Business Approach**

**HISS**

HISS received 0 significant strengths, 0 strengths, 0 significant weaknesses, 1 weakness, and 0 deficiencies, resulting in an adjectival rating of Fair for this subfactor.

**Weakness #1**

HISS's Safety and Health Plan appears to be missing 1.8 Program Evaluation, as it skips from 1.7 to 1.9. The mishap investigation and record analysis section needs to be updated to meet the requirements in NPR 8715.3 Appendix E. Additionally, there is no mention about a medical surveillance program.

**Subfactor B: Business Approach**

**ISS**

ISS received 0 significant strengths, 1 strength, 0 significant weaknesses, 0 weaknesses, and 0 deficiencies, resulting in an adjectival rating of Good for this subfactor.

**Strength #1**

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The offeror demonstrates a good awareness of laser safety and hazards unique to the Mellifluous Lidar System (MLS) instrument in their Safety and Health Plan. Recognition of such specific considerations is considered positive for successful execution of tasks under the MAISS contract.

**Cost Factor**

As a result of the cost evaluation process, all offerors had adjustments made to proposed costs; however no adjustments resulted in changing overall cost order. Beacon had the lowest proposed/probable costs. ISS had the second lowest proposed/probable costs. Genesis had the third lowest proposed/probable costs and HISS had the highest proposed/probable costs.

**Past Performance Factor**

As a result of the past performance evaluation process, the final overall confidence ratings are summarized below:

<b>Offeror</b>	<b>Overall Confidence Rating</b>
Beacon	Moderate
Genesis	Very High
HISS	Moderate
ISS	High

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## *Source Selection Decision*

I have carefully reviewed the SEB's presentation materials and accompanying MAISS Cost Evaluation Reports generated for each of the individual offerors. I determined that the findings presented by the SEB, as documented in its presentation and supported by the accompanying Cost Evaluation Reports were detailed, consistent with the evaluation criteria in the MAISS RFP, and provided a clear description of the merits of each proposal. In determining which proposal offered the best value to NASA, I referred to the relative order of importance of the three evaluation factors as specified in the RFP:

“The Cost/Price Factor is significantly more important than the combined importance of the Mission Suitability Factor and the Past Performance Factor. As individual Factors, the Cost/Price Factor is the most important and the Mission Suitability Factor is more important than the Past Performance Factor.”

Part I of the SEB's Evaluation Findings were for the Mission Suitability Factor. I noted that the proposal submitted by Genesis was technically superior to the proposals submitted by Beacon, HISS, and ISS based on the content of the findings. I also noted that Genesis' proposal received the highest individual subfactor adjectival ratings in Subfactors A and B, which were ratings of Excellent. Finally, I also noted that Genesis' proposal received the highest overall total point score, and the highest point score amongst all offerors in Subfactors A and B. I reviewed the findings for those scores as Mission Suitability Subfactor A and B was a discriminator in the selection decision, with Beacon, HISS, and ISS all receiving lower scores and adjectival ratings.

Regarding Subfactor A, the most heavily weighted subfactor, I noted Genesis's Excellent rating was significantly higher than Beacon (Poor), HISS (Fair) and ISS (Good). I did not consider Beacon's Poor and HISS' Fair subfactor A proposals to be competitive within this subfactor. Both of these offerors received only negative findings, and neither received any strength or significant strength findings.

I was particularly impressed with Genesis's proposal responses to Subfactor A, which received two Significant Strengths and one Strength. The first Significant Strength assigned to Genesis's proposal under Subfactor A was for a detailed discussion of thermal analysis and thermal design implementation. This level of detail significantly increases the likelihood that Genesis will successfully perform under the MAISS contract. The second significant strength was based on Genesis' proposed level of details for the RTO staffing and materials which provided great insight into the intended level of effort and validated the elements included in the RTO cost.

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I noted that ISS received two Strengths, one Weakness, and one Significant Weakness in Subfactor A. ISS demonstrated knowledge of the unique safety considerations for using a sealed pressurized enclosure (strength) as well as detailed knowledge of the aircraft environment, previous instrument designs, and aircraft requirements (a second strength). More importantly, I also noted that ISS received a significant weakness for a lack of resource realism estimating materials, which showed a lack of technical understanding and significantly increases the risk of unsuccessful contract performance.

In summary I concluded that Genesis's Subfactor A proposal had a significant technical advantage over ISS. Both of Genesis' two significant strengths (one for thermal analysis and thermal design implementation and a second for a detailed and realistic staffing and material estimate) significantly enhance the potential for successful contract performance. While ISS received two strengths, those strengths were largely offset by its significant weakness for a lack of resource realism in estimating the materials necessary to complete the RTO, which significantly increases the risk of unsuccessful contract performance. Ultimately, I concluded that Genesis offered a superior Subfactor A proposal with a significant technical advantage over ISS.

Regarding Subfactor B, the second most important subfactor, I noted Genesis' Excellent rating was higher than Beacon (Fair), HISS (Fair) and ISS (Good). Beacon's and HISS' subfactor B proposals received only weakness findings and did not receive any positive findings. I did not consider these proposals competitive with Genesis or ISS within this Subfactor.

I first noted that Genesis' Subfactor B proposal received two Significant Strengths and two Strengths. The first significant strength was for their local in-house manufacturing facility including a blanket fabrication capability, which is especially useful for producing the MAISS instruments. Genesis received a second significant strength for its proposed personnel, which included recognized experts in their fields. Genesis received two more positive findings, both strengths, for laser safety and hazards as well for its chosen government interfaces.

I next noted that ISS received a Good adjectival rating in this Subfactor with one strength for demonstrating a good awareness of laser safety and hazards, but no significant strengths. In comparison with Genesis' two significant strengths and two strengths, I did not consider ISS' subfactor B proposal which received one strength (which was similar to a strength received by Genesis) to be competitive with Genesis. I found that Genesis had an appreciable, significant advantage over ISS in Subfactor B. Across both subfactors, having found that Genesis had

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significant advantages in both subfactors, I ultimately concluded that Genesis' Mission Suitability proposal was significantly better overall, and therefore superior to ISS' proposal.

Regarding the past performance evaluation (Part III of the Evaluation Findings), I noted that Genesis received a Very High level of confidence rating, while Beacon received a Moderate, HISS received a Moderate, and ISS received a High. Ultimately, I concluded that Genesis held an moderate advantage over ISS in this subfactor with a one-level higher past performance confidence rating, and that Genesis had a significant advantage over Beacon's and HISS' Moderate ratings. I also concluded that ISS had a moderate advantage over both Beacon and HISS in this subfactor with a one-level past performance advantage.

Part II of the Evaluation Findings concerned cost, the most important factor. I noted that Beacon was lowest cost. However, in my best value selection, this low cost advantage was more than offset by having the lowest-rated Mission Suitability proposal (Poor for Subfactor A and Fair for Subfactor B) and only a Moderate past performance confidence rating. Beacon's Poor technical proposal poses a significant risk to the Government in that the offeror does not have an adequate understanding of the technical requirements to successfully perform the contract. I also determined that there is a substantial cost risk with Beacon's proposal. Given that under a cost reimbursement contract, the Government will pay the contractor's actual costs rather than the contractor's proposed costs, I concluded that there was a substantial risk that Beacon's actual costs may ultimately be higher than proposed (and as adjusted), because Beacon's proposal reflects a poor understanding of the Government's technical requirements, and their cost proposal is largely based on that fundamentally flawed understanding. Ultimately, I concluded that Beacon's low cost proposal and Poor/Fair Mission Suitability proposal and Moderate past performance did not represent the best value to NASA, and I eliminated it from further consideration.

HISS offered the highest proposed and probable cost. Given that HISS was not competitive in the most important factor, and also failed to distinguish its proposal under both Mission Suitability (Fair/Fair) and Past Performance (Moderate), I concluded that HISS was not competitive and eliminated it from further consideration.

My selection decision was thus down to Genesis and ISS, with ISS receiving an evaluated probable cost estimate that was approximately 12% lower than the probable cost estimate for Genesis. Understanding that cost was the most significant factor, and that cost was significantly more important than the combined important of the other two factors, I focused considerable attention on the final two offerors' proposed and probable costs.

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Concerning Genesis' proposed and probable costs, I noted that there is less than a one percent difference between its proposed and probable costs, reflecting minimal cost adjustments made by the SEB. Genesis received a significant strength for resource realism reflecting a sound and highly accurate cost estimate for materials as well as a detailed and realistic breakdown of the labor hours needed for the project. Their local in-house manufacturing facility will reduce cost uncertainty associated with third party vendors for manufacturing items. The only cost adjustments identified by the SEB concerned travel costs. Thus, I found that Genesis' probable cost estimate to be a highly realistic reflection of what its actual costs will be during contract performance.

ISS's proposed and probable costs differed by approximately 10%, which indicates a much lower degree of cost realism in ISS's cost proposal. I noted that ISS' staffing plan was "based on a flawed approach" and that "sufficient detail was not provided to validate the approach." The "materials costs were deemed to be low on multiple items" and that substantial labor and materials cost adjustments were made. Given the lack of rigor in the staffing and materials cost plans, I agree with the SEB that ISS' proposal demonstrates a lack of resource realism. Given the cost reimbursement nature of this contract, I concluded that ISS's probable cost (even after a 10% adjustment) is likely to be higher and that additional labor and material costs beyond those that the SEB identified in its cost adjustments will be incurred. I concluded that substantial doubt existed as to whether ISS' cost savings over Genesis would ultimately materialize on the resulting MAISS contract and that there was significant cost risk in ISS' proposal.

In making my trade-off decision, I noted that Genesis' Mission Suitability proposal was scored about 50% higher than ISS, and received two Excellent adjectival ratings, as compared to ISS's two Good ratings. More importantly, as I explained above, when I examined the findings, I determined that Genesis had a significant advantage under both subfactors, and ultimately, a significantly advantage overall in Mission Suitability reflecting a superior Mission Suitability proposal. Genesis' demonstrated level of understanding of instrument development for operations in the space flight environment were rated as strengths and significant strengths, with no weaknesses indicated. In comparison, ISS was judged to have both strengths and weaknesses regarding thermal analysis/engineering and pressurized enclosures. Moreover the Mission Suitability evaluation states that ISS' "...lack of resource realism in the materials estimate demonstrates a lack of technical understanding" whereas for Genesis, there is "overwhelming confidence to the Government that the offeror will successfully perform under

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the MAISS contract.” I considered that Genesis had a moderate advantage in Past Performance with a Very High level of confidence rating compared to ISS’ High rating.

In conclusion, the Government can have great confidence that Genesis’ ultimate cost to the Government will very closely approximate those costs, both proposed and probable. ISS’ proposal has significant cost risk. Given the demonstrated weaknesses in their staffing and materials cost plans, I have concluded that the 10% difference estimated by the SEB between proposed and probable costs will likely be higher, and that ISS’s cost advantage over Genesis, as evaluated, would be unlikely to materialize in contract performance, thus eliminating its probable cost advantage over Genesis on paper. Ultimately, cost was not a discriminator between these two offerors, and my decision came down to Mission Suitability and Past Performance.

Given Genesis’ significant advantage and superior Mission Suitability proposal to ISS, as well as its moderate advantage in Past Performance over ISS, I concluded that Genesis’ proposal represents the best value to the Government. Therefore, I select Genesis for the award of the MAISS contract.

  
Karen Mohr  
Source Selection Authority

Date 8/27/14