

**SOURCE SELECTION MEMORANDUM
FOR THE JDEM TELESCOPE CONCEPT STUDY
UNDER RFP NNG09297780R**

This memorandum provides for the selection of the two (2) offerors to perform the Joint Dark Energy Mission (JDEM) Telescope Concept Study.

PROCUREMENT DESCRIPTION

This is a competitive procurement for a Joint Dark Energy Mission (JDEM) Telescope Concept Study. The contractor will deliver one (1) initial telescope design model and package and one (1) final design model and package. The proposed initial telescope design model and package will have a delivery date of 75 calendar days after contract award, and the final telescope design model and package will have a delivery date of 150 calendar days after contract award.

The following companies submitted proposals:

Goodrich ISR Systems Optical & Space Systems

Raytheon Space and Airborne Systems

L-3 Integrated Optical Systems (IOS)

University of Arizona Lunar & Planetary Laboratory

ITT Space Systems

Ball Aerospace & Technologies Corp.

Each proposal was evaluated in accordance with FAR 15.305, NFS 1815.305, and the evaluation factors contained in the request for proposal (RFP). A trade-off process, as described at FAR 15.101-1, was used in making source selection. The Evaluation Panel's findings were presented to the undersigned in chart form.

Based on the evaluation and per FAR 15.306(a)(3), *Clarifications and award without discussions*, the Government elects to make award without discussions.

EVALUATION PROCEDURES

This procurement was conducted in accordance with Federal Acquisition Regulation (FAR) Subpart 15.3, "Source Selection" and NASA FAR Supplement (NFS) 1815.3.

The RFP established three evaluation factors: Mission Suitability, Past Performance, and Price.

The relative order of importance of the evaluation factors was stated in the solicitation as follows:

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

The Mission Suitability Factor was comprised of the following weighted subfactors:

	<u>Points</u>
Subfactor A: Technical Approach	800
Subfactor B: Risk Approach	200
Total Points	1,000

Each Mission Suitability Subfactor and the overall Mission Suitability Factor were evaluated using the adjectival rating definitions and percentile ranges at NFS 15.305(a) (2)(A). The proposed past performance and price information was provided to the Source Selection Authority. In addition, the Evaluation Panel members evaluated, but did not point score, the Past Performance and Price Factors.

AWARD

In accordance with section L.3, the Government will award two Firm Fixed Price contracts resulting from this solicitation.

MISSION SUITABILITY FACTOR EVALUATION

The Evaluation Panel reported findings in support of the final evaluation score for the Mission Suitability Subfactor.

Goodrich Corporation

For Mission Suitability/Technical Approach, the Goodrich proposal received a rating of "Good", and included one weakness. Goodrich's weakness under Mission Suitability/Technical Approach was the failure to provide specific examples of how their integrated modeling capability was used in the development of previous space-based telescopes or optical instrument concepts as required in the RFP. For Mission Suitability/Risk Approach, the Goodrich proposal received a rating of "Fair", and included one weakness. Goodrich's weakness under Mission Suitability/Risk Approach was that the risk management plan and example risks provided overestimated the importance of study products in reducing risks over the more significant milestones such as hardware delivery and test execution.

Raytheon

For Mission Suitability/Technical Approach, the Raytheon proposal received a rating of "Fair", and included five weaknesses. Raytheon's Technical Approach weaknesses were in not providing the required information on approaches to estimate JDEM Telescope lifecycle cost and development schedule as well as not providing specific examples of how integrated modeling was used in the development of previous space-based telescopes, as required in the RFP. Additionally, Raytheon did not discuss providing two critical assessments (instrument and spacecraft interfaces, and wavefront error breakpoint) as required in the SOW. Finally, Raytheon's proposed optical design options to be studied did not include the specified optical prescription for the telescope. For Mission Suitability/Risk Approach, the Raytheon proposal received a rating of "Fair", and included one weakness for a risk management discussion that used mitigations that were generic and not related to JDEM.

L-3

For Mission Suitability/Technical Approach, the L3 proposal received a rating of "Good", and included two strengths and four weaknesses. L3's Technical Approach strengths were for a detailed integrated modeling discussion and specific example that demonstrated experience with this process; and a systems engineering approach with detailed discussion and rationale for specific trade studies and a requirements interaction table. L3's Technical Approach weaknesses were an insufficient assessment of the test approach for a telescope with cold optics; an error budget that did not correctly capture the top level budget for the telescope; lack of a discussion on providing assessments of the telescope wavefront error and temperature breakpoint assessments; and lack of a discussion on instrument and spacecraft interfaces as required in the SOW. For Mission Suitability/Risk Approach, the L3 proposal received a rating of "Fair", and included one weakness for a risk assessment that focused solely on manufacturing risks with no performance risks identified.

University of Arizona

For Mission Suitability/Technical Approach, the Arizona proposal received a rating of "Fair", and included four weaknesses. Arizona's Technical Approach weaknesses were an integrated modeling discussion that did not discuss providing the key performance driver of wavefront predictions based on mechanical and thermal analysis, a systems engineering process that confused risk management and requirements verification, a failure to use the provided optical prescription and a failure to use the specified temperature range. For Mission Suitability/Risk Approach, the Arizona proposal received a rating of "Good", with no strengths or weaknesses found.

ITT

For Mission Suitability/Technical Approach, the ITT proposal received a rating of "Good", and included two strengths. ITT's strengths were for providing detailed and unique insight into methods that will be used to improve telescope stability; and for describing a strong systems

engineering process with discussion of validation and early verification planning with I&T and a detailed wavefront error budget decomposition. For Mission Suitability/Risk Approach, the ITT proposal received a rating of “Good”, with no strengths or weaknesses found.

Ball Aerospace

For Mission Suitability/Technical Approach, the Ball Aerospace proposal received a rating of “Very Good”, and included one significant strength and two strengths. Ball Aerospace’s significant strength was for providing a detailed integrated modeling discussion showing an understanding of the integrated modeling objectives and relating the analysis to the JDEM specific requirement for point spread function stability. Ball Aerospace’s strengths were for an extensive systems engineering process discussion on requirements development and interfaces and discussion of manufacturability and testing considerations in the design process; and a detailed integration and test plan addressing the challenges of testing a cold telescope. For Mission Suitability/Risk Approach, the Ball Aerospace proposal received a rating of “Good”, with no strengths or weaknesses found.

PAST PERFORMANCE FACTOR

The Past Performance factor included an evaluation of technical, schedule, and cost performance. This factor was not point scored. The evaluation of past performance was based on, but not limited to, the information provided by the offerors in their proposals and the review of this information by the Evaluation Panel members.

Goodrich received an overall rating of "Moderate Level of Confidence". This rating was based on the subjective evaluation of the information Goodrich provided on three programs: 1) Destiny; 2) The Naval Research Laboratory Payload Technology Study; and 3) The Next Generation Space Telescope (NGST) Study.

Raytheon received an overall rating of "Moderate Level of Confidence". This rating was based on the subjective evaluation of the information Raytheon provided on three programs: 1) Space Tracking and Surveillance System (STSS); 2) Advanced Responsive Tactically Effective Military Imaging Spectrometer (ARTEMIS); and 3) [REDACTED].

L-3 received an overall rating of "Moderate Level of Confidence". This rating was based on the subjective evaluation of the information L-3 provided on three programs: 1) ORBVIEW; 2) KEPLER; and 3) GOES-R.

University of Arizona received an overall rating of "Low Level of Confidence". This rating was based on the subjective evaluation of the information UA provided on three programs: 1) LOTIS Collimator; 2) Fabrication/Test off-axis aspheres; and 3) the Phoenix Mars Mission.

ITT received an overall rating of “High Level of Confidence”. This rating was based on the subjective evaluation of the information ITT provided on three current programs: 1) [REDACTED]

[REDACTED]; 2) NextView GeoEye-1; and 3) the Structural Vibration Modeling and Verification.

Ball Aerospace received an overall rating of “High Level of Confidence”. This rating was based on the subjective evaluation of the information Ball Aerospace provided on three programs: 1) KEPLER; 2) HiRISE; and 3) SNAP .

PRICE FACTOR

The evaluation panel members evaluated the proposed price for this effort. During the solicitation phase, offerors were provided the program cost cap of \$400K for this procurement. All of the offerors proposed within a 3% range. Goodrich had the lowest proposed price, Raytheon had the second lowest proposed price, and L-3 had the third lowest proposed price. Ball Aerospace, ITT, and the University of Arizona proposed a price equal to the cost cap of \$400K.

SOURCE SELECTION DECISION

On, October 7, 2009, I, along with the Space Sciences Procurement Manager and the Space Sciences Procurement Legal Counsel, met with members of the evaluation team to hear their findings based on the evaluation of proposals for the JDEM Telescope Concept Study solicitation.

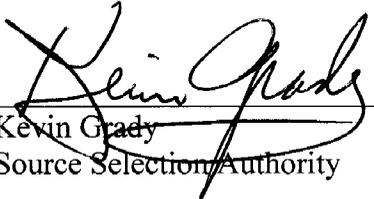
During the presentation, I carefully considered the above findings under mission suitability. Ball Aerospace and ITT’s were the highest rated proposals. Ball Aerospace had one (1) significant strength and two (2) strengths, with no weaknesses and ITT had two (2) strengths with no weaknesses. The Ball Aerospace and ITT proposals were determined technically superior to the proposals submitted by the other offerors.

I also, reviewed the past performance findings and ITT and Ball Aerospace were the highest rated offerors with a High Level of Confidence. Goodrich, Raytheon and L3 were rated with a Moderate level of confidence and University of Arizona was rated with a low level of confidence. I found the ratings for Past Performance to be reasonable based upon the narrative; however, I believe the differences are minor and were not used as a meaningful discriminator for selection contrary to the mission suitability findings.

Although Ball Aerospace and ITT had minimally higher proposed prices than three of the other offerors, their mission suitability proposals, and the strengths therein, clearly outweigh the minimal cost savings presented in the Raytheon, Goodrich, or L-3 proposals.

Based on the above, I found that Ball Aerospace and ITT represented the best value to NASA by offering the highest rated technical proposals. Ball Aerospace and ITT’s technical ratings outweigh Raytheon, Goodrich, or L-3’s minimally lower price advantage. The evaluation team report indicates Ball and ITT have the experience, understanding and capability to perform the

JDEM Telescope Concept Study requirements. Based on the above, the proposals submitted by Ball Aerospace and ITT are considered to offer the best value for the Government's requirements and are hereby selected for contract award.



Kevin Grady
Source Selection Authority

Date 10/13/09