UNITED STATES DISTRICT COURT
DISTRICT OF NEVADA

JED MARGOLIN,

Plaintiff

v.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Defendant.

Case No. 3:09-cv-00421-LRH-(VPC)

Appendix Volume 1

For Motion For Summary Judgment

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Dated: June 9, 2010

Appendix Volume 1 - Index

I. Exhibit 1 - Final Memorandum on NASA's Development of the Integrated Asset Management – Property, Plant, and Equipment Module to Provide Identified Benefits (Report No. IG-08-032; Assignment No. A-08-001-00) …….. A4

II. Exhibit 2 - Email from Gary G. Borda dated January 23, 2009 asking people to look for NASA's procedures for administratively reviewing a claim of patent infringement ……. A19

IIII. Exhibit 3 - NASA's denial of Margolin's Appeal in his Second Freedom of Information Act Request ……..……..…… A38

IV. Exhibit 4 - Margolin's Engineering diploma from The University of Michigan ……..…… A46

V. Exhibit 5 - Order of the U.S. District Court For the District of Arizona……..... A48

VI. Exhibit 6 - NASA's response to Margolin's inquiry regarding the status of his Second FOIA Request …… A51

VII. Exhibit 7 - Email from the Editor of AUVSI Unmanned Systems Magazine regarding NASA's Jeff Fox's contribution to the Abernathy article…… A54

VIII. Exhibit 8 - The Attorney General's Memo on the Freedom of Information Act From U.S. DOJ Web Site: www.usdoj.gov/ag/foia-memo-march2009.pdf …….. A56

IX. Exhibit 9 - USPTO Manual of Patent Examining Procedure (MPEP) Section 2205 **Content of Prior Art Citation** explaining the requirements for a Request For Ex-Parte Re-Examination ……... A60

X. Exhibit 10 - First 60 pages of the approximately 240 pages of the File Wrapper for 5,566,073 produced by NASA ……. A65

Exhibit 1

Exhibit 1

National Aeronautics and Space Administration

Office of Inspector General
Washington, DC 20546-0001

September 25, 2008

TO: Chief Financial Officer
Chief Information Officer
Deputy to Chief Information Officer
Director, Marshall Space Flight Center

FROM: Assistant Inspector General for Auditing

SUBJECT: Final Memorandum on NASA's Development of the Integrated Asset Management – Property, Plant, and Equipment Module to Provide Identified Benefits (Report No. IG-08-032; Assignment No. A-08-001-00)

The Office of Inspector General conducted an audit of NASA's Integrated Asset Management – Property, Plant, and Equipment (IAM/PP&E) module. A component of NASA's Integrated Enterprise Management Program (IEMP), the IAM/PP&E module is an automated asset-management system that performs two main functions: equipment management (logistics) and asset accounting (finance) and was designed to integrate logistics and financial processes to account for and facilitate management of NASA personal property.

Our overall objective was to determine whether NASA adequately defined the IAM/PP&E module's project requirements to achieve identified benefits and address stakeholder needs. Specifically, we focused on determining whether NASA adequately defined its project requirements to ensure that the module provided the following benefits: (1) more accurate, timely valuation of PP&E; (2) improved valuation, capitalization, and depreciation processes; (3) improved audit trail of capitalized[1] PP&E; (4) standardization of NASA-held and contractor-held property management processes; (5) elimination of manual processes; and (6) reduced operational costs. An additional objective, initially, was to determine the status of the IAM/PP&E module project and whether the project's cost and schedule estimates were reasonable and reliable. The IAM/PP&E module went live in May 2008, and the project's actual costs were within the total budget of approximately $30 million. Inasmuch as the project has been implemented and was completed within budget, we make no further comment on the schedule or budget in this memorandum.

[1] Capitalized assets identify property that has a value of $100,000 or more, a useful life of at least 2 years, and an alternative future use. If the asset is internal use software, the value must be $1 million or greater.

We conducted our audit at Marshall Space Flight Center and NASA Headquarters. (See Enclosure for details on the audit's scope and methodology.)

Executive Summary

We found that NASA adequately defined the IAM/PP&E module project requirements to ensure the six benefits are achieved and that the achievement would be measurable. To determine that the project requirements were adequately defined, we verified that the requirements were crosswalked to each anticipated benefit; we verified that project personnel had reviewed the Federal financial system requirements and could trace the project requirements to the Federal requirements; and we reviewed the project's Performance Measurement Plan to verify that a performance measure could be tied to each of the six identified benefits. We determined that the IAM/PP&E module, as designed, and the corresponding changes in NASA's business processes and controls should help mitigate deficiencies reported as material weaknesses by Ernst and Young (E&Y), the independent public accounting firm that conducted the audit of NASA's financial statements for the past 4 years.

We also found that, to help ensure that stakeholders' needs were met, project management incorporated stakeholders in the requirements development process. Stakeholders identified and reviewed project requirements and, during system development, helped determine whether each portion of the system would meet their requirements. Stakeholders also participated in IAM/PP&E Steering Committee meetings.

We note, however, that the system's contribution to improved financial reporting may be limited by inaccurate data. NASA did not validate approximately 6,300 records of capital assets that have an acquisition value of $32 billion (and a net value of approximately $18.6 billion) prior to transferring the data into IAM/PP&E. In addition, NASA has not resolved an operating policy issue involving identifying purchases of controlled equipment, which could bear on the successful operations of the system. However, we did not conduct audit work to address the impact of these issues because E&Y plans to perform tests of the IAM/PP&E module and NASA's corresponding manual controls as part of the fiscal year (FY) 2008 financial statement audit. Accordingly, we made no recommendations for management action. We issued a draft of this memorandum on September 17, 2008, and provided NASA management an opportunity to comment on the draft, but comments were not required and no formal comments were received.

Background

As part of its FY 2007 report on NASA's financial statement, E&Y, in its "Report on Internal Control," dated November 13, 2007, identified significant deficiencies that it considered to be material weaknesses under standards established by the American Institute of Certified Public Accountants. E&Y identified material weaknesses in NASA's controls for financial systems, financial analyses, oversight used to prepare the financial

statements, and processes for assuring that PP&E and materials are presented fairly in the financial statements. In addition, E&Y stated that NASA's financial management systems are not substantially compliant with the Federal Financial Management Improvement Act (FFMIA) of 1996,[2] noting that certain subsidiary systems, including all property systems, are not integrated with NASA's Systems Applications and Products (SAP) Core Financial module. Core Financial—customized off-the-shelf software that serves as the backbone to the IEMP—is used to record accounting transactions including commitments, obligations, and expenditures and to produce NASA's annual financial statements.

NASA developed the IAM/PP&E module in part to address the material weaknesses identified by E&Y. The module replaced the logistics legacy systems NASA Equipment Management System (NEMS) and NASA Property Disposal Management System (NPDMS) and the personal property records in NASA's Contractor-Held Asset Tracking System (CHATS). NEMS was a transaction-based system that linked every controlled equipment item to a unique Equipment Control Number and provided NASA an Agency-wide system to simplify, standardize, and reduce the cost of tracking and managing equipment items. NPDMS provided NASA with an Agency-wide disposal management tracking system to support operational requirements for the utilization, transfer, donation, sale, or other disposal mechanism for idle NASA personal property. Through CHATS, approximately 50 contractors holding the highest dollar value of NASA-owned, contractor-held property are required to report the status of the property to the Chief Financial Office's Property Branch on a monthly basis (all others report status annually). The IAM/PP&E module was designed to account for and facilitate management of NASA- and contractor-held accountable personal property and capitalized personal property (i.e., equipment, internal-use software, leased personal property, and work-in-process assets).[3]

Project managers reported that the total value of NASA's accountable personal property that the IAM/PP&E module manages includes all of the approximately $18.4 billion of the net Space Exploration PP&E and $206 million of net General PP&E (out of a total of $2.2 billion of General PP&E) reported in the NASA FY 2007 financial statements. The IAM/PP&E module cost approximately $30 million.

For major Federal investments, such as the IAM/PP&E module, the Office of Management and Budget (OMB) Circular No. A-11, "Preparation, Submission, and Execution of the Budget," requires Federal agencies to identify anticipated benefits of the investment in Exhibit 300, "Capital Asset Plans and Business Cases," to ensure that a business case is made that can be tied to the agency's mission statements, long-term goals, and objectives. We focused our audit on determining whether NASA adequately

[2] FFMIA requires each Agency to implement systems that comply with Federal financial management system requirements, applicable Federal accounting standards, and the Standard General Ledger at the transaction level.

[3] The IAM/PP&E module does not include real property (land, buildings, other structures and facilities, leased property, leasehold improvements, and modifications to real property) or operating materials and supplies.

defined its project requirements to ensure the benefits listed in the Exhibit 300 are achieved.

Project Requirements, Identified Benefits, and Stakeholder Input

We found that NASA adequately defined its project requirements to ensure anticipated, measurable benefits would be achieved and that stakeholders' input was incorporated in the requirements development process. We reviewed the Exhibit 300s for the IAM/PP&E module submitted in 2006 for budget year 2008 and in 2007 for budget year 2009 to determine the identified benefits. We verified that the logistics and financial stakeholders participated in determining and approving requirements during the project's formulation and throughout its implementation.

Project Requirements

The IEMP identifies project requirements in terms of levels:

- Level I (guiding principles),
- Level II (functional drivers),
- Level III (high-level requirements),
- Level IV (detailed functional and technical requirements), and
- Level V (specific software implementation requirements) to define project requirements.

To determine that the project requirements were adequately defined, we verified that the IAM/PP&E module project's Level III requirements, which include the main features to be delivered, were crosswalked to each of the anticipated benefits. We further verified that the IAM/PP&E module project personnel had reviewed the Federal financial system requirements in the Joint Financial Management Improvement Program (JFMIP) Systems Requirements (SR) JFMIP-SR-00-4, "Property Management System Requirements," October 2000, and could trace Level IV project requirements, which are more descriptive than the Level III high-level requirements, to the Federal requirements. We also reviewed the IAM/PP&E module project's Performance Measurement Plan to verify that a performance measure could be tied to each of the six benefits identified in the Exhibit 300s,[4] and all contribute to the two main functions of IAM/PP&E: equipment management (logistics) and asset accounting (finance).

The logistics function is intended to allow equipment managers to record information about each piece of NASA-owned or contractor-held equipment such as description, location, cost, capital asset indicator, and Work Breakdown Structure (WBS) element. The WBS element is developed by identifying the system or project end item, then successively subdividing it and numbering each subsidiary work product or element. NASA Interim Directive (NID) 9250-56, "Identifying Capital Assets and Capturing Their Costs," November

[4] We did not assess the performance measurements and offer no opinion on the quality of those measurements. As E&Y will be testing and reviewing system compliance with the FFMIA in the financial statement audit, we did not test the project's ability to, for example, transition transactions to the general ledger or system controls.

1, 2007, requires project managers to identify all capital assets with unique WBS elements. The Directive requires anyone acquiring a capital asset, based on the definitions provided in an Alternative Future Use Questionnaire, which is completed by project managers and reviewed by property accountants, to create a separate WBS element in the system and flag each WBS with a capital asset indicator. To assist logistics stakeholders with managing equipment in the IAM/PP&E module, project staff developed N-PROP (NASA properties), a Web-based portal for acceptance and custodial oversight of NASA property. Equipment holders are notified by e-mail of actions they need to take to document individual pieces of equipment. N-PROP provides easy access to property-related actions as well as basic reports that provide visibility into all NASA property.

The finance function is intended to improve the financial management of capitalized personal property, which will enhance the Agency's ability to meet its financial reporting requirements. The unique WBS elements allow the capital attribute to be easily tracked through the system interface in Core Financial to the various other financial modules. Use of unique WBS elements will make it possible to track activity associated with each capital asset throughout its life cycle, capturing work-in-progress costs for capital assets as they are being procured and fabricated. The improvements are expected to address material weaknesses in NASA internal controls over PP&E that contributed to NASA receiving a disclaimer of opinion on its financial statements.

Identified Benefits and Performance Indicators

In the Exhibit 300s submitted for the IAM/PP&E module, NASA identified the anticipated benefits of the IAM/PP&E module as (1) more accurate, timely valuation of PP&E; (2) improved valuation, capitalization, and depreciation processes; (3) improved audit trail of capitalized PP&E; (4) standardization of NASA-held and contractor-held property management processes; (5) elimination of manual processes; and (6) reduced operational costs.

Valuation of PP&E. Prior to the implementation of the IAM/PP&E module, accountable personal property was tracked in NEMS. Tracking required the monthly transfer of data, manually, to the financial system, which was time-consuming and resulted in inaccurate information being transferred to the financial system. The IAM/PP&E module is expected to achieve accurate, timely valuation of PP&E through integrating the logistics and financial systems. Level III requirements for the IAM/PP&E module supporting this anticipated benefit include

- creating integrated processes for sharing operational and cost data;
- creating processes that integrate with Core Financial to establish and maintain capitalized personal property values contained in general ledger accounts for NASA-held equipment and for NASA-owned, contractor-held equipment; and
- establishing the capability to track and report work-in-progress costs, and upon completion of fabrication, moving the cost from work in progress to a final capitalized asset, if the capitalization criteria are met.

The performance measure associated with the anticipated benefit of accurate and timely valuation is the percentage of NASA capital assets recorded in the system that have completed entries for the capital asset indicator field. The goal is to increase the percentage of new capital assets that have completed entries for this indicator as new assets are acquired and identified. As capital assets that do not have completed entries for the capital asset indicator field drop off at the end of their life cycle, the percentage of capital assets with the indicator will increase.

Valuation, Capitalization, and Depreciation Processes. Prior to implementation of the IAM/PP&E module, property accountants manually tracked the depreciable value of capitalized equipment from reports in NEMS and CHATS using a spreadsheet. Property accountants combined the depreciated total of all items on the spreadsheet and made one journal voucher entry to the general ledger. This manual process of calculating depreciation did not allow for tracking the depreciation of individual assets throughout their life cycle.

The IAM/PP&E module is expected to allow for improved valuation, capitalization, and depreciation processes through automated processes and related policy changes, such as NID 9250-56. The IAM/PP&E module uses asset master records instead of a summary of accounting records. These asset records allow property accountants to perform automated depreciation calculations within the financial system and other asset-related calculations at the individual asset level. The asset records serve as the property subsidiary ledger to the Core Financial Standard General Ledger and allow for a full and automated integration of the accounting and property systems. Level III requirements for the IAM/PP&E module supporting this anticipated benefit include

- creating capitalized personal property records that establish and maintain original cost, original acquisition date, placed in service date, accumulated depreciation, and net book value; and
- establishing the capability to calculate, assign, and record depreciation cost to each capitalized item of personal property consistent with generally accepted accounting principles as identified by the Federal Accounting Standards Advisory Board (FASAB).

The performance measure associated with the anticipated benefit of improved valuation, capitalization, and depreciation processes is the number of automated transactions in Core Financial related to capital personal property assets. The goal is to reduce the number of assets processed manually.

Audit Trail of Capitalized PP&E. Prior to the implementation of the IAM/PP&E module, the depreciation of capitalized assets was combined and done through one journal voucher entry. Information for individual depreciated items had to be manually researched and retrieved. With the IAM/PP&E module in place, accountants are able to see, at the individual asset level, out-years' and current month's depreciation. The IAM/PP&E module is expected to also achieve this benefit through the processes described under "Valuation of PP&E" and the "Valuation, Capitalization, and Depreciation Processes." Therefore, many of the same Level III requirements mentioned

previously apply to this anticipated benefit. An additional Level III requirement specific to this anticipated benefit requires management of accountable personal property using the mandatory requirements of the Federal Property Management Systems Requirements.

The performance measure associated with this anticipated benefit is a reduction in the number of property-related recommendations in the independent auditor's annual report on NASA's financial statements.

Property Management Processes. Standardization of the management of NASA- and contractor-held property will result from the use of the WBS elements to track costs of property acquisitions (fabrications and purchases) as described in NID 9250-56. Level III requirements for the IAM/PP&E module supporting this anticipated benefit include

- providing access to data on a project's WBS, with the capability to track costs (resources) against the WBS to support reengineered business processes for capitalized personal property;
- creating access to real-time information about the condition of accountable personal property, its location, value, and status; and
- providing real-time data concerning the condition and location of mission critical, accountable personal property.

The performance measure associated with this anticipated benefit calls for determining the number of equipment master records synchronized with the capitalized records in asset accounting. The goal is to increase the percentage of integrated records.

Manual Processes. Prior to implementation of the IAM/PP&E module, property accountants manually recorded property and depreciation calculations in the general ledger. The IAM/PP&E module is expected, through the integration of logistics and financial systems, to eliminate manual processes such as recording journal voucher entries, calculating depreciation of assets, and maintaining Excel spreadsheets. Also, prior to IAM/PP&E implementation, only equipment managers could accept property using NEMS and dispose of property using NPDMS. All other users completed paper forms to document equipment logistics and did not have access to determine available excess equipment, particularly in other Centers. With IAM/PP&E, end-users can accept equipment electronically, and all NASA users will be able to search N-PROP for excess equipment that is identified for property disposal. Level III requirements for the IAM/PP&E module supporting this anticipated benefit include

- providing the capability to track and manage loans, leases, borrows, transfers, and cannibalizations of accountable personal property and
- providing accountable personal property users and owners the capability to readily access any data that they need and are authorized to have.

Several performance measures are listed in the Performance Measurement Plan related to this anticipated benefit such as the number of automated transactions in Core Financial related to capitalized personal property, the total number of users with access to N-PROP,

and the number of items from excess property transferred or reutilized with the transactions made electronically. The goal is to increase the percentage of each performance measure.

Operational Costs. Previously, NEMS and NPDMS were used to track equipment and property disposal and neither was integrated with the financial system. Operational costs are expected to be reduced as a result of decommissioning NEMS and NPDMS and implementing the IAM/PP&E module and N-PROP. With N-PROP, NASA staff and contractors can see and search excess property and equipment across all Centers for reutilization and borrowing rather than purchasing. Logistics managers expect that the IAM/PP&E module will result in operational cost savings by facilitating the reutilization of equipment. Some of the Level III requirements associated with this benefit are

- providing internal screening of excess accountable personal property to increase reutilization across the Agency and
- establishing processes that promote inter-Center equipment transfers and loans and reduce unnecessary procurements.

The performance measure associated with this anticipated benefit is the number of legacy systems replaced by the IAM/PP&E module and reutilization of excess property. The goal is to increase the percentage of each performance measure, which should correlate to cost reductions as legacy systems are decommissioned and excess property is identified and reutilized.

Stakeholder Input

Stakeholders were included as part of the IAM/PP&E module formulation and implementation. Stakeholders identified project requirements, reviewed requirements the project team developed, and made a determination as to whether each portion of the system developed would meet their requirements. Stakeholders also participated in IAM/PP&E Steering Committee meetings. The IAM/PP&E Project Manager said feedback from the users usually involved minor changes. The IAM/PP&E module delivers a system that stakeholders see as a vast improvement over the legacy systems.

Other Issues

We identified two management issues that we believe, if resolved, would enhance the functionality of the IAM/PP&E module and improve NASA's property management and property accounting. These issues concern validating migrated capital asset data and identifying purchases as controlled equipment at the time they are ordered.

Unvalidated Balances Transferred. Approximately 6,300 records of capital asset data with a gross cost of $32 billion (and a net value of approximately $18.6 billion) were migrated to the new system without revalidating old property balances. These records were previously maintained on Chief Financial Office Property Accounting Branch spreadsheets. Though NASA did not validate the accuracy of the balances, the Agency

plans to allow the capitalized items to "roll off" the books at the end of their depreciation period. As these older assets are fully depreciated over time, new acquisitions will be accounted for in the IAM/PP&E module under improved accounting practices. NASA's strategic focus is to have the newly acquired property values be correct. The Chief Financial Officer, NASA Office of Inspector General, E&Y, and the Audit and Finance Committee have all agreed on this approach after considering the cost-benefit of validating the accuracy and completeness of the historical property values, but await additional guidance from the FASAB. The FASAB task force developing implementation guidance for Federal general PP&E will tackle the issue of how to address and report balances for old, unauditable property at those agencies that have not received unqualified opinions on their financial statement audits.

Inadequate Accounting for Controlled Equipment. In June 2007, the Government Accountability Office (GAO) reported that NASA's equipment management policy allows employees to bypass the Agency's central receiving function—which should serve as the primary control point for receipt and acceptance—and does not limit the amount or type of equipment purchases that may be sent directly to an end-user. GAO reported that

> for controlled equipment that NASA does not report on its financial statements, the system was not being designed with front-end controls that would identify or flag these purchases as equipment when the item is ordered. Instead, NASA relies on end-users to ensure that equipment is entered into the property management system after it has been received.[5]

GAO recommended adoption of a standard business process supported by the software to ensure that the new system would be capable of identifying purchases as controlled equipment when ordered.

When we discussed the GAO report with IAM/PP&E Project managers and the logistics stakeholder, they explained that GAO's recommendation for controlled equipment goes beyond the changes in accounting for capital assets called for in NID 9250-56 and was outside the scope for the IAM/PP&E module during its implementation. The controlled equipment recommendation required changes to business processes in more than the logistics and financial functional areas, such as for equipment requisitioning and procurement processes. Thus, NASA did not incorporate the GAO recommendation into the IAM/PP&E module at the time of the current release. However, identifying purchases as controlled equipment when ordered is an important control for ensuring that the Agency's equipment records are updated on receipt and acceptance of controlled equipment.

Conclusion

If the IAM/PP&E module functions as designed, along with its corresponding changes in business processes and controls, it should help to mitigate reported deficiencies with

[5] Government Accountability Office. "Property Management: Lack of Accountability and Weak Internal Controls Leave NASA Equipment Vulnerable to Loss, Theft, and Misuse" (GAO-07-432, June 25, 2007).

PP&E, which E&Y considered material weaknesses. This should allow for the fair presentation of personal PP&E in future financial statements and demonstrate integration into an automated financial system. We additionally believe that cost and schedule estimates were reasonable and reliable. However, we note that the system's contribution to improved financial reporting may be limited because approximately 6,300 records of migrated capital assets with a gross cost of $32 billion were not validated prior to their transfer into the IAM/PP&E module. Also, issues related to identifying purchases as controlled equipment when ordered remain unresolved.

We did not conduct audit work to address the impact of these issues because E&Y plans to perform testing procedures over the IAM/PP&E module and NASA's corresponding manual controls as part of the FY 2008 financial statement audit.

We appreciate the courtesies extended during our review. If you have any questions, or need additional information, please contact Mr. Daniel R. Devlin, Human Capital and Institutional Management Director, at 202-358-7249.

/s/
Evelyn R. Klemstine

Enclosure

Scope and Methodology

We performed this audit from November 2007 through September 2008 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. Specifically we,

- Reviewed IAM/PP&E requirements in the project's Business Case Analysis, scope documents, and OMB Exhibit 300s for budget years 2008 and 2009.
- Identified project requirements incorporated in the implementation through the IAM/PP&E module project's Agile Scrum developmental Sprints.
- Verified that the project had performed a crosswalk of the project's Level III requirements to the six benefits on the OMB Exhibit 300s for budget years 2008 and 2009.
- Reviewed Office of Federal Financial Management (OFFM) system requirements as listed in the Federal Financial Systems Integration Office (FSIO) or JFMIP Property Management Systems Requirements.
- Verified the project's crosswalk of Level IV requirements to the requirements of federal financial management systems maintained by OFFM.
- Held discussions with IAM/PP&E module project managers, and business process owners from both the logistics community and the Office of the Chief Financial Officer.
- Determined metrics for benefits of the project as listed on the OMB Exhibit 300s, and compared them with the metrics in the Performance Measurement Plan.
- Reviewed the relationship of the anticipated benefits with the Level III requirements for the IAM/PP&E module project.

Criteria

Federal Policy

- Federal financial system requirements in JFMIP-SR-00-4, "Property Management System Requirements," October 2000. The property management system requirements are part of a series of publications entitled Federal Financial Management System Requirements (FFMSR). FFMSR specifies the mandatory functional and technical requirements that agency financial management systems must meet in order to be considered compliant with Federal standards as mandated by the FFMIA.

- OMB Circular A-11, "Preparation, Submission, and Execution of the Budget," July 2007, establishes policy for planning, budgeting, acquisition and management of Federal capital assets, and provides instruction on budget justification and reporting requirements for major information technology investments.

- OMB Circular A-127, "Financial Management Systems," December 1, 2004, requires Federal agencies to establish an integrated financial management system designed to provide complete, reliable, consistent, timely, and useful financial management information on operations to facilitate efficient and effective delivery of programs. The OMB Circular A-127 requires that Federal financial systems follow the requirements of the OFFM, which replaced the FSIO and the JFMIP. Requirements with the FSIO or JFMIP prefix remain applicable.

- OMB Circular A-136, "Financial Reporting Requirements," revised June 29, 2007, provides guidance on the data required for all Federal financial reporting. It requires that Federal agencies must generally prepare and submit audited financial statements to the OMB. Agencies are required to provide assurances related to the FFMIA. The FFMIA assurance statement should provide management's assessment of the organization's compliance with federal financial management systems requirements, standards promulgated by the FASAB, and the US Standard General Ledger at the transaction level.

NASA Policy

- NASA Interim Directive (NID) 9250-56, "Identifying Capital Assets and Capturing Their Costs," November 1, 2007. This NID establishes NASA's procedural requirements for identifying when a PP&E purchase and/or fabrication meets the criteria for capitalization and for segregating the costs of the asset from other project costs so that assets can be properly recorded on NASA's financial statements. This NID describes the process, roles, and responsibilities for identifying those PP&E that must be capitalized; establishing a WBS element to accumulate the PP&E's costs; and reporting those costs.

- NASA Policy Directive (NPD) 4200.1B, "Equipment Management" (Revalidated January 23, 2006). This NPD establishes the financial control, accounting, and reporting requirements for Government-owned equipment, based on the value of the equipment and/or the sensitivity of the equipment. This NPD also mandated the use of the NASA Equipment Management System (NEMS), one of the legacy systems replaced by the IAM/PP&E module. NPD 4200.1B states that equipment includes all items of NASA personal property that are configured as mechanical, electrical, or electronic machines, tools, devices, and apparatuses that have a useful life of 2 years or more. Equipment valued at $100,000 or greater is subject to the financial control, accounting, and reporting requirements of NASA Financial Management Requirement (FMR) Volume 6, Chapter 4, Property, Plant and Equipment, November 2006. Equipment valued from $5,000 to $99,999 will be controlled but not subject to all the requirements of FMR Volume 6, Chapter 4.

- NPR 7120.5C, "NASA Program and Project Management Processes and Requirements," March 22, 2005. NPR 7120.5C defines the management requirements for formulating, approving, implementing, and evaluating NASA programs and projects. These requirements include the responsibility of the Project Manager for providing defensible estimates of the project's life-cycle cost.

- NASA FMR Volume 2 , "Financial Information Systems," June 2006, gives the Chief Financial Officer the responsibility to review and approve the design requirements for the development and enhancement of NASA financial systems, monitor and evaluate the implementation of these systems, and function as the business process owner and decision maker for the use and management of NASA financial systems.

- NASA FMR Volume 6, Chapter 4, "Property, Plant and Equipment," November 2006 sets forth general principles, standards, policies, and procedures to assure compliance with statutory and regulatory requirements regarding NASA's PP&E. These requirements ensure effective financial control over NASA-owned PP&E.

Computer-Processed Data. We did not rely on computer-processed data for this report.

Review of Internal Controls. We reviewed and evaluated the internal controls associated with oversight structure in managing the IAM/PP&E module project. This included an evaluation of polices, procedures and oversight activities of the IAM/PP&E module Project Office to ensure they were in accordance with established requirements. We did not find reportable internal control weaknesses.

Prior Coverage. During the last 5 years, the Government Accountability Office (GAO) and the NASA Office of Inspector General have issued 17 reports of particular relevance to the subject of this report. Unrestricted reports can be accessed over the Internet at http://www.gao.gov (GAO) and http://www.hq.nasa.gov/office/oig/hq/audits/reports/FY07/index.html (NASA).

Government Accountability Office

"Financial Management - Long-standing Financial Systems Weaknesses Present a Formidable Challenge" (GAO-07-914, August 3, 2007)

"Business Modernization: NASA Must Consider Agencywide Needs to Reap the Full Benefits of Its Enterprise Management System Modernization Effort" (GAO-07-691, July 20, 2007)

"Property Management: Lack of Accountability and Weak Internal Controls Leave NASA Equipment Vulnerable to Loss, Theft, and Misuse" (GAO-07-432, June 25, 2007)

"Business Modernization: Some Progress Made toward Implementing GAO Recommendations Related to NASA's Integrated Financial Management Program" (GAO-05-799R, September 9, 2005)

"Performance Budgeting: Efforts to Restructure Budgets to Better Align Resources with Performance" (GAO-05-117SP, February 1, 2005)

"NASA: Lack of Disciplined Cost-Estimating Processes Hinders Effective Program Management" (GAO-04-642, May 28, 2004)

"Information Technology Management: Governmentwide Strategic Planning, Performance Measurement, and Investment Management Can Be Further Improved" (GAO-04-49, January 12, 2004)

"Business Modernization: Disciplined Processes Needed to Better Manage NASA's Integrated Financial Management Program" (GAO-04-118, November 21, 2003)

"Business Modernization: NASA's Challenges in Managing Its Integrated Financial Management Program" (GAO-04-255, November 21, 2003)

"Business Modernization: NASA's Integrated Financial Management Program Does Not Fully Address Agency's External Reporting Issues" (GAO-04-151, November 21, 2003)

"Information Technology: Architecture Needed to Guide NASA's Financial Management Modernization" (GAO-04-43, November 21, 2003)

"Business Modernization: Improvements Needed in Management of NASA's Integrated Financial Management Program" (GAO-03-507, April 30, 2003)

National Aeronautics and Space Administration

"Audit of NASA's Fiscal Year 2007 Financial Statements" (IG-08-001, November 15, 2007)

"System Integration Testing of the Systems, Applications, and Products Version Update Project Needed Improvement" (IG-07-031, September 28, 2007)

"Governance of the Systems, Applications, and Products Version Update Project Needed Improvement" (IG-07-003, November 21, 2006)

"NASA's FY 2006 Financial Statements" (IG-07-004, November 20, 2006)

"Final Memorandum on Audit of the Implementation of Integrated Financial Management Program (IFMP) Audit Recommendations" (IG-05-008, February 1, 2005)

Exhibit 2

Exhibit 2

[redacted]

From: Borda, Gary G. (HQ-MC000)
Sent: Friday, January 23, 2009 11:44 AM
To: Rotella, Robert F. (HQ-MA000); McNutt, Jan (HQ-MC000)
Cc: Graham, Courtney B. (HQ-MA000)
Subject: 2000 GAO Report on NASA's Administrative Review of Patent Infringement Claims
Attachments: NASA's Administrative Review of Patent Infringement Claims_GAO Report_Aug 2000.pdf; DFAR 227_70 Patent Infringement Claims.pdf

FYI – found all this in a Google search. The attached 2000 GAO report on NASA's Administrative Review of Patent Infringement Claims wasn't widely disseminated here since I didn't known about it (guess they thought since I didn't work these claims I didn't need to know – not a very good policy decision from past IP leadership).

The GAO report mentions that "NASA's procedures for administratively reviewing a claim of patent infringement against the agency are set out in an attachment to a September 29, 1987, letter to all NASA installations by the Associate General Counsel for Intellectual Property." I have also never seen the referenced letter. We should find a copy and make sure we are following the procedures.

The GAO report goes on to state that the NASA procedures are modeled after the DOD procedures. I'm not sure what those procedures might be, but There are procedures for administrative claims for patent infringement in the DFAR (Subpart 227.70 – attached).

DOE also has regs on Claims for Patent and Copyright Infringement at 10 CFR Part 782
http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=ae9d0477eeff326f1d13d73becade33d&rgn=div5&view=text&node=10:4.0.2.5.19&idno=10

Gary

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United States General Accounting Office
Washington, DC 20548

Resources, Community, and
Economic Development Division

B-285211

August 8, 2000

The Honorable Robert F. Bennett
United States Senate

Subject: NASA's Administrative Review of a Patent Infringement Claim

Dear Senator Bennett:

On February 7, 2000, the National Aeronautics and Space Administration (NASA) responded to an inventor's complaint that the agency had used his patented technology without approval, compensation, or acknowledgment. NASA told the inventor that it had conducted an administrative review of the matter and concluded that there was no infringement. The inventor contacted you about this matter, and you asked us to review NASA's administrative action on his complaint.

As agreed with your office, this report addresses (1) whether NASA adhered to established procedures in conducting its administrative review of the inventor's infringement claim and (2) what criteria NASA used in reaching its decision. As also agreed, we take no position as to whether NASA infringed the inventor's patent.

Results in Brief

NASA reviewed the inventor's complaint in accordance with its procedures governing administrative reviews of patent infringement claims. Even though the inventor never filed an official claim, NASA treated his complaint as an infringement claim because it had no other mechanism for investigating allegations of infringement and wanted to remove any doubt that it had infringed the patent in question. Also, NASA and the inventor agree that the agency's decision to treat his allegation as an infringement claim probably will work to his advantage if he chooses to bring an infringement suit. The inventor was correct that NASA used the same attorney to conduct the administrative review that earlier had been involved in licensing negotiations on his patent. While this does not violate NASA's procedures, it is inconsistent with federal internal control standards, and NASA said it would separate the duties if such a case arose in the future.

NASA applied federal patent law to reach its decision. NASA interpreted the law as providing that only the patent "claims"—those specific elements set out in the patent

that make the invention novel—can be infringed. After surveying the operations of its field units, NASA concluded that none of its systems—including the Mars Pathfinder landing system and the TransHab Design Concept cited by the inventor—infringed the claims in the inventor's patent. NASA's decision completes its administrative review process. If the inventor wishes to pursue his complaint, his recourse is to file a claim with the U. S. Court of Federal Claims.

Background

A patent is a grant made by the government to an inventor, conveying and securing to him or her the exclusive right to an invention for a term of years. The Patent and Trademark Office (PTO) grants patents in the United States. By its terms, a patent gives an inventor the right to exclude others from making, using, or selling the invention for a specified period, in this instance 17 years. A person infringes another's patent when he or she makes, uses, or sells the subject invention without permission during the patent term.

On June 19, 1990, PTO granted U.S. Patent No. 4,934,631 to the inventor. The patent describes the invention as a "lighter-than-air type vehicle comprising a framework and a series of inflatable lift bags secured to said framework." The lift bags were designed to contain heating elements and a gas, such as hydrogen or helium, in contact with these heating elements.

Believing his technology could be adapted successfully for a broad range of military and civilian projects, the inventor had attempted since 1989 to market his invention to the government. He said that certain agencies, including NASA, expressed interest but declined his offers to license the invention or enter into a contract with him to develop and use his technology.

In 1997, the inventor saw drawings of the Mars Pathfinder landing system developed by NASA and noted that the system used inflatable bags that he believed were similar to those described in his patent. He concluded that NASA had adapted and was using his invention without approval, compensation, or acknowledgment. After further research, he concluded that NASA also was using bags similar to his own in its TransHab Design Concept, which features inflatable structures that can be used to house personnel and equipment in space.

On February 26, 1997, the inventor contacted the NASA Administrator and complained that NASA had used his invention without his approval. The complaint was referred to the Director of the Infringement Division in the Office of the Associate General Counsel for Intellectual Property. After obtaining the inventor's approval, NASA docketed the matter as a "license to proffer" on March 7, 1997, giving NASA permission to send the patent to its various units to determine whether they had an interest in obtaining a license to use the technology. On July 30, 1997, the Director of the Infringement Division sent a letter to the inventor informing him that the agency had no interest in obtaining a license.

On March 31, 1998, the inventor asked the NASA Inspector General to conduct an investigation into NASA's use of his patented technology. The Inspector General conducted a preliminary investigation and concluded the complaint constituted a claim of infringement. On October 14, 1999, the Inspector General referred the case to the Associate General Counsel for Intellectual Property, and on November 3, 1999, the Director of the Infringement Division notified the inventor that it was treating his complaint as a patent infringement claim and was initiating a formal administrative review.

On February 7, 2000, the Director of the Infringement Division notified the inventor by letter that he had completed the administrative review of the infringement claim and found no evidence of infringement by NASA. Accordingly, he said that NASA was denying the inventor's claim and that, if the inventor was not satisfied with this result, his recourse was to file a lawsuit for patent infringement. The Director also pointed out that the statute of limitations—which by law had been suspended, or "tolled," during the administrative review—again would begin to run.[1]

The inventor is not satisfied with NASA's response. From a procedural standpoint, he says he does not understand why NASA chose to treat his complaint as a request for a claim of patent infringement when he had not made a formal request for an administrative review. He also is concerned that the Director of the Infringement Division, who prepared NASA's response, was the same attorney to whom he had spoken over the years about NASA's possibly licensing his invention.

The inventor also disagrees with the criteria NASA used in reaching its decision. He believes that NASA is interpreting the case law on patent infringement too narrowly because, under NASA's interpretation, one could easily "invent around" almost any patent. He said that, in addition to considering the patent claims, NASA should consider such factors as the description and specifications set out in the patent. Moreover, the inventor disagrees with NASA's (1) characterizing his invention as a "dirigible" or a "blimp" and (2) comparing it with single-walled inflatable structures covered by earlier patents. He says NASA did not address his basic complaint that the agency developed an interest in using double-walled inflatable airbags—a primary feature of his invention—only after he brought the potential uses to the agency's attention.

NASA Followed Its Procedures in Conducting the Administrative Review of the Infringement Claim

NASA followed its established procedures in reviewing the inventor's complaint. While NASA was not required to treat the complaint as an infringement claim, it had the authority to do so, and its use of the formal administrative review process was

[1]In its response to the inventor, NASA also noted that the patent had expired. The patent expired on June 19, 1999, because the inventor did not pay the required maintenance fees. Subsequently, however, he filed a petition for reinstatement, paid the fees, and on May 22, 2000, was informed by PTO that his patent was reinstated.

reasonable under the circumstances. The inventor made a written request for an investigation, accusing NASA of infringing his patent and, according to NASA officials, the administrative review is NASA's only mechanism for handling such a complaint. Moreover, while NASA found no infringement on its part, the decision to conduct a formal review may be to the inventor's benefit, as it provides him with additional time and the agency's position on the record if he decides to pursue the matter in the courts.

NASA's Administrative Review, While Not Required, Was Conducted in Accordance With Its Procedures

NASA's procedures for administratively reviewing a claim of patent infringement against the agency are set out in an attachment to a September 29, 1987, letter to all NASA installations by the Associate General Counsel for Intellectual Property. According to the Director of the Infringement Division, these requirements were modeled after those established by the Department of Defense (DOD). He said that, like the DOD regulations, NASA's procedures are intended to provide both the claimant and the agency with an alternative to litigation, although the administrative process is not a prerequisite for litigation. The procedures provide for no administrative appeal; if NASA finds no infringement, the claimant's recourse is to sue in federal court.

NASA's procedures set out specific elements for initiating an administrative review. There must be a claim in writing that makes an allegation of infringement, requests compensation, cites the patent that is believed to have been infringed, and designates the item or process that is alleged to have infringed. The claimant also is encouraged to provide information such as identification of procurements that involve the infringing items, detailed descriptions of the infringing items, a list of persons to whom notices of infringement have been sent, and a listing of all government contracts under which the claimant has performed work. When NASA has determined that it will review a claim, its procedures instruct the Office of the Associate General Counsel for Intellectual Property to docket the case and to inform the claimant of this action. The Associate General Counsel then contacts those NASA installations that are primarily concerned with the subject matter of the alleged infringement and instructs them to determine whether an infringement occurred. Ultimately, the Associate General Counsel responds to the claim in writing, setting out specific reasons if the claim is denied. NASA followed these procedures in this case.

The inventor said that, although he asked NASA for an investigation, he never presented an infringement claim to NASA that would have initiated a formal administrative review. Part of his reason for asking for the investigation was that he did not know or have access to much of the information necessary to determine whether an infringement had occurred. He noted, for example, that he had hoped to obtain details on the technology being used in the Mars Pathfinder and TransHab projects.

The Director of the Infringement Division agreed that, although NASA was not required to initiate a formal administrative review, its decision to do so was proper under the circumstances. He noted that the inventor had requested in writing that NASA conduct

an investigation of his complaint. He said that NASA had decided to treat the request for an investigation as an infringement claim because it had no other mechanism to investigate a complaint and wanted to be positive that it had not, even inadvertently, infringed the inventor's patent. The Director said that NASA wanted to give the inventor every benefit of the doubt and that treating the request for an investigation as an infringement claim ensured that the inventor's concerns received a complete review.

Director Had Authority to Conduct the Administrative Review

A related concern raised by the inventor was that the Director of the Infringement Division—who conducted the administrative review of the infringement claim—was the same attorney with whom the inventor had talked on earlier occasions about a possible contract or licensing arrangement with NASA. Thus, he questioned the Director's impartiality in conducting the administrative review.

The Director of the Infringement Division agreed that he had previous contact with the inventor about his patent. However, he said that this was the result of his having two roles within the division. One role is to act as an intermediary for persons who bring patents to NASA seeking licensing arrangements. The other is to conduct administrative reviews on claims brought by persons who believe NASA may have infringed their patents. He noted that the two roles are complementary and have the same objective—to ensure that NASA avoids even the appearance of infringing another's invention. The Director also noted that he is the only attorney assigned to the Infringement Division, which receives no more than two to three patent infringement claims per year.

In his role as intermediary for persons seeking licensing arrangements, the Director noted that he did not make the decision himself on whether to seek a license but rather sought assistance from the NASA units that might use or be interested in the particular technology. When these units expressed no such interest, the Director was the person who relayed this information to the inventor.

The Director said that in his second role, he conducted the administrative review on the inventor's claim. He said that it did not occur to him that someone might question his impartiality, since he is always the attorney who conducts the administrative reviews. He said that there is no special NASA policy or procedure covering a situation in which the Director had previous involvement with a claimant. The Director also noted that his supervisor, the Associate General Counsel for Intellectual Property, reviewed and approved his decision and the written response before it was sent to the inventor.

We pointed out to the Director of the Infringement Division that, even though he appears to have followed established procedures, his dual role involving the inventor's patent does not appear to be in accordance with the guidelines on the separation of duties set out in the *Comptroller General's Standards for Internal Control in the Federal Government*, which provides as follows:

> "Key duties and responsibilities need to be divided or segregated among different people to reduce the risk of error or fraud. This should include separating the responsibilities for authorizing transactions, processing and recording them, reviewing the transactions, and handling any related assets. No one individual should control all aspects of a transaction or event."

Both the Director and the Associate General Counsel for Intellectual Property said that the separation of duties issue had not occurred to them at the time. They noted that this was the first case in their experience in which the Director had handled a potential licensing arrangement and an infringement claim on the same patent. The Associate General Counsel said that, if such a case occurs again, he will assume responsibility for the administrative review.

Administrative Review Appears to Benefit the Inventor

The Director of the Infringement Division said that NASA's decision to treat the request for an investigation as an infringement claim probably worked to the inventor's advantage. Under 35 U.S.C. 286, there is a 6-year statute of limitations on patent infringement by the federal government. However, the statute is suspended, or "tolled," during the administrative review of an infringement claim. Thus, the time taken by NASA to review the inventor's complaint allows him a longer period in which to file a lawsuit and for which to claim damages. Also, NASA's procedures require the agency to inform a claimant in writing of the basis for denying a claim. By issuing a formal response, NASA provided the inventor with its position, which he could then use in preparing a lawsuit.

We discussed with the inventor the Director's position on the need for and potential benefits of the administrative review. The inventor said that while he did not agree with the need for an administrative review, the way the review was conducted, or the review's finding, the process probably works to his advantage in that he has more time to file a lawsuit and has NASA's position on the record.

NASA Used Established Criteria in Reaching Its Decision

In deciding whether it infringed the inventor's patent, NASA applied federal patent law that only the "claims" in a patent can be infringed. After identifying the relevant elements in each of the inventor's two claims, NASA asked its various operating units to determine whether any of the agency's systems—including the Mars Pathfinder landing system and the TransHab—had used technology similar to that protected by the subject patent. On the basis of the feedback from these units, NASA determined that there was no infringement.

NASA Examined the Claims in the Inventor's Patent

Under the provisions of 35 U.S.C. section 112, a specification as part of the application for a patent "shall conclude with one or more claims particularly pointing out and

distinctly claiming the subject matter which the applicant regards as his invention." Thus, a patentee must "claim" his invention by stating his claims in his application.

Typically, each claim in a patent application consists of several elements. Those claims PTO approves become a part of the patent that is issued. In turn, infringement of a patent is established by showing that an accused, or allegedly infringing, device or process matches or infringes a claim. For this purpose, each element of a claim is deemed to be necessary to the patentee's statement of his or her claim, and each element or its equivalent must exist in the accused device or process for infringement to be proved.[2]

NASA applied these rules in conducting its administrative review. According to the Director of the Infringement Division, his first step in determining whether an infringement occurred was to identify the precise elements actually "claimed" in the patent. He noted that the inventor's patent included only two claims, the first of which is stated as follows:

> "An inflatable air bag for lighter-than-air type vehicles, having a flame resistant liner, said air bag being provided with an interior heating element and a lighter-than-air gas in intimate contact with said heating element, said air bag also including sealed tubular portions communicating with the exterior and passing through opposite ends of said air bag for receiving external structural mounting support thereat."

The inventor's second claim is for a "combination" and is stated as follows:

> "An elongate vehicle including, in combination: a framework provided a door and a forwardly facing window; a series of inflatable lift bags secured to and about said framework, said lift bags containing a lighter-than-air gas and being individually provided with respective interior heating element means for variably heating and thereby variably expanding said gas within each of said lift bags; means for heating said heating elements coupled thereto; propulsion structure coupled to and disposed outside of said framework; and means mounted to and within said framework for supplying power to said propulsion structure, and wherein said air bags are each provided with integral tubes communicating with the exterior at opposite ends of said air bags, said air bags being mounted to said framework by portions of said framework passing through said tubes."

The Director said that these two claims provide few exclusive rights to the inventor, as they give him rights only against inventions that include those specific combinations of elements identified in the claims. For example, the fact that the inventor identifies items such as inflatable air bags or flame-resistant liners – items covered by earlier patents or in the public domain – does not mean that his patent protects inflatable air bags or

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[2] *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17 (1997).

flame-resistant liners. The patent only protects the completely described structures claimed, of which inflatable air bags with flame resistant liners are but components.

To more fully understand the nature of the inventor's complaint, the Director also obtained PTO's examination, or "prosecution," history for the patent. He found that, originally, the patent application had included 14 claims. However, PTO questioned the patentability of all but two of these because they were not unique or would be obvious to someone skilled in the particular field of technology. The inventor then amended his application, leaving only the two claims that eventually were approved by PTO and appear in the issued patent.

NASA Found No Evidence of Infringement

After determining the specific elements covered by the claims in the inventor's patent, the Director of the Infringement Division, by memorandum dated November 3, 1999, contacted all NASA operating units that might be aware of any NASA technologies that were similar to the inventor's two claims. He asked them to conduct an investigation to determine "whether or not you believe that his alleged claim for patent infringement is valid...." He also asked them specifically to analyze whether any of the technologies so identified were involved in either the Mars Pathfinder landing system or the TransHab project. He advised them that the inventor had earlier submitted the patent to NASA and offered to license it to the agency.

The Director said that none of the NASA units identified any technologies or uses consistent with the claims in the inventor's patent. He concluded that, because there were no devices that matched the claims, there was no infringement. He discussed his reasoning in NASA's response to the inventor and, in addition, set out the specific differences between the claims in the inventor's patent and the technology used in the Mars Pathfinder landing system and the TransHab project. The Director said that his February 7, 2000, response to the inventor ended NASA's administrative review of the inventor's complaint. He said that if the inventor is still not satisfied, his only remaining avenue for relief is through the federal courts.

As stated, we do not take a position on whether NASA's conclusion is correct. Under 28 U.S.C. section 1498, the inventor's recourse is to file a claim with the U. S. Court of Federal Claims if he is not satisfied with the agency's decision.

Agency Comments

We provided a draft of this report to NASA for its review and comment. NASA concurred with the report's findings. NASA reiterated that, in the future, the Associate General Counsel for Intellectual Property would have responsibility for administrative reviews of patent infringement claims in those cases where the Director of the Infringement Division was involved in licensing discussions on the same patent. (See enc. I for NASA's comments.)

Scope and Methodology

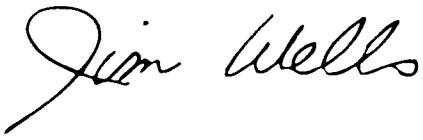
To meet our objectives, we met with and examined records provided by the inventor, the Director of NASA's Infringement Division, and NASA's Associate General Counsel for Intellectual Property. We also obtained data from PTO's patent records. In addition, we reviewed NASA's procedures and relevant federal statutes, regulations, and case law related to patent examination and patent infringement.

We conducted our work from April through July 2000 in accordance with generally accepted government auditing standards.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 7 days after the date of this letter. At that time, we will provide copies to the appropriate congressional committees; interested Members of Congress; the Honorable Daniel S. Goldin, Administrator, National Aeronautics and Space Administration; and the Honorable Jacob J. Lew, Director, Office of Management and Budget. We will also provide copies to others upon request.

If you have any questions about this report, please contact Derek Stewart, Acting Associate Director, or me at (202) 512-3841. Other key contributors to this report were Frankie Fulton, John Hunt, Bert Japikse, and Deborah Ortega.

Sincerely yours,



Jim Wells
Director, Energy, Resources,
and Science Issues

Enclosure

Enclosure

Comments From the National Aeronautics and Space Administration

National Aeronautics and
Space Administration
Office of the Administrator
Washington, DC 20546-0001

Mr. Derek B. Stewart
Acting Associate Director, Energy,
Resources, and Science Issues
Resources, Community, and
Economic Development Division
United States General Accounting Office
Washington, DC 20548

AUG 3 2000

Dear Mr. Stewart:

NASA appreciates the opportunity to comment on your draft report entitled "NASA's Administrative Review of a Patent Infringement Claim (GAO/RCED-00-240R)" that was prepared for Senator Robert F. Bennett.

NASA would like to thank the General Accounting Office for the professional manner in which this investigation was conducted by your staff. The only clarifying comment that NASA would like to make is that while the same attorney conducted evaluations of both the license proffer and the administrative claim, the administrative claim was reviewed by and concurred by the attorney's supervisor, the Associate General Counsel (Intellectual Property). While the supervisor did not sign the claim evaluation letter after his concurrence, his signature was not required by then current procedures. In the future, the Associate General Counsel (Intellectual Property) will assume responsibility and sign similar evaluation letters sent to claimants after his review and concurrence.

NASA has no other issues with the report. Thank you for your assistance in bringing this matter to our attention.

Sincerely,

Daniel R. Mulville

Daniel R. Mulville
Associate Deputy Administrator

(141436)

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SUBPART 227.70–INFRINGEMENT CLAIMS, LICENSES, AND ASSIGNMENTS

(Revised September 21, 1999)

227.7000 Scope.
This subpart prescribes policy, procedures, and instructions for use of clauses with respect to processing licenses, assignments, and infringement claims.

227.7001 Policy.
Whenever a claim of infringement of privately owned rights in patented inventions or copyrighted works is asserted against any Department or Agency of the Department of Defense, all necessary steps shall be taken to investigate, and to settle administratively, deny, or otherwise dispose of such claim prior to suit against the United States. This subpart 227.70 does not apply to licenses or assignments acquired by the Department of Defense under the Patent Rights clauses.

227.7002 Statutes pertaining to administrative claims of infringement.
Statutes pertaining to administrative claims of infringement in the Department of Defense include the following: the Foreign Assistance Act of 1961, 22 U.S.C. 2356 (formerly the Mutual Security Acts of 1951 and 1954); the Invention Secrecy Act, 35 U.S.C. 181-188; 10 U.S.C. 2386; 28 U.S.C. 1498; and 35 U.S.C. 286.

227.7003 Claims for copyright infringement.
The procedures set forth herein will be followed, where applicable, in copyright infringement claims.

227.7004 Requirements for filing an administrative claim for patent infringement.

(a) A patent infringement claim for compensation, asserted against the United States under any of the applicable statutes cited in 227.7002, must be actually communicated to and received by a Department, agency, organization, office, or field establishment within the Department of Defense. Claims must be in writing and should include the following:

(1) An allegation of infringement;

(2) A request for compensation, either expressed or implied;

(3) A citation of the patent or patents alleged to be infringed;

(4) A sufficient designation of the alleged infringing item or process to permit identification, giving the military or commercial designation, if known, to the claimant;

(5) A designation of at least one claim of each patent alleged to be infringed; or

(6) As an alternative to (a)(4) and (5) of this section, a declaration that the claimant has made a bona fide attempt to determine the item or process which is

alleged to infringe, but was unable to do so, giving reasons, and stating a reasonable basis for his belief that his patent or patents are being infringed.

(b) In addition to the information listed in (a) above, the following material and information is generally necessary in the course of processing a claim of patent infringement. Claimants are encouraged to furnish this information at the time of filing a claim to permit the most expeditious processing and settlement of the claim.

(1) A copy of the asserted patent(s) and identification of all claims of the patent alleged to be infringed.

(2) Identification of all procurements known to claimant which involve the alleged infringing item or process, including the identity of the vendor or contractor and the Government procuring activity.

(3) A detailed identification of the accused article or process, particularly where the article or process relates to a component or subcomponent of the item procured, an element by element comparison of the representative claims with the accused article or process. If available, this identification should include documentation and drawings to illustrate the accused article or process in suitable detail to enable verification of the infringement comparison.

(4) Names and addresses of all past and present licenses under the patent(s), and copies of all license agreements and releases involving the patent(s).

(5) A brief description of all litigation in which the patent(s) has been or is now involved, and the present status thereof.

(6) A list of all persons to whom notices of infringement have been sent, including all departments and agencies of the Government, and a statement of the ultimate disposition of each.

(7) A description of Government employment or military service, if any, by the inventor and/or patent owner.

(8) A list of all Government contracts under which the inventor, patent owner, or anyone in privity with him performed work relating to the patented subject matter.

(9) Evidence of title to the patent(s) alleged to be infringed or other right to make the claim.

(10) A copy of the Patent Office file of each patent if available to claimant.

(11) Pertinent prior art known to claimant, not contained in the Patent Office file, particularly publications and foreign art.

In addition in the foregoing, if claimant can provide a statement that the investigation may be limited to the specifically identified accused articles or processes, or to a specific procurement, it may materially expedite determination of the claim.

(c) Any Department receiving an allegation of patent infringement which meets the requirements of this paragraph shall acknowledge the same and supply the other Departments which may have an interest therein with a copy of such communication and the acknowledgement thereof.

(1) For the Department of the Army--Chief, Patents, Copyrights, and Trademarks Division, U.S. Army Legal Services Agency;

(2) For the Department of the Navy--The Patent Counsel for Navy, Office of Naval Research;

(3) For the Department of the Air Force--Chief, Patents Division, Office of The Judge Advocate General;

(4) For the Defense Logistics Agency--The Office of Counsel; for the National Security Agency, the General Counsel;

(5) For the Defense Information Systems Agency--The Counsel;

(6) For the Defense Threat Reduction Agency--The General Counsel; and

(7) For the National Imagery and Mapping Agency--The Counsel.

(d) If a communication alleging patent infringement is received which does not meet the requirements set forth in paragraph (c) of this section, the sender shall be advised in writing—

(1) That his claim for infringement has not been satisfactorily presented, and

(2) Of the elements considered necessary to establish a claim.

(e) A communication making a proffer of a license in which no infringement is alleged shall not be considered as a claim for infringement.

227.7005 Indirect notice of patent infringement claims.

(a) A communication by a patent owner to a Department of Defense contractor alleging that the contractor has committed acts of infringement in performance of a Government contract shall not be considered a claim within the meaning of 227.7004 until it meets the requirements specified therein.

(b) Any Department receiving an allegation of patent infringement which meets the requirements of 227.7004 shall acknowledge the same and supply the other Departments (see 227.7004(c)) which may have an interest therein with a copy of such communication and the acknowledgement thereof.

(c) If a communication covering an infringement claim or notice which does not meet the requirements of 227.7004(a) is received from a contractor, the patent owner shall be advised in writing as covered by the instructions of 227.7004(d).

227.7006 Investigation and administrative disposition of claims.

An investigation and administrative determination (denial or settlement) of each claim shall be made in accordance with instructions and procedures established by each Department, subject to the following:

(a) When the procurement responsibility for the alleged infringing item or process is assigned to a single Department or only one Department is the purchaser of the alleged infringing item or process, and the funds of that Department only are to be charged in the settlement of the claim, that Department shall have the sole responsibility for the investigation and administrative determination of the claim and for the execution of any agreement in settlement of the claim. Where, however, funds of another Department are to be charged, in whole or in part, the approval of such Department shall be obtained as required by 208.7002. Any agreement in settlement of the claim, approved pursuant to 208.7002 shall be executed by each of the Departments concerned.

(b) When two or more Departments are the respective purchasers of alleged infringing items or processes and the funds of those Departments are to be charged in the settlement of the claim, the investigation and administrative determination shall be the responsibility of the Department having the predominant financial interest in the claim or of the Department or Departments as jointly agreed upon by the Departments concerned. The Department responsible for negotiation shall, throughout the negotiation, coordinate with the other Departments concerned and keep them advised of the status of the negotiation. Any agreement in the settlement of the claim shall be executed by each Department concerned.

227.7007 Notification and disclosure to claimants.
When a claim is denied, the Department responsible for the administrative determination of the claim shall so notify the claimant or his authorized representative and provide the claimant a reasonable rationale of the basis for denying the claim. Disclosure of information or the rationale referred to above shall be subject to applicable statutes, regulations, and directives pertaining to security, access to official records, and the rights of others.

227.7008 Settlement of indemnified claims.
Settlement of claims involving payment for past infringement shall not be made without the consent of, and equitable contribution by, each indemnifying contractor involved, unless such settlement is determined to be in the best interests of the Government and is coordinated with the Department of Justice with a view to preserving any rights of the Government against the contractors involved. If consent of and equitable contribution by the contractors are obtained, the settlement need not be coordinated with the Department of Justice.

227.7009 Patent releases, license agreements, and assignments.
This section contains clauses for use in patent release and settlement agreements, license agreements, and assignments, executed by the Government, under which the Government acquires rights. Minor modifications of language (e.g., pluralization of "Secretary" or "Contracting Officer") in multidepartmental agreements may be made if necessary.

227.7009-1 Required clauses.

(a) Covenant Against Contingent Fees. Insert the clause at FAR 52.203-5.

(b) Gratuities. Insert the clause at FAR 52.203-3.

(c) Assignment of Claims. Insert the clause at FAR 52.232-23.

(d) Disputes. Pursuant to FAR Subpart 33.2, insert the clause at FAR 52.233-1.

(e) Non-Estoppel. Insert the clause at 252.227-7000.

227.7009-2 Clauses to be used when applicable.

(a) *Release of past infringement.* The clause at 252.227-7001, Release of Past Infringement, is an example which may be modified or omitted as appropriate for particular circumstances, but only upon the advice of cognizant patent or legal counsel. (See footnotes at end of clause.)

(b) *Readjustment of payments.* The clause at 252.227-7002, Readjustment of Payments, shall be inserted in contracts providing for payment of a running royalty.

(c) *Termination.* The clause at 252.227-7003, Termination, is an example for use in contracts providing for the payment of a running royalty. This clause may be modified or omitted as appropriate for particular circumstances, but only upon the advice of cognizant patent or legal counsel (see 227.7004(c)).

227.7009-3 Additional clauses—contracts except running royalty contracts.
The following clauses are examples for use in patent release and settlement agreements, and license agreements not providing for payment by the Government of a running royalty.

(a) License Grant. Insert the clause at 252.227-7004.

(b) License Term. Insert one of the clauses at 252.227-7005 Alternate I or Alternate II, as appropriate.

227.7009-4 Additional clauses—contracts providing for payment of a running royalty.
The clauses set forth below are examples which may be used in patent release and settlement agreements, and license agreements, when it is desired to cover the subject matter thereof and the contract provides for payment of a running royalty.

(a) *License grant--running royalty.* No Department shall be obligated to pay royalties unless the contract is signed on behalf of such Department. Accordingly, the License Grant clause at 252.227-7006 should be limited to the practice of the invention by or for the signatory Department or Departments.

(b) *License term—running royalty.* The clause at 252.227-7007 is a sample form for expressing the license term.

(c) *Computation of royalties.* The clause at 252.227-7008 providing for the computation of royalties, may be of varying scope depending upon the nature of the royalty bearing article, the volume of procurement, and the type of contract pursuant to which the procurement is to be accomplished.

(d) *Reporting and payment of royalties.*

(1) The contract should contain a provision specifying the office designated within the specific Department involved to make any necessary reports to the contractor of the extent of use of the licensed subject matter by the entire Department, and such office shall be charged with the responsibility of obtaining from all procuring offices of that Department the information necessary to make the required reports and corresponding vouchers necessary to make the required payments. The clause at 252.227-7009 is a sample for expressing reporting and payment of royalties requirements.

(2) Where more than one Department or Government Agency is licensed and there is a ceiling on the royalties payable in any reporting period, the licensing Departments or Agencies shall coordinate with respect to the pro rata share of royalties to be paid by each.

(e) *License to other government agencies.* When it is intended that a license on the same terms and conditions be available to other departments and agencies of the Government, the clause at 252.227-7010 is an example which may be used.

227.7010 Assignments.

(a) The clause at 252.227-7011 is an example which may be used in contracts of assignment of patent rights to the Government.

(b) To facilitate proof of contracts of assignments, the acknowledgement of the contractor should be executed before a notary public or other officer authorized to administer oaths (35 U.S.C. 261).

227.7011 Procurement of rights in inventions, patents, and copyrights.
Even though no infringement has occurred or been alleged, it is the policy of the Department of Defense to procure rights under patents, patent applications, and copyrights whenever it is in the Government's interest to do so and the desired rights can be obtained at a fair price. The required and suggested clauses at 252.227-7004 and 252.227-7010 shall be required and suggested clauses, respectively, for license agreements and assignments made under this paragraph. The instructions at 227.7009-3 and 227.7010 concerning the applicability and use of those clauses shall be followed insofar as they are pertinent.

227.7012 Contract format.
The format at 252.227-7012 appropriately modified where necessary, may be used for contracts of release, license, or assignment.

227.7013 Recordation.
Executive Order No. 9424 of 18 February 1944 requires all executive Departments and agencies of the Government to forward through appropriate channels to the Commissioner of Patents and Trademarks, for recording, all Government interests in patents or applications for patents.

Exhibit 3

Exhibit 3

National Aeronautics and Space Administration

Headquarters
Washington, DC 20546-0001

April 13, 2010

Reply to Attn of: Office of the General Counsel

Mr. Jed Margolin
1981 Empire Road
Reno, NV 89521-7430

Dear Mr. Margolin:

By letter dated March 9, 2010, you appealed an initial determination under the Freedom of Information Act (FOIA), 5 U.S.C. § 552 et seq., issued February 11, 2010, by Ms. Denise Young, NASA Headquarters, Freedom of Information Act Office. Your request sought the following:

1. How many claims for patent infringement have been filed with NASA since January 1, 1999? This includes requests which NASA chose to handle as claims even if the person who submitted it had not intended it to be an official claim.

2. How many of the claims for patent infringement in paragraph 1 were affirmed by NASA?

3. How many of the claims for patent infringement in paragraph 1 were made by what NASA considers Independent Inventors?

4. What does NASA consider an Independent Inventor?

5. How many of the claims for patent infringement that NASA affirmed in paragraph 2 were filed by Independent Inventors?

6. How many of the claims for patent infringement in paragraph 1 were denied by NASA?

7. How many of the claims for patent infringement that were denied by NASA in paragraph 6 resulted in a Court action against NASA?

8. How many of the claims for patent infringement that were denied by NASA that resulted in a Court action against NASA in paragraph 7 were filed by Independent Inventors?

9. Please send me document(s) referred to by GAO as "NASA's procedures for administratively reviewing a claim of patent infringement..."

10. What is the name of the Director of the Infringement Division?

11. Please send me documents relating to a standard of ethics or conduct for NASA contractors.

Although items numbered 1 through 8 were phrased as questions, and not as requests for records as required under the FOIA, NASA conducted a search to determine whether it had responsive records which contained the information requested in the questions. As a result, the initial determination provided a copy of the log of claims for patent infringement against the Agency maintained by the NASA Headquarters Office of General Counsel in response to item number 1. No records were found in response to item number 9, but you were referred to the GAO since you indicated that the record you sought was referenced in a GAO report. Finally, you were provided a link to NASA Procurement Information Circular 08-12 which implements the applicable standards of ethics for Federal contractors in response to item 11. You were advised that a search of NASA Headquarters records conducted pursuant to your request had located no records responsive to items 2 through 8 or item 10.

You have appealed the February 11, 2010 initial determination. In your appeal letter, you state your belief that the "no records" response you received to items 2 through 8 and item 10 "lacks credibility." In addition, you assert your belief that NASA has records responsive to items 3-5 referencing the category of "Independent Inventor" based on a telephone conversation you conducted with a NASA employee in June, 2003. Finally, in response to the "no records" response asking for the identity of NASA's Director of the Infringement Division, you ask NASA to provide you with the name of the person who currently performs that function if that position no longer exists.

With regard to item 9, you state that NASA's response to your request is "uninformed and insulting" by referring you to the U.S. Government Accountability Office (GAO) for a document cited in a 2000 GAO report. With regard to item 11, you state your belief that "it is not credible that NASA has no standard of ethical conduct for its Contractors." Although you do not specifically state a basis for appeal of the initial determination on item 1, we note that you conclude with the statement that NASA's response to your request for items 1 through 11 is "wholly inadequate," so we will consider the Agency's response to all 11 items in this decision on appeal.

Your appeal has been reviewed and processed consistent with NASA FOIA regulations. This process has involved a review of your original December 14, 2009 request, the assertions in your appeal letter, the February 11, 2010 initial determination, and the controlling FOIA case law. Based on this review, and for the reasons below, I have decided to affirm the initial determination.

Federal agencies are not required to create records in order to respond to a FOIA request, *see* National Labor Relations Board v. Sears, Roebuck & Co., 421 U.S. 132, 143 n.10 (1975), nor are they required to answer questions posed as FOIA requests, *see* Zemansky v. EPA, 767 F.2d 569, 574 (9th Cir. 1985). Agencies have an obligation to search for records which may be responsive to requests under the FOIA that are "inartfully posed in the form of questions." Ferri v. Bell, 645 F.2d 1213, 1220 (3d Cir. 1981). However, the request, however inartful, must reasonably describe the records sought as required by the FOIA. 5 U.S.C. 552(a)(3)(A). That is, agency staff must be able to reasonably ascertain exactly which records are being requested and to locate them. Marks v. DOJ, 578 F.2d 261, 263 (9th Cir. 1978).

Item 1 requested the number of claims for patent infringement NASA has received since January 1, 1999. NASA responded to item 1 by providing you with a copy of the log of administrative claims for patent infringement maintained by the NASA Headquarters Office of General Counsel. This record is responsive to your request as it allows you to discern the number of claims for patent infringement the Agency has received in the relevant time period.

Items 2 and 6 request the number of patent claims affirmed and denied by NASA respectively during the relevant period. As you note in your appeal, the log provided as item 1 is incomplete as to the disposition of the claims identified therein. The log was provided as it is maintained by the Agency. Because the Agency is not required to create new records in response a FOIA request, there are no Agency records which enumerate the information requested in items 2 and 6.

There are no responsive records to items 3, 4, 5 and 8 because the search revealed no Agency records which refer to Agency use of the category "Independent Inventors."

There are no responsive records to item 7 because the search revealed no records which enumerate Court actions resulting from claims for patent infringement denied by NASA.

Although in item 9 you failed to identify a particular GAO report, NASA Headquarters Office of General Counsel identified GAO Administrative Review B-285211, NASA's Administrative Review of a Patent Infringement Claim, dated August 8, 2000, which states that the GAO reviewed NASA's procedures for administratively reviewing a claim of patent infringement as attached to a September 29, 1987 letter. As confirmed by the document quoted at page 13 of your appeal, the NASA Headquarters Office of General Counsel did not have a copy of the attachment as of January, 2009. The search revealed that no copy of the attachment has been located since that time.

There are no responsive records to item 10. In your appeal, you make a new request and state that if no one has the title of Director of the Infringement Division, you request the identity of the person who performs that function. The current functional structure of the Commercial and Intellectual Property Law Practice Group in the NASA Headquarters Office of General Counsel is available at http://www.nasa.gov/offices/ogc/commercial/index.html.

In response to item 11, you were provided a reference to the Agency's implementation of the Federal Acquisition Regulations (FAR) implementing rules applicable to contractor ethics. NASA follows the Federal Government standards for contractor ethics as set out in the FAR and therefore, there are no additional records responsive to your request.

Therefore, for the reasons set forth above, the initial determination is affirmed. This is a final determination and is subject to judicial review under the provisions of the FOIA, 5 U.S.C. § 552(a)(4), a copy of which is enclosed.

Sincerely,

Thomas S. Luedtke
Assistant Administrator
for Agency Operations

Enclosure

Freedom of Information Act, Section 552(a)(4), as amended

(4)(A)(i) In order to carry out the provisions of this section, each agency shall promulgate regulations, pursuant to notice and receipt of public comment, specifying the schedule of fees applicable to the processing of requests under this section and establishing procedures and guidelines for determining when such fees should be waived or reduced. Such schedule shall conform to the guidelines which shall be promulgated, pursuant to notice and receipt of public comment, by the Director of the Office of Management and Budget and which shall provide for a uniform schedule of fees for all agencies.

(ii) Such agency regulations shall provide that—

(I) fees shall be limited to reasonable standard charges for document search, duplication, and review, when records are requested for commercial use;

(II) fees shall be limited to reasonable standard charges for document duplication when records are not sought for commercial use and the request is made by an educational or noncommercial scientific institution, whose purpose is scholarly or scientific research; or a representative of the news media; and

(III) for any request not described in (I) or (II), fees shall be limited to reasonable standard charges for document search and duplication.

In this clause, the term 'a representative of the news media' means any person or entity that gathers information of potential interest to a segment of the public, uses its editorial skills to turn the raw materials into a distinct work, and distributes that work to an audience. In this clause, the term 'news' means information that is about current events or that would be of current interest to the public. Examples of news-media entities are television or radio stations broadcasting to the public at large and publishers of periodicals (but only if such entities qualify as disseminators of 'news') who make their products available for purchase by or subscription by or free distribution to the general public. These examples are not all-inclusive. Moreover, as methods of news delivery evolve (for example, the adoption of the electronic dissemination of newspapers through telecommunications services), such alternative media shall be considered to be news-media entities. A freelance journalist shall be regarded as working for a news-media entity if the journalist can demonstrate a solid basis for expecting publication through that entity, whether or not the journalist is actually employed by the entity. A publication contract would present a solid basis for such an expectation; the Government may also consider the past publication record of the requester in making such a determination.

(iii) Documents shall be furnished without any charge or at a charge reduced below the fees established under clause (ii) if disclosure of the information is in the public interest because it is likely to contribute significantly to public understanding of the operations or activities of the government and is not primarily in the commercial interest of the requester.

(iv) Fee schedules shall provide for the recovery of only the direct costs of search, duplication, or review. Review costs shall include only the direct costs incurred during the initial examination of a document for the purposes of determining whether the documents must be disclosed under this section and for the purposes of withholding any portions exempt from disclosure under this section. Review costs may not include any costs incurred in resolving issues of law or policy that may be raised in the course of processing a request under this section. No fee may be charged by any agency under this section—

(I) if the costs of routine collection and processing of the fee are likely to equal or exceed the amount of the fee; or

(II) for any request described in clause (ii)(II) or (III) of this subparagraph for the first two hours of search time or for the first one hundred pages of duplication.

(v) No agency may require advance payment of any fee unless the requester has previously failed to pay fees in a timely fashion, or the agency has determined that the fee will exceed $250.

(vi) Nothing in this subparagraph shall supersede fees chargeable under a statute specifically providing for setting the level of fees for particular types of records.

(vii) In any action by a requester regarding the waiver of fees under this section, the court shall determine the matter de novo: Provided, That the court's review of the matter shall be limited to the record before the agency.

(viii) An agency shall not assess search fees (or in the case of a requester described under clause (ii)(II), duplication fees) under this subparagraph if the agency fails to comply with any time limit under paragraph (6), if no unusual or exceptional circumstances (as those terms are defined for purposes of paragraphs (6)(B) and (C), respectively) apply to the processing of the request. [Effective one year from date of enactment of Public Law 110-175]

(B) On complaint, the district court of the United States in the district in which the complainant resides, or has his principal place of business, or in which the agency records are situated, or in the District of Columbia, has jurisdiction to enjoin the agency from withholding agency records and to order the production of any agency records improperly withheld from the complainant. In such a case the court shall determine the matter de novo, and may examine the contents of such agency records in camera to determine whether such records or any part thereof shall be withheld under any of the exemptions set forth in subsection (b) of this section, and the burden is on the agency to sustain its action. In addition to any other matters to which a court accords substantial weight, a court shall accord substantial weight to an affidavit of an agency concerning the agency's determination as to technical feasibility under paragraph (2)(C) and subsection (b) and reproducibility under paragraph (3)(B).

(C) Notwithstanding any other provision of law, the defendant shall serve an answer or otherwise plead to any complaint made under this subsection within thirty days after service upon the

National Aeronautics and
Space Administration
Mail Code ME000
Washington, DC 20546-0001

Official Business
Penalty for Private Use, $300

Received 4-22-2010

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Exhibit 4

Exhibit 4

The University of Michigan

to all who may read these letters, Greetings:

Hereby it is certified that upon recommendation of the

College of Engineering

The Regents of The University of Michigan have conferred upon

Jed Margolin

in recognition of the satisfactory fulfillment of the prescribed requirements the degree of

Bachelor of Science in Engineering

(Electrical Engineering)

with all the rights, privileges, and honors thereto pertaining here and elsewhere.

Dated at Ann Arbor, Michigan this twenty-third day of December, nineteen hundred and seventy-two

R. A. Fleming
President

R. L. Kennedy
Secretary

Exhibit 5

Exhibit 5

IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF ARIZONA

UNIVERSAL AVIONICS SYSTEMS CORPORATION,

Plaintiff,

vs.

OPTIMA TECHNOLOGY GROUP, INC., OPTIMA TECHNOLOGY CORPORATION, ROBERT ADAMS and JED MARGOLIN,

Defendants.

OPTIMA TECHNOLOGY INC. a/k/a OPTIMA TECHNOLOGY GROUP, INC., a corporation,

Counterclaimant,

vs.

UNIVERSAL AVIONICS SYSTEMS CORPORATION, an Arizona corporation,

Counterdefendant,

OPTIMA TECHNOLOGY INC. a/k/a OPTIMA TECHNOLOGY GROUP, INC.,

Cross-Claimant,

vs.

OPTIMA TECHNOLOGY CORPORATION,

Cross-Defendant.

No. CV 07-588-TUC-RCC

ORDER

This Court, having considered the Defendants' Application for Entry of Default Judgment against Cross-Defendant Optima Technology Corporation, finds no just reason to delay entry of final judgment.

Therefore, IT IS HEREBY ORDERED:

Final Judgment is entered against Cross-Defendants Optima Technology Corporation, a California corporation, and Optima Technology Corporation, a Nevada corporation, as follows:

1. Optima Technology Corporation has no interest in U.S. Patents Nos. 5,566,073 and 5,904,724 ("the Patents") or the Durable Power of Attorney from Jed Margolin dated July 20, 2004 ("the Power of Attorney");

2. The Assignment Optima Technology Corporation filed with the USPTO is forged, invalid, void, of no force and effect, and is hereby struck from the records of the USPTO;

3. The USPTO is to correct its records with respect to any claim by Optima Technology Corporation to the Patents and/or the Power of Attorney; and

4. OTC is hereby enjoined from asserting further rights or interests in the Patents and/or Power of Attorney; and

5. There is no just reason to delay entry of final judgment as to Optima Technology Corporation under Federal Rule of Civil Procedure 54(b).

DATED this 18th day of August, 2008.

Raner C. Collins
United States District Judge

Exhibit 6

Exhibit 6

Jed Margolin

From: "Young, Denise (HQ-NB040)" <denise.young-1@nasa.gov>
To: "Jed Margolin" <jm@jmargolin.com>; "Garver, Lori B. (HQ-AB000)" <lori.garver@nasa.gov>; "HQ-FOIA" <hq-foia@nasa.gov>; <foiaoig@hq.nasa.gov>; "MARTIN, PAUL K. (HQ-WAH10)" <paul.k.martin@nasa.gov>; "Luna, Stella (JSC-AD911)" <stella.luna-1@nasa.gov>; "LARC-DL-foia" <LARC-DL-foia@mail.nasa.gov>
Cc: "Mcconnell, Stephen (HQ-NB040)" <stephen.mcconnell-1@nasa.gov>
Sent: Thursday, February 04, 2010 1:26 PM
Subject: RE: You have ignored my FOIA Request

Mr. Margolin-

This action is currently is currently being reviewed for legal concurrence; this action should be completed within the next couple days. We apology for the delay in this process; but we must adhere to our agency's processing procedures.

If we can of any additional assistance to you, please contact Steve McConnell, Chief FOIA Public Liaison Office, at 202.358.0068 or 877.627.3642; nasafoia@nasa.gov .

Denise Young
Headquarters, FOIA Public Liaison Officer
National Aeronautics and Space Administration (NASA)
300 E Street, S.W., Suite 5L27
Washington, DC 20546-0001
Phone: (202) 358-0701
Fax: (202) 358-4345

From: Jed Margolin [mailto:jm@jmargolin.com]
Sent: Thursday, February 04, 2010 3:58 PM
To: Garver, Lori B. (HQ-AB000); HQ-FOIA; foiaoig@hq.nasa.gov; MARTIN, PAUL K. (HQ-WAH10); Young, Denise (HQ-NB040); Luna, Stella (JSC-AD911); LARC-DL-foia
Subject: You have ignored my FOIA Request

Dear NASA,

I filed a Freedom of Information Act Request on December 14, 2009. See the attached file.

As of this date:

I have not received any documents.

I have not received a request for an extension.

I have not received a FOIA case number.

Under the Freedom of Information Act 5 U.S.C. §552 (a)(6)(A) you had 20 days (excepting Saturdays, Sundays, and legal public holidays) to respond.

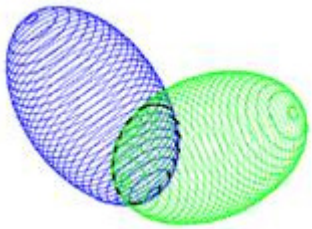
Today is day 35, not including weekends or legal public holidays.

Kindly do me the courtesy of confirming that you have no intention of complying with the Freedom of Information Act and

that I have exhausted all of the administrative remedies that NASA has to offer.

If I do not receive a response to this email by the end of business tomorrow (Friday February 5) I will assume the answer is yes.

Sincerely yours,
Jed Margolin
1981 Empire Rd.
Reno, NV 89521-7430
775-847-7845
==========



www.jmargolin.com

Exhibit 7

Exhibit 7

Jed Margolin

From: "Brett Davis" <davis@auvsi.org>
To: "Jed Margolin" <auvsi@jmargolin.com>
Sent: Thursday, June 03, 2010 11:14 AM
Subject: Re: Abernathy article

Dear Jed,

As far as I can tell from my email trail, he was indeed not listed on the first version of the story that came to me. I edited it to our style and sent it back to Michael Abernathy for review. They then revised my edit and sent it back to me and at that point asked to have him added as an author.

I didn't do a side-by-side analysis of what might have been changed or added by him in particular, though, and wouldn't necessarily been able to tell anyway. I also didn't deal with him directly, only with Michael Abernathy, but that's not an usual arrangement for multi-author stories provided by outside companies.

Hope this helps.

Thanks,
Brett

On 6/2/10 1:01 PM, "Jed Margolin" <auvsi@jmargolin.com> wrote:

> Dear Brett.
>
> As a result of a Freedom of Information Act lawsuit against NASA I was given a preview copy of the article that became **Synthetic Vision Technology for Unmanned Systems: Looking Back and Looking Forward** by Jeff Fox, Michael Abernathy, Mark Draper and Gloria Calhoun which appeared in the December 2008 issue of AUVSI's Unmanned Systems magazine.
>
> The preview copy (called **Synthetic Vision Technology for Unmanned Aerial Vehicles: Historical Examples and Current Emphasis***)* lists only Mike Abernathy, Mark Draper and Gloria Calhoun as the authors.
>
> Can you tell what Jeff Fox contributed to the final version that merited his inclusion as an author?
>
> I have attached the NASA preview copy.
>
> Regards,
>
> Jed Margolin

Exhibit 8

Exhibit 8

Office of the Attorney General

Washington, D.C. 20530

March 19, 2009

MEMORANDUM FOR HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: THE ATTORNEY GENERAL

SUBJECT: The Freedom of Information Act (FOIA)

The Freedom of Information Act (FOIA), 5 U.S.C. § 552, reflects our nation's fundamental commitment to open government. This memorandum is meant to underscore that commitment and to ensure that it is realized in practice.

A Presumption of Openness

As President Obama instructed in his January 21 FOIA Memorandum, "The Freedom of Information Act should be administered with a clear presumption: In the face of doubt, openness prevails." This presumption has two important implications.

First, an agency should not withhold information simply because it may do so legally. I strongly encourage agencies to make discretionary disclosures of information. An agency should not withhold records merely because it can demonstrate, as a technical matter, that the records fall within the scope of a FOIA exemption.

Second, whenever an agency determines that it cannot make full disclosure of a requested record, it must consider whether it can make partial disclosure. Agencies should always be mindful that the FOIA requires them to take reasonable steps to segregate and release nonexempt information. Even if some parts of a record must be withheld, other parts either may not be covered by a statutory exemption, or may be covered only in a technical sense unrelated to the actual impact of disclosure.

At the same time, the disclosure obligation under the FOIA is not absolute. The Act provides exemptions to protect, for example, national security, personal privacy, privileged records, and law enforcement interests. But as the President stated in his memorandum, "The Government should not keep information confidential merely because public officials might be embarrassed by disclosure, because errors and failures might be revealed, or because of speculative or abstract fears."

Pursuant to the President's directive that I issue new FOIA guidelines, I hereby rescind the Attorney General's FOIA Memorandum of October 12, 2001, which stated that the Department of Justice would defend decisions to withhold records "unless they lack a sound

legal basis or present an unwarranted risk of adverse impact on the ability of other agencies to protect other important records."

Instead, the Department of Justice will defend a denial of a FOIA request only if (1) the agency reasonably foresees that disclosure would harm an interest protected by one of the statutory exemptions, or (2) disclosure is prohibited by law. With regard to litigation pending on the date of the issuance of this memorandum, this guidance should be taken into account and applied if practicable when, in the judgment of the Department of Justice lawyers handling the matter and the relevant agency defendants, there is a substantial likelihood that application of the guidance would result in a material disclosure of additional information.

FOIA Is Everyone's Responsibility

Application of the proper disclosure standard is only one part of ensuring transparency. Open government requires not just a presumption of disclosure but also an effective system for responding to FOIA requests. Each agency must be fully accountable for its administration of the FOIA.

I would like to emphasize that responsibility for effective FOIA administration belongs to all of us—it is not merely a task assigned to an agency's FOIA staff. We all must do our part to ensure open government. In recent reports to the Attorney General, agencies have noted that competing agency priorities and insufficient technological support have hindered their ability to implement fully the FOIA Improvement Plans that they prepared pursuant to Executive Order 13392 of December 14, 2005. To improve FOIA performance, agencies must address the key roles played by a broad spectrum of agency personnel who work with agency FOIA professionals in responding to requests.

Improving FOIA performance requires the active participation of agency Chief FOIA Officers. Each agency is required by law to designate a senior official at the Assistant Secretary level or its equivalent who has direct responsibility for ensuring that the agency efficiently and appropriately complies with the FOIA. That official must recommend adjustments to agency practices, personnel, and funding as may be necessary.

Equally important, of course, are the FOIA professionals in the agency who directly interact with FOIA requesters and are responsible for the day-to-day implementation of the Act. I ask that you transmit this memorandum to all such personnel. Those professionals deserve the full support of the agency's Chief FOIA Officer to ensure that they have the tools they need to respond promptly and efficiently to FOIA requests. FOIA professionals should be mindful of their obligation to work "in a spirit of cooperation" with FOIA requesters, as President Obama has directed. Unnecessary bureaucratic hurdles have no place in the "new era of open Government" that the President has proclaimed.

Working Proactively and Promptly

Open government requires agencies to work proactively and respond to requests promptly. The President's memorandum instructs agencies to "use modern technology to inform citizens what is known and done by their Government." Accordingly, agencies should readily and systematically post information online in advance of any public request. Providing more information online reduces the need for individualized requests and may help reduce existing backlogs. When information not previously disclosed is requested, agencies should make it a priority to respond in a timely manner. Timely disclosure of information is an essential component of transparency. Long delays should not be viewed as an inevitable and insurmountable consequence of high demand.

In that regard, I would like to remind you of a new requirement that went into effect on December 31, 2008, pursuant to Section 7 of the OPEN Government Act of 2007, Pub. L. No. 110-175. For all requests filed on or after that date, agencies must assign an individualized tracking number to requests that will take longer than ten days to process, and provide that tracking number to the requester. In addition, agencies must establish a telephone line or Internet service that requesters can use to inquire about the status of their requests using the request's assigned tracking number, including the date on which the agency received the request and an estimated date on which the agency will complete action on the request. Further information on these requirements is available on the Department of Justice's website at www.usdoj.gov/oip/foiapost/2008foiapost30.htm.

*****

Agency Chief FOIA Officers should review all aspects of their agencies' FOIA administration, with particular focus on the concerns highlighted in this memorandum, and report to the Department of Justice each year on the steps that have been taken to improve FOIA operations and facilitate information disclosure at their agencies. The Department of Justice's Office of Information Policy (OIP) will offer specific guidance on the content and timing of such reports.

I encourage agencies to take advantage of Department of Justice FOIA resources. OIP will provide training and additional guidance on implementing these guidelines. In addition, agencies should feel free to consult with OIP when making difficult FOIA decisions. With regard to specific FOIA litigation, agencies should consult with the relevant Civil Division, Tax Division, or U.S. Attorney's Office lawyer assigned to the case.

This memorandum is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or equity by any party against the United States, its departments, agencies, instrumentalities or entities, its officers, employees, agents, or any other person.

Exhibit 9

Exhibit 9

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2205 Content of Prior Art Citation [R-7] - 2200 Citation of Prior Art and Ex Parte Reexamination of Patents

2205 Content of Prior Art Citation [R-7]

The prior art which may be submitted under **35 U.S.C. 301** is limited to "written prior art consisting of patents or printed publications."

*>Pursuant to 35 U.S.C. **301**, an< explanation is required of how the person submitting the prior art considers it to be pertinent and applicable to the patent, as well as an explanation of why it is believed that the prior art has a bearing on the patentability of any claim of the patent. The prior art citation must, at a minimum, contain some broad statement of the pertinency and applicability of the art submitted to the patentability of the claims of the patent for which the prior art citation is made. *>The explanation of why it is believed that the prior art has a bearing on the patentability of any claim of the patent< would be met, for example, by a statement that the art submitted in the prior art citation under 37 CFR **1.501** was made of record in a foreign or domestic application having the same or related invention to that of the patent. >The explanation of how the person submitting the prior art considers it to be pertinent and applicable to the patent would set forth, for at least one of the patent claims, how each item cited shows or teaches at least one limitation of the claim.< Citations of prior art by patent owners may also include an explanation of how the claims of the patent differ from the prior art cited.

It is preferred that copies of all the cited prior art patents or printed publications and any necessary English translation be included so that the value of the citations may be readily determined by persons inspecting the patent files and by the examiner during any subsequent reissue or reexamination proceeding.

All prior art citations filed by persons other than the patent owner must either indicate that a copy of the citation has been mailed to, or otherwise served on, the patent owner at the correspondence address as defined under **37 CFR 1.33(c)**, or if for some reason service on the patent owner is not possible, a duplicate copy of the citation must be filed with the Office along with an explanation as to why the service was not possible. The most recent address of the attorney or agent of record may be obtained from the Office's register of registered patent attorneys and agents maintained by the Office of Enrollment and Discipline pursuant to **37 CFR 10.5** and **10.11**(a).

All prior art citations submitted should identify the patent in which the citation is to be placed by the patent number, issue date, and patentee.

A cover sheet with an identification of the patent should have firmly attached to it all other documents relating to the citation so that the documents will not become separated during processing. The documents themselves should also contain, or have placed thereon, an identification of the patent for which they are intended.

Affidavits or declarations or other written evidence relating to the prior art documents submitted may accompany the citation to explain the contents or pertinent dates in more detail. A commercial success affidavit tied in with a particular prior art document may also be acceptable. For example, the patent owner may wish to cite a patent or printed publication which raises the issue of obviousness of at least one patent claim. Together with the cited art, the patent owner may file (A) an affidavit of commercial success or other evidence of nonobviousness, or (B) an affidavit which questions the enablement of the teachings of the cited prior art.

No fee is required for the submission of citations under **37 CFR 1.501**.

A prior art citation is limited to the citation of patents and printed publications and an explanation of the pertinency and applicability of the patents and printed publications. This may include an explanation by the patent owner as to how the claims differ from the prior art. It may also include affidavits and declarations. The prior art citation cannot include any issue which is not directed to patents and printed publications. Thus, for example, a prior art citation cannot include a statement as to the claims violating **35 U.S.C. 112**, a statement as to the public use of the claimed invention, or a statement as to the conduct of the patent owner. A prior art citation must be directed to patents and printed publications and cannot discuss what the patent owner did, or failed to do, with respect to submitting and/or describing patents and printed publications, because that would be a statement as to the conduct of the patent owner. The citation also should not contain argument and discussion of references previously treated in the prosecution of the invention which matured into the patent or references previously treated in a reexamination proceeding as to the patent.

If the prior art citation contains any issue not directed to patents and printed publications, it should not be entered into the patent file, despite the fact that it may otherwise contain a complete submission of patents and printed publications with an explanation of the pertinency and applicability. Rather, the prior art citation should be returned to the sender as described in **MPEP § 2206**.

Examples of letters submitting prior art under **37 CFR 1.501** follow.

EXAMPLE I

Submission by a third party:

Example I (Submission by a third party) [Page 1 of 5]

IN THE UNITED STATESPATENT AND TRADEMARK OFFICE
In re patent of
Joseph Smith
Patent No. 9,999,999
Issued: July 7, 2000
For: Cutting Tool
Submission of Prior Art Under 37 CFR1.501
Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The undersigned herewith submits in the above-identified patent the following prior art (including copies thereof) which is pertinent and applicable to the patent and is believed to have a bearing on the patentability of at least claims 1 - 3 thereof:

Weid et al U.S. 2,585,416 April 15, 1933
McGee U.S. 2,722,794 May 1, 1934
Paulk et al U.S. 3,625,291 June 16, 1936

Each of the references discloses a cutting tool strikingly similar to the device of Smith in having pivotal handles with cutting blades and a pair of dies. It is believed that each of the references has a bearing on the patentability of claims
1 - 3 of the Smith patent.

Insofar as claims 1 and 2 are concerned, each of the references clearly anticipates the claimed subject matter under 35 U.S.C. 102.

As to claim 3, the differences between the subject matter of this claim and the cutting tool of Weid et al are shown in the device of Paulk et al. Further, Weid et al suggests that different cutting blades can be used in their device. A person of ordinary skill in the art at the time the invention was made would have been led by the suggestion of Weid et al to the cutting blades of Paulk et al as obvious substitutes for the blades of Weid et al.

Respectfully submitted,
(Signed)

Certificate of Service

I hereby certify on this first day of June 1982, that a true and correct copy of the foregoing "Submission of Prior Art" was mailed by first-class mail, postage paid, to:

Ben Schor
555 Any Lane
Anytown,VA 22202

(Signed)

John Jones

EXAMPLE II

Submission by the patent owner:

Example II (Submission by the patent owner) [Page 1 of 3]

IN THE UNITED STATESPATENT AND TRADEMARK OFFICE

In re patent ofJoseph SmithPatent No. 9,999,999Issued: July 7, 2000For: Cutting Tool

Submission of Prior Art Under 37 CFR1.501

Hon. Commissioner for PatentsP.O. Box 1450Alexandria, VA 22313-1450

Sir:

The undersigned herewith submits in the above identified patent the following prior art (including copies thereof) which is pertinent and applicable to the patent and is believed to have a bearing on the patentability of at least claims 1-3 thereof:

Example II (Submission by the patent owner) [Page 1 of 3]

Weid et al U.S. 2,585,416 April 15, 1933
McGee U.S. 2,722,794 May 1, 1934
Paulk et al U.S. 3,625,291 June 16, 1936

Each of the references discloses a cutting tool strikingly similar to the device of Smith in having pivotal handles with cutting blades and a pair of dies. While it is believed that each of the references has a bearing on the patentability of claims 1 - 3 of the Smith patent, the subject matter claimed differs from the references and is believed patentable thereover.

Insofar as claims 1 and 2 are concerned, none of the references show the particular die claimed and the structure of these claimed dies would not have been obvious to a person of ordinary skill in the art at the time the invention was made.

As to claim 3, while the cutting blades required by this claim are shown in Paulk et al, the remainder of the claimed structure is found only in Weid et al. A person of ordinary skill in the art at the time the invention was made would not have found it obvious to substitute the cutting blades of Paulk et al for those of Weid et al. In fact, the disclosure of Weid et al would lead a person of ordinary skill in the art away from the use of cutting blades such as shown in Paulk et al.

The reference to McGee, while generally similar, lacks the particular cooperation between the elements which is specifically set forth in each of claims 1-3.

Respectfully submitted,

(Signed)
William GreenAttorney for Patent OwnerReg. No. 29760

Exhibit 10

Exhibit 10

REEDFAX
THE PATENT CONNECTION

United States Patent File History

Tab Listings

A. References (if applicable)
- **A1**–U.S. References
- **A2**–Foreign References

B. Jacket (face of file, contents flap, index of claims, PTO 270, searched)

C. Printed Patent

D. Specification (serial no. sheet, abstract, specification, claims)

E. Oath
- **E1**–Small Entity Status (if applicable)

F. Drawing Figures (if applicable)

G. PTO/Applicant Correspondence

H. Original Patent Application (in cases of FWC)

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01152

TO: Kelly Wright

Company Number: 3614
Account Number: 1306584
Client Reference: for BARRY GIBBENS-INTERFERENCE

Date: 05/16/2003

Patent Number: 5566073
File History

Comments: Overnight Courier

Address: Kelly Wright
NASA Langley Research Center
Office of Patent Counsel
Building 1229, 132E
MS 212
Hampton VA 236810001

Telephone Number: 757-864-2828

ISSUE CLASSIFICATION	
Class	Subclass
364	449

5566073

UTILITY SERIAL NUMBER	PATENT DATE	PATENT NUMBER
08/513298	OCT 15 1996	5566073

SERIAL NUMBER	FILING DATE	CLASS	SUBCLASS	GROUP ART UNIT	EXAMINER

APPLICANTS

ABN

TN

TN

Foreign priority claimed ☐ yes ☒ no; 35 USC 119 conditions met ☐ yes ☒ no; Verified and Acknowledged ___ Examiner's initials	AS FILED	STATE OR COUNTRY	SHEETS DRWGS.	TOTAL CLAIMS	INDEP. CLAIMS	FILING FEE RECEIVED	ATTORNEY'S DOCKET NO.
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ADDRESS

ISSUE FEE IN FILE

TITLE

Environment

#6 5-9-95

U.S. DEPT. OF COMM./PAT. & TM—PTO-436L (Rev.12-94)

PARTS OF APPLICATION FILED SEPARATELY	Applications Examiner
NOTICE OF ALLOWANCE MAILED	CLAIMS ALLOWED
6-18-96	Total Claims: 37 / Print Claim: 1
TAN NGUYEN, Assistant Examiner	
ISSUE FEE	DRAWING
Amount Due: $625.00 / Date Paid: 9-19-96	Sheets Drwg.: 13 / Figs. Drwg.: 32 / Print Fig.: 4
Primary Examiner	ISSUE BATCH NUMBER: B16
Label Area	PREPARED FOR ISSUE

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Form PTO-436A (Rev. 8/92)

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(FACE)

08/513298

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INITIALS _____

PATENT APPLICATION

08513293

CONTENTS

Date Entered or Counted		Date Received or Mailed
	1. Application _____ papers.	
	2. Re Cmdt. C	9-7-95
	3. Re Cmdt. D	9-7-95
	4. ~~Re Cmdt E Ltr~~	10-20-95
1-2	5. Request for 3 month	1/22/96
	6. Examiner Interview Summary Record	3-15-96
4-22	7. Cmdt E	4-19-96
6-18	8. Notice of Allow	6-18-96
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EXAMINER	49		8-10-94
TYPIST		519	8/16
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INDEX OF CLAIMS

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STAPLE AREA

☆U.S.G.P.O.: 1994 - 378-972

PATENT NUMBER

APPLICATION SERIAL NUMBER
08/513,298

APPLICANT'S NAME (PLEASE PRINT)
MARGOLIN

IF REISSUE, ORIGINAL PATENT NUMBER

ORIGINAL CLASSIFICATION

CLASS	SUBCLASS
364	449

CROSS REFERENCE(S)

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
364	456	457			
340	990	995			
395	127	129			

INTERNATIONAL CLASSIFICATION

G	0	6	F	3	/14
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GROUP ART UNIT
2304

ASSISTANT EXAMINER (PLEASE STAMP OR PRINT FULL NAME)
TAN NGUYEN

PRIMARY EXAMINER (PLEASE STAMP OR PRINT FULL NAME)
KEVIN J. TESKA
SUPERVISORY PATENT EXAMINER
GROUP 2300

PTO 270
(REV. 5-91)

ISSUE CLASSIFICATION SLIP

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

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SYMBOLS

- ✓ .... Rejected
- = ... Allowed
- − (Through numeral) Canceled
- ÷ .... Restricted
- N .... Non-elected
- I .... Interference
- A .... Appeal
- O .... Objected

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INDEX OF CLAIMS

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SYMBOLS

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[redacted]

SEARCHED

Class	Sub.	Date	Exmr.
364	449 455 456 457 460	12/11/95	TN
370	990, 995		
345	7 11 23 27		
315	119, 124, 125, 127, 129		
update search as above		06/14/96	TN

SEARCH NOTES

	Date	Exmr.
IEEE search	12/15/95	TN

IEEE/IEE Publications On-disc Jan 1988 - Sep 1995

Search Options:
Search for both singular and plurals: YES
Search for spelling variants: NO
Display intermediate result: NO

Num	Search	Hits
#1	(elevation or altitude) and data and base	9
#2	terrain and (data or database)	529
#3	#1 and #2	3
#4	digital terrain elevation data	1
#5	#4 or dted	9

INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.
364	449 456 457	06/14/96	TN
370	990 995		
395	125 127 129		

United States Patent [19]

Margolin

[11] Patent Number: 5,566,073
[45] Date of Patent: Oct. 15, 1996

2

[54] PILOT AID USING A SYNTHETIC ENVIRONMENT

[76] Inventor: Jed Margolin, 3570 Pleasant Echo Dr., San Jose, Calif. 95148-1916

[21] Appl. No.: 513,298

[22] Filed: Aug. 9, 1995

Related U.S. Application Data

[63] Continuation of Ser. No. 274,394, Jul. 11, 1994, abandoned.

[51] Int. Cl.[6] G06F 3/14; G09B 9/30

[52] U.S. Cl. 364/449; 364/456; 364/457; 340/990; 340/995; 395/127; 395/129

[58] Field of Search 364/449, 455, 364/456, 457, 460; 340/990, 995; 345/7, 11, 23, 27; 395/119, 124, 125, 127, 129

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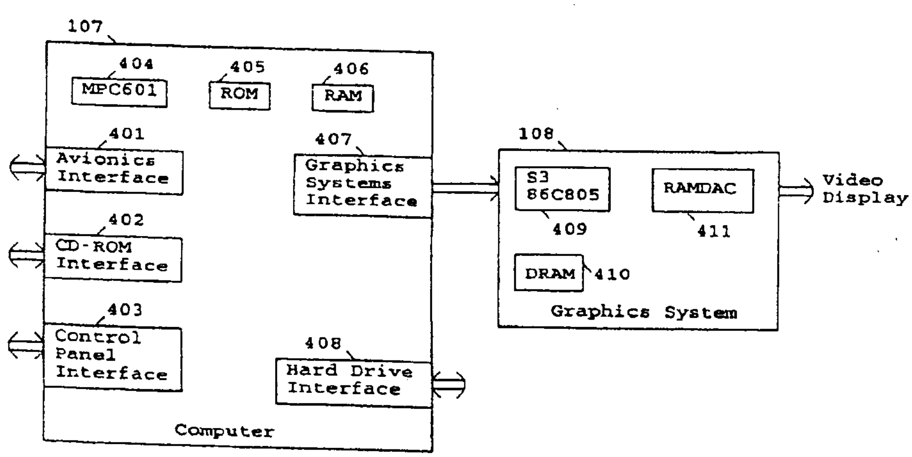
(List continued on next page.)

Primary Examiner—Kevin J. Teska
Assistant Examiner—Tan Nguyen
Attorney, Agent, or Firm—Blakely, Sokoloff, Taylor & Zafman

[57] ABSTRACT

A pilot aid using synthetic reality consists of a way to determine the aircraft's position and attitude such as by the global positioning system (GPS), a digital data base containing three-dimensional polygon data for terrain and manmade structures, a computer, and a display. The computer uses the aircraft's position and attitude to look up the terrain and manmade structure data in the data base and by using standard computer graphics methods creates a projected three-dimensional scene on a cockpit display. This presents the pilot with a synthesized view of the world regardless of the actual visibility. A second embodiment uses a head-mounted display with a head position sensor to provide the pilot with a synthesized view of the world that responds to where he or she is looking and which is not blocked by the cockpit or other aircraft structures. A third embodiment allows the pilot to preview the route ahead or to replay previous flights.

37 Claims, 13 Drawing Sheets



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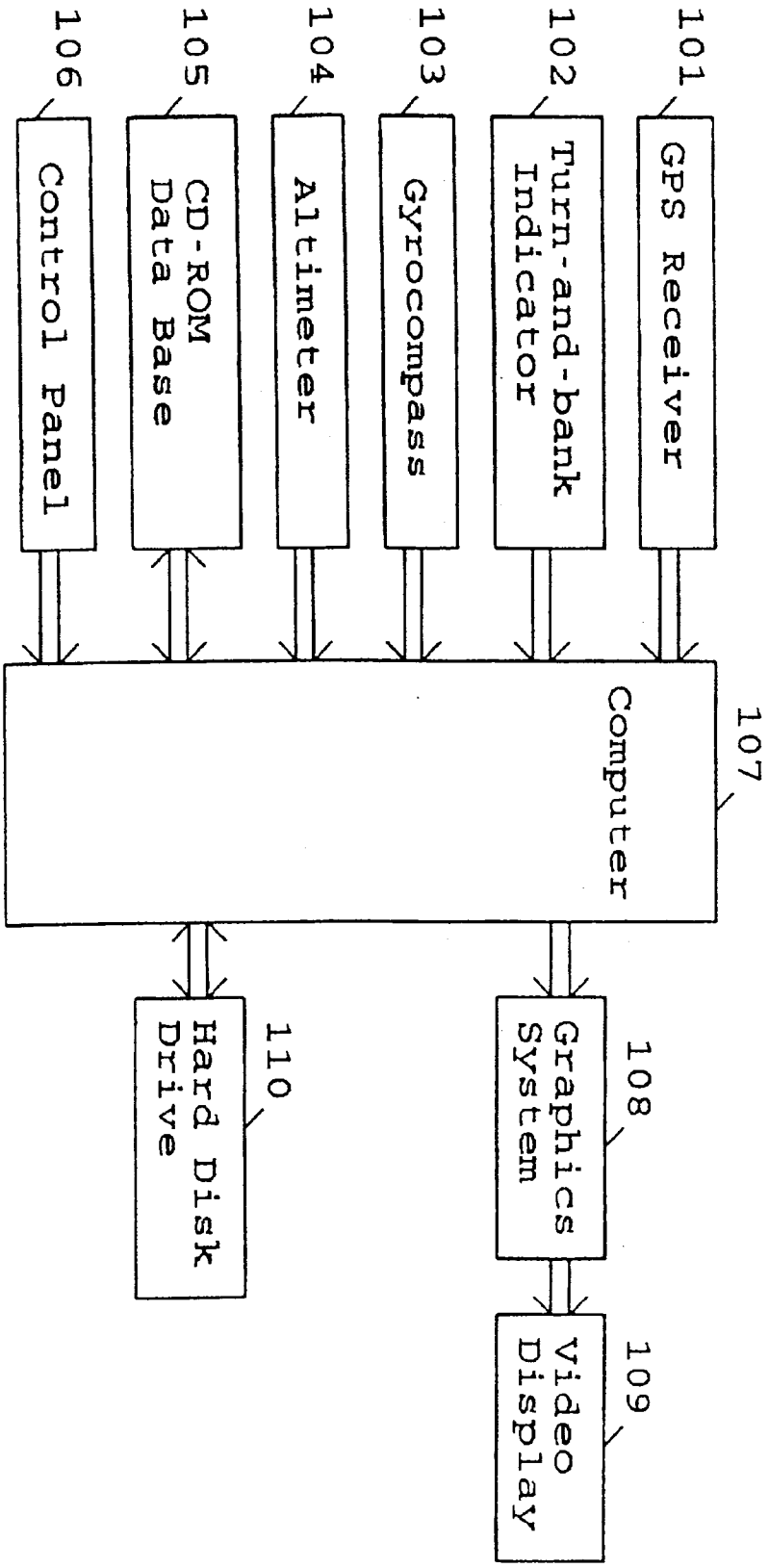
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GPS Receiver
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Graphics System
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Video Display
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Hard Disk Drive

Fig. 1