



**Office of Inspector General**  
Washington, DC 20546-0001

**AUG 23 2006**

**TO:** Chief Engineer  
General Counsel  
Procurement Officer, Johnson Space Center

**FROM:** Assistant Inspector General for Auditing

**SUBJECT:** Final Memorandum on NASA's Acquisition Approach Regarding  
Requirements for Certain Engineering Software Tools to Support NASA  
Programs (Assignment No. S06012)

### ***Executive Summary***

The Office of Inspector General has received multiple complaints about NASA's requirements and acquisition approach with regard to mechanical computer-aided design (MCAD) and data management engineering software tools. These tools are used in support of various NASA programs, including Space Shuttle and International Space Station, and exploration programs, including next-generation spacecraft such as the Crew Exploration Vehicle and the Crew Launch Vehicle. Specifically, the complaints allege that NASA is attempting to establish the MCAD and data management products of one vendor (Parametric Technology Corporation [PTC]) as the de facto NASA standard without an Agency-wide technical assessment and analysis to justify and support this standardization. The complaints allege that establishing these products as the Agency standard might result in consequences that could prove catastrophic to NASA's programs. For example, the complaints allege that the PTC MCAD and data management products do not provide a technically robust or stable platform for design and development applications and, therefore, would present significant additional risk.

The complaints also allege that NASA's acquisition approach in implementing the PTC MCAD and data management products as the standard across the Agency without proper justification violates Federal procurement regulations. Furthermore, the complaints allege that a related NASA procurement action—proposing to noncompetitively procure renewed and expanded licensing of the PTC products on a long-term basis—is improper and at odds with the corrective actions the Agency stated that it would take in its letter to the Government Accountability Office (GAO) regarding protests filed with GAO relating to this matter.

Our findings indicate that the allegations are credible and, therefore, warrant immediate notification to the Agency. Specifically, while the Agency is taking actions to recognize PTC MCAD and data management products in a standard suite of applications, we have been unable to identify a basis or an official or organization responsible for justifying these products as the NASA standard. In addition, while the NASA Engineering and Safety

Center recently completed an independent assessment regarding the implementation of NASA's MCAD and data management requirements at Marshall Space Flight Center (Marshall) as requested by the NASA Chief Engineer, that assessment did not provide NASA with a comprehensive analysis of MCAD and data management requirements Agency-wide because the scope of the assessment was limited to Marshall. Furthermore, NASA's pending procurement action to proceed with a long-term renewal of PTC licenses on a noncompetitive basis is inconsistent with the corrective actions the Agency told GAO it would take in response to prior bid protests.

In a draft of this memorandum, we recommended actions to ensure that the Agency's acquisition approach is sound, meets Federal procurement regulations, and is consistent with the representations NASA made to GAO with regard to the related protests. Specifically, we recommended that the Office of the Chief Engineer conduct an assessment of NASA's Agency-wide requirements for the MCAD and data management software tools. We further recommended that the Johnson Space Center (Johnson) Procurement Officer suspend any procurement activity for long-term licensing of the PTC products pending completion of that assessment. In addition, we recommended that the Office of General Counsel (OGC) notify GAO in writing of any deviations from the corrective actions that the Agency stated it would take in its letter to the GAO in regard to the protested procurement matter.

In response to the draft memorandum, NASA management stated that they "concurred with modifications" with each of our recommendations (see Enclosure 3). The management comments in response to recommendation 1 are considered responsive, but the recommendation will remain open for reporting purposes pending NASA's completion of the planned corrective actions. Management comments in response to recommendations 2 and 3, however, are not entirely responsive to the intent of the recommendations, and these recommendations are considered unresolved and will remain open for reporting purposes.

Regarding Recommendation 2, although the Agency's response sufficiently addressed the second part of the recommendation, it was silent on the first part of the recommendation (that is, that Johnson should suspend any procurement activity to increase the number of NASA's PTC MCAD and data management licenses, pending completion of the Office of the Chief Engineer's assessment of NASA's Agency-wide requirements for the MCAD and data management software tools to be conducted pursuant to Recommendation 1). Therefore, we are requesting additional integrated Agency comments by September 12, 2006, explicitly addressing suspension of procurement activities to increase the number of the aforementioned licenses.

Regarding Recommendation 3, the Agency's comments are not responsive to the intent of the recommendation. Management's comments in response to this recommendation stated that "in the absence of an open bid protest, notification to the [GAO] would be an academic matter" and that "the GAO does not consider academic matters." The response further stated that "if any final decision is made by the Agency regarding changes in the proposed corrective action, OGC will determine at that time if notification to the GAO in the absence of an open bid protest is in the best interest of NASA." We continue to believe

that if the Agency decides to deviate from the corrective actions that it previously communicated to GAO, it should notify the GAO accordingly, regardless of whether there is an “open” bid protest. Since the prior protests were dismissed based on GAO’s reliance on NASA’s stated corrective action, this new information may cause the protest to be reopened. In any event, not notifying GAO could harm NASA’s credibility and expose the agency to increased risk in any future litigation. Therefore, we are requesting that NASA management reconsider its proposed corrective action in response to this recommendation and provide additional comments to us by September 12, 2006.

### ***Complaint Issues and Preliminary Findings***

NASA Centers currently use several different MCAD and data management tools from a variety of vendors including PTC, UGS Corporation, IBM, and others. The complaints allege that NASA is improperly establishing PTC products as the de facto NASA standard for both MCAD and data management applications by (1) specifying PTC products/formats under the Exploration Systems Mission Directorate (ESMD) Integrated Collaborative Environment (ICE) requirements in relation to the Crew Exploration Vehicle competition and (2) procuring PTC products and services on a noncompetitive basis without justification, in violation of Federal and Agency procurement regulations. The complaints also allege that certain NASA officials have made statements to the NASA contractor community indicating that PTC MCAD and data management products are the NASA standard and that the contractors must also adopt PTC MCAD and data management products if they are interested in contracting opportunities with NASA programs such as the Crew Exploration Vehicle and the Crew Launch Vehicle, which will be the preeminent NASA programs for the foreseeable future.

Our fieldwork to date suggests that the allegations and concerns expressed are credible. That is, we found that NASA has (1) identified PTC products/formats as part of its defined architecture for ICE and (2) initiated procurements to increase the number of PTC licenses Agency-wide in an effort to realize the architecture in a standard suite of applications. Conversely, we have been unable to identify any official Agency-wide assessment that was conducted justifying the establishment of PTC MCAD and data management products as the NASA “standard.” Rather, several sources have attributed this standard to an informal directive that was reportedly issued by the former NASA Associate Administrator for the Office of Exploration Systems who, we were told, had a strong preference for PTC MCAD and data management products because of his experience in managing Department of Defense projects that used these PTC products. However, we have been unable to definitively identify any directive that establishes PTC MCAD and data management products as the NASA standard.

We have also been unable to definitively identify which NASA official or organization is responsible for establishing Agency-wide needs and requirements for MCAD and data management tools. Some NASA technical personnel we interviewed indicated that the requirements are determined at Headquarters by ESMD, while other technical personnel indicated that the Centers determine their own requirements. Various NASA technical personnel told us that there is significant confusion in the NASA and NASA contractor

MCAD/data management user communities regarding whether NASA has an official standard for MCAD and data management tools; whether that standard is the PTC products; and, if so, how that standard was initiated, implemented, and documented. We were also told that Center-level management might be reluctant to elevate concerns raised by Center MCAD/data management user communities for fear of that Center being given a lesser role in NASA's exploration programs (including the next-generation spacecraft, such as the Crew Exploration Vehicle and the Crew Launch Vehicle).

In November 2005, NASA's Office of the Chief Engineer fielded some of these same concerns from technical personnel at Marshall and, in response, had requested that the NASA Engineering and Safety Center conduct an independent assessment regarding the implementation of NASA's MCAD and data management requirements at Marshall. However, this assessment, which was completed in July 2006, is not a substitute for a comprehensive analysis of MCAD and data management requirements Agency-wide because its scope was limited to Marshall.

Our work indicates that NASA's previous and ongoing procurement actions for MCAD and data management licenses are not being driven by coordinated and well-defined Agency-wide technical requirements. This issue is consistent with concerns expressed in our December 20, 2005, letter to congress addressing a number of "trouble areas" in NASA's acquisition and contracting processes. One of the specific trouble areas addressed in the letter was NASA's awarding of single-bidder contracts with undefined and changing contract requirements.

**Related Procurement Action Protested to the Government Accountability Office.** In August 2005, Johnson conducted a "competitive" procurement to renew the Agency's 301 existing PTC MCAD product ("Pro-Engineer") licenses across multiple NASA Centers and acquire 50 additional licenses for use at Marshall as well as procure associated training and other services. In September 2005, NASA awarded PTC a delivery order for the required licenses in the amount of \$5.2 million. In October 2005, two competing vendors, UGS and Enterprise Solutions Corporation (ESCgov), filed protests with GAO, challenging NASA's selection of PTC on the basis that the procurement, and the resultant selection of PTC, was fundamentally flawed on several counts.

Specifically, the protests alleged that NASA

- failed to provide material answers to questions to all offerors;
- improperly conducted a negotiated procurement using procedures that did not comply with competition requirements;
- improperly waived several mandatory requirements of the solicitation in awarding the delivery order to PTC;
- failed to accurately describe its requirements;
- violated requirements of competitive procurement by improperly conducting what was, in effect, a sole source procurement; and
- improperly purchased non-Federal Supply Schedule (FSS) items under an FSS contract.

In response to the protests, NASA's Office of Procurement and OGC at NASA Headquarters reviewed the circumstances of the procurement and concluded that "there were some inconsistencies in the procurement process." An OGC senior attorney issued a letter to GAO on November 8, 2005 (see Enclosure 1), stating that the Agency intended to "take corrective action in the matter" rather than defend the protests.

The OGC letter also stated:

In order to avoid disruption to these critical NASA programs, the agency intends to keep in place the current PTC delivery order for only that amount of time necessary to properly plan and conduct a new competitive acquisition, estimated to be from three (3) to six (6) months. A new Request for Proposals/Quotations will be issued as soon as is practical, following a thorough scrub of agency requirements.

NASA is keenly sensitive to the potential for prejudice to any competition which can result from keeping the awarded contractor in place during the corrective action. Certain maintenance and training services contemplated in the awarded delivery order will not be executed. Additionally, the various NASA centers have been advised of the temporary duration of the PTC delivery order, pending the corrective action competition for MCAD software and associated services.

On the basis of OGC's letter stating that NASA intended to take corrective action, GAO issued a written decision on November 10, 2005, dismissing the protests (see Enclosure 2). Specifically, the protest decision stated, in part:

Subsequent to the filing of these protests, the agency has determined to take corrective action. Specifically, NASA intends to issue a new solicitation after a thorough review of the agency's requirements. Because of the continuing, daily need for MCAD tools, and in order to avoid disruption of critical NASA programs, the agency intends to maintain PTC's delivery order, but only for that amount of time necessary to properly plan and conduct the new competitive acquisition. Where, as here, a contracting agency provides appropriate relief, the protest becomes academic. . . . Since it is not our practice to consider academic questions, the protests are dismissed.

However, NASA's actions following dismissal of the protests seem to be at odds with the statements made in the OGC's letter regarding the corrective actions that NASA would take in relation to the protested procurement. For example, the OGC's letter stated that NASA would conduct "a new competitive acquisition . . . following a thorough scrub of agency requirements." We learned, however, that the Agency has not conducted—and currently does not intend to conduct—a competitive acquisition for its MCAD software requirements. Rather, in February 2006, Johnson officials drafted a "Justification for Other Than Full and Open Competition," proposing to continue the renewal of the PTC Pro-Engineer licenses on a noncompetitive basis for a period of up to 5 years. As of August 22, 2006, that justification was still under review by the OGC. Further, we found no evidence that a "thorough scrub of agency requirements" was completed pursuant to the statements made in the OGC letter.

We believe that NASA's planned acquisition approach in attempting to noncompetitively renew the PTC licenses on a long-term basis at this point is questionable, considering that the existing delivery order awarded to PTC in September 2005 was protested; NASA's

Office of Procurement and OGC noted “inconsistencies in the procurement process” and reported to GAO that the Agency intended to “take corrective action in the matter” rather than defend the protests; NASA further reported to GAO that the protested delivery order to PTC would only be allowed to stand temporarily until a new competitive acquisition could be conducted; and yet, contradictory to that letter, NASA is now planning to proceed with a long-term renewal of the PTC licenses on a noncompetitive basis. Furthermore, we question why NASA would proceed with a noncompetitive procurement for long-term renewal of PTC licenses at this time when neither a “thorough scrub of agency requirements” pursuant to the OGC letter nor any other Agency-wide assessment of NASA MCAD and data management requirements have been completed.

### ***Recommendations, Management’s Response, and Evaluation of Management’s Response***

1. The NASA Chief Engineer should expand the NASA Engineering and Safety Center study to encompass an Agency-wide assessment of MCAD and data management requirements and determine whether any MCAD and data management products should be established as the standard for purposes of ESMD’s ICE requirements and NASA’s other programs. The expanded study should be conducted by a cross-organizational team, including representation from the affected Centers and NASA program offices, and the Office of the Chief Engineer.

**Management’s Response.** NASA management concurred with the recommendation, stating that the Office of Chief Engineer will conduct an Agency-wide assessment as a follow-up to the NESC’s completed study of MCAD and data management engineering tools. The response also stated that, while the Agency has no intention of designating a particular MCAD product as a NASA standard, the new assessment will result in a documented set of information to help support the selection of MCAD tools for major space systems as well as recommendations for consideration [by Center technical organizations supporting programs and projects] when determining tools affecting multiple Centers. The projected completion date for the new assessment is February 3, 2007.

**Evaluation of Management’s Response.** NASA’s comments are responsive to the recommendation. However, the recommendation will remain open for reporting purposes pending completion of the Agency-wide assessment and implementation of the resultant written guidance regarding the acquisition of MCAD tools.

2. The Johnson Procurement Officer should suspend any procurement activity to increase the number of NASA’s PTC MCAD and data management licenses pending completion of the aforementioned assessment. Also, existing PTC MCAD and data management licenses should be renewed for only the minimum amount of time necessary to provide for continuity of the required tools pending completion of the assessment.

**Management's Response.** NASA management concurred with the recommendation stating that Johnson, in order to allow uninterrupted service to the various programs, will continue support for the existing 351 licenses for the minimum amount of time necessary, pending completion of the assessment.

**Evaluation of Management's Response.** NASA management's comments are not fully responsive to the recommendation. Although the response sufficiently addressed the second part of the recommendation, it was silent on the first part of the recommendation (that is, that Johnson should suspend any procurement activity to increase the number of NASA's PTC MCAD and data management licenses, pending completion of the assessment to be conducted pursuant to Recommendation 1). Therefore, we request additional integrated Agency comments by September 12, 2006, explicitly addressing suspension of procurement activities to increase the number of the aforementioned licenses. In the interim, this recommendation is considered unresolved and will remain open for reporting purposes.

3. The OGC Senior Attorney should notify the GAO in writing of any deviations from the corrective actions that the Agency stated it would take in its letter to the GAO in regard to the protested procurement matter.

**Management's Response.** The OGC concurred with the recommendation. Management's response reiterated that NASA has not made any final Agency determinations regarding a procurement approach. Also, the response stated that "in the absence of an open bid protest, notification to the [GAO] would be an academic matter" and that "the GAO does not consider academic matters." The response further stated that "if any final decision is made by the Agency regarding changes in the proposed corrective action, OGC will determine at that time if notification to the GAO in the absence of an open bid protest is in the best interest of NASA."

**Evaluation of Management's Response.** Although NASA management concurred with the recommendation, the Agency's comments are not responsive to the intent of the recommendation. We continue to believe that if NASA decides to deviate from the corrective action it committed to, as communicated to GAO, in regard to the protested procurement matter, it should notify GAO of its deviation regardless of whether there is an "open" bid protest. Considering that GAO dismissed the protests based on the corrective action NASA stated it would take, deviating from that action without notifying GAO could harm NASA's credibility and expose the Agency to increased risk in any future litigation. Therefore, we are requesting that NASA management reconsider its proposed corrective action in response to this recommendation and provide additional comments to us by September 12, 2006. This recommendation is unresolved and will remain open for reporting purposes.

We appreciate the courtesies extended to the staff thus far during our ongoing review. If you have any questions or would like to discuss this issue further, please call Mr. Joseph Kroener, Director of Procurement Audits, at 202-358-2558.

*A. Dahnelle Payson*  
for  
Evelyn R. Klemstine

3 Enclosures

cc:

Administrator

Associate Administrator, Exploration Systems Mission Directorate

Assistant Administrator for Procurement

Chief Safety and Mission Assurance Officer

Director, Ames Research Center

Director, Dryden Flight Research Center

Director, Glenn Research Center

Director, Goddard Space Flight Center

Director, Johnson Space Center

Director, Kennedy Space Center

Director, Langley Research Center

Director, Marshall Space Flight Center

Director, Stennis Space Center

Chief Counsel, Johnson Space Center



National Aeronautics and  
Space Administration  
**Headquarters**  
Washington, DC 20546-0001



Reply to Attn of

**Contracts & Procurement Practice Group**

Mr. Paul E. Jordan, Esq.  
Senior Attorney  
U.S. Government Accountability Office  
441 G Street, N.W.  
Washington, D.C. 20548

8 November, 2005

RE: Protest of ESCgov, Inc.; Protest of UGS Corporation; B-297386, B-297386.2

Dear Mr. Jordan:

As you know, both UGS and ESCgov, unsuccessful offerors, each filed a protest on October 11, 2005, with your office, objecting to the selection of PTC for the award of NASA delivery order NNJ05JJ43T, for Mechanical Computer Aided Design (MCAD) software and associated services. The delivery order was awarded at NASA's Johnson Space Center (JSC) in Houston, Texas.

ESCgov and UGS are challenging NASA's selection of PTC on the basis that:

- a) NASA failed to provide material answers to questions to all offerors;
- b) NASA unlawfully conducted a negotiated procurement using 48 C.F.R. 8.405-2 procedures without complying with competition requirement;
- c) NASA waived several mandatory requirements of the RFQ in awarding a contract to PTC;
- d) NASA failed to accurately describe its requirements;
- e) NASA violated requirements to competitively procure its requirements by conducting what was, in effect, a sole source procurement; and
- f) NASA unlawfully purchased non-FSS Items under an FSS contract (which was only protested by ESCgov).

Following an internal review at JSC, NASA recognizes that there were some inconsistencies in the procurement process of the MCAD contract. Therefore, NASA does not intend to defend the current protests. It is NASA's intention to take corrective action in the matter. The MCAD tools are utilized on a daily basis to both sustain products used by NASA programs, including the Space Shuttle and the International Space Station, and to develop new space flight products.

In order to avoid disruption to these critical NASA programs, the agency intends to keep in place the current PTC delivery order for only that amount of time necessary to properly plan and conduct a new competitive acquisition, estimated to be from three (3) to six (6) months. A new Request for Proposals/Quotations will be issued as soon as is practical, following a thorough scrub of agency requirements.

NASA is keenly sensitive to the potential for prejudice to any competition which can result from keeping the awarded contractor in place during the corrective action. Certain maintenance and training services contemplated in the awarded delivery order will not be executed. Additionally, the various NASA centers have been advised of the temporary duration of the PTC delivery order, pending the corrective action competition for MCAD software and associated services.

Please contact me if you have any questions.

Sincerely,

[name redacted]

Senior Attorney  
NASA Headquarters

Copies:

[names redacted]



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United States Government Accountability Office  
Washington, DC 20548

Comptroller General  
of the United States

## Decision

**Matter of:** ESCgov, Inc.; UGS Corporation

**File:** B-297386; B-297386.2

**Date:** November 10, 2005

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### DECISION

ESCgov, Inc., and UGS Corporation protest the award of a delivery order to Parametric Technology Corporation (PTC) under request for quotations No. 102527 issued by the National Aeronautics and Space Administration (NASA) for mechanical computer aided design (MCAD) software and technical support services.

We dismiss the protest.

Subsequent to the filing of these protests, the agency has determined to take corrective action. Specifically, NASA intends to issue a new solicitation after a thorough review of the agency's requirements. Because of the continuing, daily need for MCAD tools, and in order to avoid disruption of critical NASA programs, the agency intends to maintain PTC's delivery order, but only for that amount of time necessary to properly plan and conduct the new competitive acquisition. Where, as here, a contracting agency provides appropriate relief, the protest becomes academic. Centel Fed. Servs. Corp.—Recon., B-242367.2, Feb. 14, 1991, 91-1 CPD ¶ 175 at 2. Since it is not our practice to consider academic questions, the protests are dismissed. Dyna-Air Eng'g Corp., B-278037, Nov. 7, 1997, 97-2 CPD ¶ 132.

Anthony H. Gamboa  
General Counsel

National Aeronautics and  
Space Administration  
**Headquarters**  
Washington, DC 20546-0001



August 3, 2006

Reply to Attn of: **Office of the Chief Engineer**

**TO:** Assistant Inspector General for Audits  
**FROM:** Chief Engineer  
**SUBJECT:** NASA's Acquisition Approach Regarding Requirements for Certain Engineering Software Tools to Support NASA Programs (IG Report Assignment No.S06012)

Thank you for the opportunity to provide comments to the Office of Inspector General (OIG) draft report on the acquisition of mechanical computer-aided design (MCAD) and data management engineering software tools. The following represents an integrated response to the draft report by representatives of Office of General Counsel, Procurement Office, Office of Chief Engineer, and the NASA Engineering and Safety Center. We appreciate the effort expended by the OIG to examine NASA's selection of MCAD tools. This examination has resulted in procedural recommendations to ensure MCAD products and data management products provide a technically robust and stable platform for the design and development of major space systems.

Below is our response to the recommendations in the draft IG Report No. S06012 for your consideration.

**Comments on Recommendations:**  
Response to Recommendations

1. "The NASA Chief Engineer should expand the NASA Engineering and Safety Center Study to encompass an agency-wide assessment of MCAD and data management requirements and determine whether any MCAD and data management products should be established as the standard for purposes of ESMD's ICE requirements and NASA's other programs. The expanded study should be conducted by a cross-organization team, including representation from the affected centers and NASA program offices and the Office of the Chief Engineer."

**NASA Chief Engineer CONCURS with MODIFICATIONS:** We believe a follow up agency-wide assessment to NESC's completed study of MCAD and data management engineering tools would be beneficial to aid in the conduct of future acquisitions of this nature. NASA has no intention of designating a particular MCAD product as a NASA standard. We propose the results of this new assessment be a) a documented set of information to help support the selection of MCAD tools for major space systems, and b) recommendations for consideration when determining tools affecting multiple Centers. This will allow the decision of selecting specific tools to continue to be made by Center technical organizations supporting programs and projects. The Office of Chief Engineer will target the completion of this assessment by February 3, 2007.

2. "The Johnson Procurement Officer should suspend any procurement activity to increase the number of NASA's PTC MCAD and data management licenses pending completion of the aforementioned assessment. Also, existing PTC MCAD and data management licenses should be renewed for only the minimum amount of time necessary to provide for continuity of the required tools pending completion of the assessment."

**NASA Procurement Office CONCURS with MODIFICATION:** To allow uninterrupted service to the various programs, JSC will continue support for the 351 licenses for the minimum amount of time necessary pending completion of the assessment.

3. "The OGC Senior Attorney should notify the GAO in writing of any deviations from the corrective actions that the agency stated it would take in its letter to the GAO in regard to the protested procurement matter."

**NASA Office of General Counsel CONCURS with MODIFICATION:** NASA has not made any final Agency determinations regarding a procurement approach. In the absence of an open bid protest, notification to the Government Accountability Office, Office of General Counsel, Procurement Law Control Group, would be an academic matter. The GAO does not consider academic matters. If any final decision is made by the agency regarding changes in the proposed corrective action, OGC will determine at that time if notification to the GAO in the absence of an open bid protest is in the best interest of NASA.

Thank you again for the opportunity to comment on this draft report. We are available to discuss the draft report and our comments at your convenience.



Christopher J. Scolese

cc:  
HQ/Mr. Becker  
HQ/Mr. Kelly  
HQ/ Mr. Luedtke  
HQ/Ms. Moore  
HQ/Mr. McCarthy  
HQ/Mr. Robinson  
HQ/Mr. Werner  
GSFC/500.0/Mr. Hagopian  
JSC/AA/Mr. Coats  
JSC/B/Mr. Baugh