National Aeronautics and Space Administration

Headquarters
Washington, DC 20546-0001

November 5, 2009

Reply to Attn of: 08-HQ-F-00270

Mr.Jed Margolin
1981 Empire Road
Reno, NV 89521

Dear Mr. Margolin:

This is a supplemental response to your Freedom of Information Act (FOIA) request for "all documents related to the Administrative Claim of Jed Margolin for Infringement of U.S. Patent Nos. 5,566,073 and 5,904,724; NASA Case No. I-222," from the files of the National Aeronautics and Space Administration (NASA).

Although arguably outside the scope of your request to the NASA Headquarters FOIA Office, NASA has expanded its search to identify additional records, provided by offices located at the Johnson Space Center (JSC), Langley Research Center (LaRC), the NASA Management Office (NMO) and Headquarters (HQ), which are considered responsive to your request. These enclosed documents, consisting of approximately 4,000 pages of agency records are a part of a system of records exempt from the mandatory disclosure provisions under Title 5, USC §552 of the FOIA. Certain documents and portions of documents have been withheld under applicable FOIA exemptions.

The removal of this information constitutes a partial denial pursuant to the following provisions of Title 5, USC, §552:

(b)(3) – implementing nondisclosure provisions that are contained in 41 U.S.C. § 253b, which protects "proposals in the possession or control of an executive agency";

(b)(4) – which protects "trade secrets and commercial or financial information obtained from a person that is privileged or confidential";

(b)(5) – which protects inter-agency documents generated which "are predecisional and/or deliberative in nature" and information protected as attorney work product; and

(b)(6) – which protects the privacy interests of individuals by protecting "information concerning his or her person."

Since you have appealed the initial response to this FOIA and instituted litigation against NASA on your request, your administrative remedies stemming from this supplemental response have been exhausted and any appeal on this supplemental response must be addressed in that action.

Any further questions should be directed to the undersigned, at (202) 358-0068.

Sincerely,

Stephen L. McConnell
NASA Freedom of Information Act Officer

National Aeronautics and Space Administration

Headquarters
Washington, DC 20546-0001

March 19, 2009

Reply to Attn of: Office of the General Counsel

CERTIFIED MAIL

Dr. Robert Adams, CEO
Optima Technology Group
[redacted] (b)(6)

RE: Administrative Claim for Infringement of US Patent No. 5,904,724;
NASA Case No. I-222

Dear Dr. Adams:

This letter concerns the above-identified administrative claim for patent infringement.

NASA received the initial notification of this claim in an email dated May 12, 2003, from Mr. Jed Margolin addressed to attorneys at the NASA Langley Research Center claiming that "NASA may have used one or more of [Mr. Margolin's] patents in connection with the X-38 project and may be using one or more of my patents in other projects using Synthetic Vision". Mr. Margolin identified two patents that he believed NASA may be infringing; the subject patent and Patent No. 5,566,073. On June 7, 2003, Mr. Margolin submitted his claim by fax to the NASA HQ attorney, Mr. Alan Kennedy. Mr. Kennedy responded by letter dated June 11, 2003 acknowledging the administrative claim and requesting that Mr. Margolin give a more detailed breakdown of the exact articles or processes that constitute the claim. Mr. Margolin responded by letter dated June 17, 2003, withdrawing his claim with regard to U.S. Patent No. 5,566,073, leaving the remaining claim for the subject patent. NASA is aware of the long pendency of this matter and we regret the delay.

On July 14, 2008 Optima Technology Group sent a letter addressed to Mr. Kennedy stating that they were the owners of the Jed Margolin patents due to an assignment and requesting that NASA now license the technology of the subject patent. With an email dated August 6, 2008 from Optima, NASA received a copy of a Patent Assignment, dated July 20, 2004, executed by Jed Margolin, the sole inventor on the subject patent, by which the entire right, title and interest in the patent has been assigned to Optima Technology Group, Inc. We previously noted in a letter dated August 20, 2008 from Mr. Jan McNutt of our office addressed to you that NASA believes there are certain irregularities surrounding this and collateral assignment documents associated with the subject patent. However, NASA will at this time forestall a detailed consideration of that issue. Instead, we will assume your *bona fides* in asserting that you are the legitimate owner of the subject patent and communicate

our findings directly with you. To the extent that Mr. Margolin has any interest in this matter, formally or informally, we will leave it up to you whether or not to communicate with him.

In light of the prior claim by Mr. Margolin, we consider your license proffer as an administrative claim of patent infringement. We turn now to the substance of your claim. In response to your initial letter dated July 14, 2008, Mr. McNutt's August 20, 2008 letter posed a number of questions, the purpose of which was to enable NASA to fully evaluate the details of your claim. Your organization failed to respond to these questions and, further, advanced the position that this matter does not involve a *new* claim (*Adams letter to McNutt, August 25, 2008*). We disagree that this is not a new claim. Nevertheless, NASA proceeds – in order to bring closure to this matter – on the basis that this claim centers around allegations that infringement arose from activities associated with NASA's X-38 Program, as advanced by Mr. Margolin. Accordingly, our investigation of this claim necessarily reflects the answers previously furnished by Mr. Margolin in response to NASA's June 11, 2003 letter to him containing substantially the same set of questions.

U.S. Patent No. 5,904,724 issued with twenty claims, claims 1 and 13 being the sole independent claims.

In order for an accused device to be found infringing, each and every limitation of the claim must be met by the accused device. To support a finding of literal infringement, each limitation of the claim must be met by the accused device exactly, any deviation from the claim precluding a finding of infringement. See *Lantech, Inc. v. Keip Mach. Co.*, 32 F.3d 542 (Fed. Cir. 1994). If an express claim limitation is absent from an accused product, there can be no literal infringement as a matter of law. See *Wolverine World Wide, Inc. v. Nike, Inc.*, 38 F.3d 1192, 1199 (Fed. Cir.1994).

In applying these legal precepts, reproduced below are the relevant portions of claims 1 and 13.

> Claim 1. A system comprising:
>
> * * *
>
> a computer
>
> * * *
>
> said computer is. . .for *determining a delay time* for communicating said flight data between said computer and said remotely piloted aircraft, and wherein said computer adjusts the sensitivity of said set of one or more remote flight controls based on said delay time. (emphasis added.)

> Claim 13. A station for flying a remotely piloted aircraft that is real or simulated comprising:
>
> * * *
>
> a computer
>
> * * *

> said computer. . . to *determine a delay time* for communicating. . .flight control information between said computer and [a] remotely piloted aircraft, and said computer to adjust the sensitivity of [a] set of remote flight controls based on said delay time. . . .(emphasis added.)

NASA has investigated activities surrounding the X-38 program at its Centers that conducted X-38 development efforts and has determined that no infringement has occurred. This result is compelled because none of NASA's X-38 implementations utilized a computer which is "for determining a delay time for communicating said flight data between said computer and said remotely piloted aircraft," as required by claim 1, nor a "computer ... to determine a delay time for communicating ... flight control information between said computer and [a] remotely piloted aircraft," as required by the limitations of claim 13.

Given that a computer which measures delay time is lacking from the NASA X-38 configuration, it follows that the NASA X-38 configuration had no "adjusting of the sensitivity of [a] set of one or more remote flight controls based on said delay time", as required in claim 1. Similarly, because the NASA X-38 configuration had no "computer to determine a delay time for communicating ... flight control information between said computer and [a] remotely piloted aircraft, the configuration also had no adjusting of "the sensitivity of [a] set of remote flight controls based on said delay time", as called for by claim 13.

For at least the above-explained exemplary reasons, claims 1 and 13 have not been infringed. It is axiomatic that none of the dependent claims may be found infringed unless the claims from which they depend have been found to be infringed. *Wahpeton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546 (Fed. Cir. 1989). One who does not infringe an independent claim cannot infringe a claim dependent on, and thus containing all the limitations of, that claim. *Id.* Thus, none of claims 2-12 and 14-20 have been infringed.

NASA's X-38 development efforts ended in 2002. There may also be other features in NASA's X-38 development efforts that, upon further analysis, would reveal yet more recited claim limitations that are lacking in the NASA configuration related to those efforts.

We also note as a point of particular significance that the limitations included in claims 1 and 13 discussed above were added by amendment during the prosecution of the patent application. It is clear from an analysis of the patent application file wrapper history that the individual prosecuting the application stressed the importance of "the measurement of a communication delay in order to adjust the sensitivity of flight controls based on that delay." Also noted is the distinguishing arguments that these claims require that there be a "computer ... located in the pilot station" and that "at least one real time measurement of the delay and some adjustment is contemplated." (See *Applicant's Amendment and Remark*, February 27, 1998 and *Response Under 37 C.F.R. § 1.116*, July 6, 1998). Clearly, the Patent Office Examiner allowed the application based on these prosecutorial arguments.

We have completed our investigation regarding the claim of patent infringement of U.S. Patent No. 5,904,724 and have determined that there is no patent infringement by, or

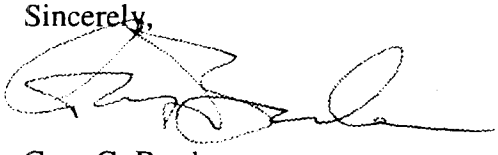
unauthorized use on behalf of, NASA. The above detailed discussion explains the basis for NASA's analysis and decision regarding the subject administrative claim.

As an aside, during NASA's investigation, numerous pieces of evidence were uncovered which would constitute anticipatory prior knowledge and prior art that was never considered by the U.S. Patent and Trademark Office during the prosecution of the application which matured into Patent No. 5,904,724. In view of the clear finding of lack of infringement of this patent, above, NASA has chosen to refrain from a discussion that would demonstrate, in addition to non-infringement, *supra*, invalidity of the subject patent. However, NASA reserves the right to introduce such evidence of invalidity in an appropriate venue, should the same become necessary.

This is a FINAL agency action and constitutes a DENIAL of the subject administrative claim for patent infringement.

Pursuant to 35 U.S.C. § 286, the statute of limitations for the filing of an action of patent infringement in the United States Court of Federal Claims is no longer tolled. Thus, any further appeal of this decision must be made by filing a claim for patent infringement in the United States Court of Federal Claims, pursuant to 28 U.S.C. § 1498(a).

Sincerely,



Gary G. Borda
Agency Counsel for Intellectual Property

[redacted]

From: Fein, Edward K. (JSC-AL)
Sent: Tuesday, September 26, 2006 9:11 AM
To: Kennedy, Alan J. (HQ-MC000)
Cc: Borda, Gary G. (HQ-MC000)
Subject: FW: and the very last communication of the day
Attachments: PSISDG_3691_1_149_1.pdf

fyi ...

From: Mike Abernathy [redacted] (b)(6)
Sent: Monday, September 25, 2006 8:18 PM
To: Delgado, Francisco J. (JSC-ER2); Fein, Edward K. (JSC-AL)
Subject: FW: and the very last communication of the day

Mike Abernathy
Rapid Imaging Software, Inc.

From: Mike Abernathy [redacted] (b)(6)
Sent: Monday, September 25, 2006 6:25 PM
To: FEIN, EDWARD K. (JSC-HA) (NASA); DELGADO FRANCISCO J. (FRANK) (redacted); Kennedy, Alan J. (HQ-MC000); 'redacted'; redacted; 'Moore, Thomas, Mr, OSD-ATL'; 'Davey, Jon (Bingaman)'
Subject: and the very last communication of the day

(b)(6)

Hi All,

Let me summarize what I think has just happened to our company.

In late 1995 we introduce our LandForm synthetic vision system to the market as COTS software product.

In 1997/8 we sell this to NASA and together we are the first people on earth to create a synthetic vision flight guidance system for a remotely piloted vehicle. Starting in 1998 the X38 is captive carried and test flown using this system. We documented our success in the attached document written in 1998 and published in early 1999. It was my privilege to be at Edwards when it happened, and is the highlight of my career until the program is cancelled in 2002.

We go on and demonstrate that our software can be used as pilot aid to other UAVs including Predator, Shadow, Tern, and many more. We receive no interest in this application, but instead they use it for sensor operator stations. It is a commercial success and people say good things about it. It is sold to mostly to a commercial UAV manufacturer named AAI Corporation. Many tests are done and the military guys all like it.

In 1999 the patent office issues a patent to a former Atari employee named Margolin for a Synthetic Environment for Remotely Piloted Vehicle. He had evidently applied for it in 1996. Shortly thereafter he begins to complain to NASA that they and RIS infringed upon his patent presumably by flying a system 2 years before he received his patent. Is this a joke?

In 7 years he never so much as asked RIS about using his technology. Margolin as best I can tell never built this system and never test flew it. Can't say as I blame him because his system looks to me like a crater looking for an address. It cannot be safely operated in the form patented (no autopilot). No one is even stupid enough to build it this way, not even him.

Sometime after that, I am alerted to the patent. I read it, but since there are major differences in the way X-38 worked with our software, I felt strongly that we had not infringed. I provide this information, plus evidence of prior art to NASA legal counsel. I am troubled because really I can't see how his system could fly because it would fail during link loss.

00021

Margolin also had a patent on synthetic vision for manned aircraft (if you can imagine) and we found copious prior art for that. I am also troubled because I never hear that the request for reexamination has been sent in by NASA.

Last week I received an email from Optima technology group threatening (thinly veiled) to destroy our relationships with our customers and sue us if we don't license their technologies. We explain that we do not sell software for use in piloting unmanned aerial vehicles any more owing to insurance which is true. We had demonstrated this in the past, but there really is not much market that we could see. We also explained that we had not infringed and why we thought we had been respectful of their patent, but they just tried to make it look like we infringed. But we did not.

They know we cannot withstand the onslaught of their lawsuits, even though we are clearly and obviously not guilty of infringement. They think that we will have to fold and accept their license, but we cannot do this because they are legal blackmailers, and because they are selling defective technology. If we give in, then they will just destroy some other little companies they way they did ours. And we cannot let anyone pay them off for us, because that just gives them funds to go destroy another company. For many years our company has tried to provide an innovative product with an excellent value and never compromise our integrity. I cannot let this nonsense bring that to an end by pretending that we are licensing technology when what they are selling is a fraud.

When I asked politely if their system has ever been tested Mr. Adams simply tells us to go get a lawyer, he is referring the matter for filing. I felt that it was not unreasonable to ask to know this but it really made him furious. Anyway I told him to tell it to our lawyer Mr. Ben Allison of Sutinfirm with whom I shall meet tomorrow. Tonight they said that they will issue a cease and desist order, which I believe means that we will be unable to sell our software anymore which will destroy our income stream and that will be it. I can't waste anymore time on this now. It is time for me to get back to work on things that matter for our users.

I have a docs appointment tomorrow at 8-10 local time. I had throat surgery recently so I really can't talk and frankly I find I tend to break into tears very frequently when I try to do so. But I want you all to know that I will stand firm until it is over. What would the soldiers who have used our software in combat think of me if I gave ground? Then bring it on.

I know it sounds bad for us right now, but remember that whatever happens to us no one can take away the honor and the privilege of working with NASA, the OSD, and all the other completely excellent people with whom we have worked.

Mike Abernathy
Rapid Imaging Software, Inc.

Attached are the other communications from them.

From: Robert Adams [redacted] (b)(6)
Sent: Monday, September 25, 2006 3:51 PM
To: 'Mike Abernathy'
Subject: RE: license

Mike,

Let me try and be clear, all such development at OTG on behalf and or/or by our licensee is covered by NDA's and thus our company can be sued should we violate such agreements. As to your company's infringement of our patents, since that was clearly not covered by a NDA with us; please provide said information in detail:

1. Other then those items listed at your website and NASA's, what other projects did you do that infringed on our invention? If so when, where, and how?
2. Who at NASA flight-tested your product that used our invention? Please provide us with the name of the Pilot in Command, the responsible Flight Test Engineer, the model and block number of the vehicle and GCS, and the range or location at which such testing might have taken place with NASA and others. Also, indicate the dates of such testing. If flight test reports are available, as well please provide them to us.

Mike, I have no time to play games with someone who clearly infringes and thinks nothing of respecting our IP.

I will forward said matter to our legal department for further research and filing in accordance with the Federal laws. Please have your legal IP counsel contact our attorneys.

Robert Adams

From: Mike Abernathy [redacted] (b)(6)
Sent: Monday, September 25, 2006 2:26 PM
To: 'Robert Adams'
Subject: RE: license

Robert,

You have offered to license your technology to our company. You have stated that this technology is useful for "see and avoid applications" for UAVs which is an interesting market arena. We are making a good faith effort to consider your offer. We must know whether this technology has been brought into existence and whether it was ever test flown as a matter of due diligence.

We are not asking these questions out of idle curiosity and we certainly not trying to be difficult – we need this information in order to know the market value of the technology to our users, and there are certain elements of the method that we have concerns about. A flight test report – even if the system was implemented on a model airplane – will almost certainly allay our concerns and we can get on with this. The fact of whether or not this technology has been tested does not require an NDA.

Robert, throughout our dealings I have been honest and responsive to all of your requests, perhaps at peril to our company. I now ask you to please reciprocate my efforts in a small way and provide the requested information so that we may consider your offer of license.

Mike Abernathy
Rapid Imaging Software, Inc.

From: Robert Adams [redacted] (b)(6)
Sent: Monday, September 25, 2006 2:49 PM
To: 'Mike Abernathy'
Subject: RE: license

Mike,

Neither the company nor I are in any way anxious in signing any more licensees's as we have many already, but as you know we must protect our patents in order to preserve said Intellectual Property.

As to your questions, they do not relate to a license and/or a licensee. Our Intellectual Property has been tested in court and is proven solid by far such standards the Federal Court including the Federal Appeals Court. In addition, as to matters of disclosure, all such development at OTG and by our licensee is covered by NDA's.

Should you wish to challenge such, then I advise you to seek proper legal counseling as we are not an attorney nor will ours advice you on such a matters.

Your company has clearly infringed and OTG must protect itself against such matters just as your company would do if in the same position.

Robert Adams

From: Mike Abernathy [redacted] (b)(6)
Sent: Monday, September 25, 2006 1:29 PM
To: 'Robert Adams'
Subject: license

Dear Robert,

Please tell the legal team thanks for getting back to us right away – we appreciate it.

00023

You have asked us to consider licensing and this we are now doing. In the interest of due diligence as a prospective licensor of your technology, we ask that you provide us with the following information about the subject invention:

3. Was this invention ever constructed? If so when, where, and how?
4. Was this invention ever flight tested? Please provide us with the name of the Pilot in Command, the responsible Flight Test Engineer, the model and block number of the vehicle and GCS, and the range or location at which such testing might have taken place. Also, indicate the dates of such testing. If flight test reports are available please provide them to us, as well.

I know that you are anxious for us to consider your license offer, please provide us with this information.

Mike Abernathy
Rapid Imaging Software, Inc.

00024

Real-Time 3-D Flight Guidance with Terrain for the X-38

Frank Delgado [a], Mike Abernathy [b], Janice White [b], and Bill Lowrey [b]

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NASA / Johnson Space Center,
Houston, TX 77058
fdelgado@ems.jsc.nasa.gov

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1318 Ridgecrest Place S.E.
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ABSTRACT

The NASA Johnson Space Center is developing a series of prototype flight test vehicles leading to a functional Crew Return Vehicle (CRV). The development of these prototype vehicles, designated as the X-38 program, will demonstrate which technologies are needed to build an inexpensive, safe, and reliable spacecraft that can rapidly return astronauts from onboard the International Space Station (ISS) to earth. These vehicles are being built using an incremental approach and where appropriate, are taking advantage of advanced technologies that may help improve safety, decrease development costs, reduce development time, as well as outperform traditional technologies.

This paper discusses the creation of real-time 3-D displays for flight guidance and situation awareness for the X-38 program. These displays feature the incorporation of real-time GPS position data, three-dimensional terrain models, heads-up display (HUD), and landing zone designations. The X-38 crew return vehicle is unique in several ways including that it does not afford the pilot a forward view through a wind screen, and utilizes a parafoil in the final flight phase. As a result, on-board displays to enhance situation awareness face challenges. While real-time flight visualization systems limited to running on high-end workstations have been created, only flight-rated Windows are available as platforms for the X-38 3-D displays. The system has been developed to meet this constraint, as well as those of cost, ease-of-use, reliability and extensibility. Because the X-38 is unpowered, and might be required to enter its landing phase from anywhere on orbit, the display must show, in real-time, and in 3 dimensions, the terrain, ideal and actual glide path, recommended landing areas, as well as typical heads-up information. Maps, such as aeronautical charts, and satellite imagery are optionally overlaid on the 3-D terrain model to provide additional situation awareness. We will present a component-based toolkit for building these displays for use with the Windows operating systems.

Keywords: Synthetic vision, simulation, flight visualization, flight guidance, human factors

1. Introduction

The X-38 program began in early 1995 to explore the feasibility of building a space station Crew Return Vehicle (CRV). The X-38 program is developing a series of test vehicles to demonstrate the low-cost technologies and methods required to develop a fully functional CRV that can rapidly return astronauts from onboard the International Space Station (ISS) to earth. The X-38 program uses a gradual buildup approach. Three atmospheric test vehicles and one space rated vehicle will be developed and tested during the X-38 program. The atmospheric test vehicles are known as vehicle 131 (V131), vehicle 132 (V132), and vehicle 133 (V133). The space-rated vehicle that will fly on the Shuttle as a payload bay experiment in November 2000 is known as vehicle 201 (V201).

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The X-38 employs a "lifting body" concept originally developed by the U.S. Air Force's X-24A project in the mid-1960s. The concept uses the aerodynamic shape of the vehicle itself to generate the lift that a normal aircraft gets from its wings. This gives the X-38 vehicle good reentry maneuverability capabilities. More important, as a lifting body, the X-38 has excellent cross-range characteristics. These cross-range characteristics assure multiple opportunities for a dry terrain landing within the 9-hour lifetime of the vehicle consumables. The ability to return to earth quickly is very important and is a major advantage that the X-38 CRV has over the Russian Soyuz capsule, which is also under consideration for possible use as a CRV. Unfortunately, the Soyuz has two major drawbacks. The foremost is its inability to accommodate crewmembers that vary greatly in size, and the second is its limited crew carrying capacity, its not capable of carrying more than 3 crewmembers at a time. These issues caused concerns because the ISS will house crewmembers that vary greatly in size (5^{th} percentile Asian female to 95^{th} percentile U.S. male). Additionally, there are plans to have up to 7 crewmembers on the ISS at any time. Because of these concerns, an investigation into the development of an alternate method of returning crewmembers to earth was launched. This effort became known as the X-38 program. The X-38/CRV is being designed to accommodate the necessary range of crewmember sizes and have the capability of carrying 7 crewmembers at any time

V131 and V132 have composite fiberglass bodies and have undergone extensive testing during captive carry tests and free flight tests. During a captive carry test, a vehicle is attached to the wing of a B-52 and flown at different velocities and altitudes to collect data (Figure 1). During a free flight test the vehicle is carried to an altitude between 20k and 50k feet, under the wing of the B-52, and released. The vehicle flies "free" for several seconds before a large parafoil is deployed and used to return the vehicle safely to the ground.

V131 has undergone 7 captive carry tests and 2 free flight tests. V132 has undergone 1 captive carry and 1 free flight test. V133 is an atmospheric test vehicle similar to V132 and is currently being built. V201 is being built in-house at the Johnson Space Center and will be the first space-rated X-38 test vehicle. It will be taken into space on the Space Shuttle in November of 2000. Once in space, it will be taken out of Shuttle payload bay by the Remote Manipulator System and released. The X-38 will then run through its automated check out procedures and begin the de-orbit sequence. The vehicle will then enter earth's atmosphere and at an altitude of about 30k feet a large steerable parafoil, with active guidance from an on-board GPS receiver, will deploy and safely return the vehicle to the ground.

Dryden Flight Research Center EC97 44163 1h Photographed 30 Jul 1997
Reminiscent of lifting body flights of yesteryear, NASA's X-38 flew captive-carry for the first time on July 30. The flight, during which the X-38 remained attached to Dryden's B-52 carrier aircraft, proved very successful, lasting two hours and reaching an altitude of 27,000 feet. (NASA Tony Landis)

Figure 1: V131 during captive carry test 1.

The current X-38 CRV mission requirements include returning up to 7 crewmembers from the ISS safely to earth, have the ability to insure a dry terrain landing, and have enough cross-range to insure three landing opportunities in nine hours. This would be done in the event that any of the following situations arise: an ISS catastrophe, an emergency medical evacuation, or the Shuttle is unavailable to re-supply the ISS. Because we must design to a worst case scenario, a medical emergency where crewmembers are unable to pilot the vehicle back to earth, a fully autonomous vehicle must be built.

The basic assumption that a pilot is not necessary to return the CRV to earth meant that a forward-looking window was not required on the CRV. Although full autonomy is necessary for the medical evacuation scenario, keeping crewmembers in-the-loop to take care of unforeseen situations whenever possible is also a must. Synthetic environment technology is ideal for augmenting a crewmembers situational awareness and helping them to reselect a landing site or to fly the vehicle during the parafoil phase, when necessary. Additional software is being developed that allows crewmembers the ability to power subsystems on/off and more fully interact with several X-38 systems. We have been using our synthetic environment system to monitor flights, and to analyze/playback data during our V131 and V132 testing. In this role it acts as a tele-presence tool. To this end the LandForm Real-time 3-D Terrain Modeler, a commercial off the shelf (COTS) software package is being used. This product was selected because it met the above requirements, is very easy to use, and offers substantial cost and time savings.

The X-38 uses a large parafoil for the final landing phase. This parafoil is the subject of a significant engineering effort and considerable effort has been spent testing the parafoil system. Testing is done using large instrumented pallets attached to the parafoil. The pallets are released from the back of a C-130 aircraft and data on the aerodynamics, deployment sequence, and overall performance are recorded and closely analyzed. Early testing has yielded an ample amount of data which has been used to successfully build a parafoil system that has safely returned the V131 vehicle back to the ground during both free flights. Additional testing is being conducted to fine-tune the parafoil performance with the use of a remotely piloted vehicle, known as the buckeye. A pilot on the ground will fly the buckeye using visual feedback from one or more onboard video cameras. It is desirable to augment the pilot's view of the world with our system acting as a three-dimensional heads up display (HUD). In this way, information about landing zones and obstacles obscured from the camera could still be visible in our displays. Such tele-operation tools can considerably reduce the risks of remotely operating aircraft.

Initial tests with the product were very successful, and as astronauts came in contact with the system being developed, it became apparent that it would also serve well as a space-crew-training tool, and could considerably improve pilot situational awareness as a ground-based or onboard avionics display. However, for it to be used in these particular situations, it will need to be embedded into other applications, and not operate as a stand-alone program. Therefore, it would need to be accessible as a toolkit, which NASA engineers could use to augment any avionics software systems.

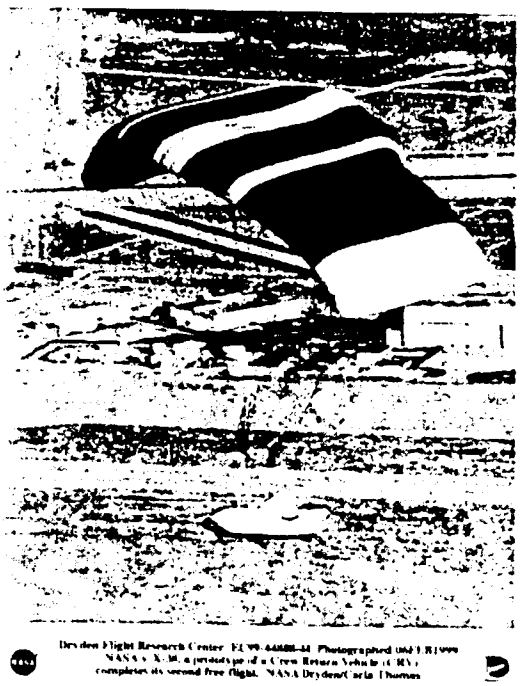


Figure 2: Parafoil deployed prior to landing.

2. Requirements

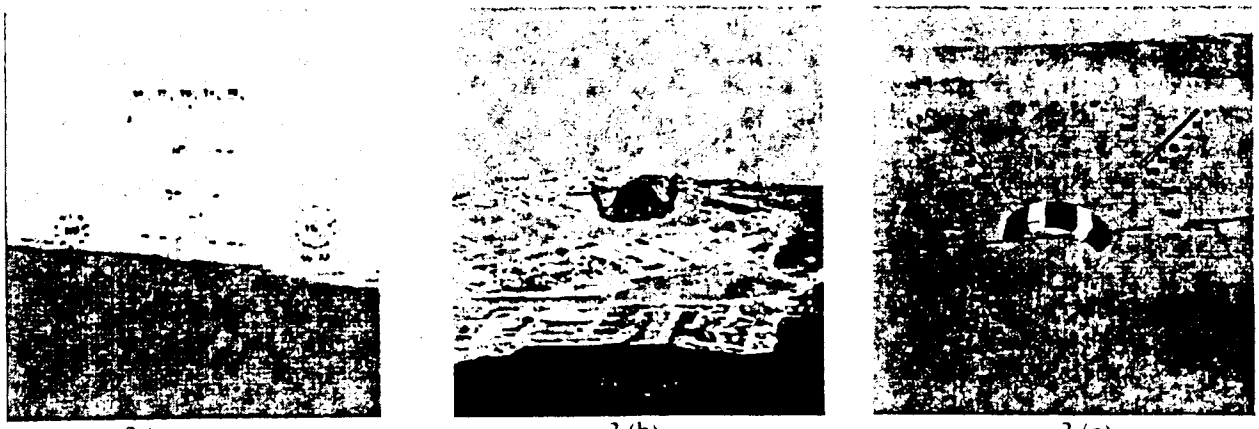
Fundamentally the system must provide a real-time three-dimensional display of the environment, incorporating diverse terrain, navigation, and aircraft data. This display should be a natural perspective from a viewpoint controlled to six degrees of freedom (6 DOF). In most cases degrees of freedom applied to the viewpoint include latitude, longitude, altitude, pitch, heading and roll, versus time. Typically such data is obtained from an Embedded GPS Inertial Navigation Systems on board the aircraft and either used on-board, transmitted and viewed live, or recorded and replayed as a flight track at a later time. The camera modeled by the software must be a perspective camera that can be placed at any point in our 3-D virtual environment, and rotated about 3 axes to any orientation to simulate any viewpoint in which a real camera might be found. This 3-D synthetic vision of the world must also incorporate diverse elements including:

- land surface shape (topography),
- textures or draped imagery including digital maps,
- satellite and aerial imagery,
- geo-stationary objects like landing zones and obstacles,
- man-made or other transient objects, including aircraft, (we use the name *entities* for such objects)
- heads-up displays which project important information about the situation.

Incorporating dynamic object entities into the scene is important for the X-38 so that the program could show the vehicle, the flight path (actual and ideal), as well as showing the parafoil and drogue shoot. The parafoil model is not only moving in real-time, but is changing shape as different control forces are applied. The ability to observe these effects in real-time is a requirement for flight testing, so entities must not only be controlled by 6 DOF, but it must be possible to incorporate a dynamically changing body shape model.

Simplicity of operation is a vitally important requirement for operation of a crew return vehicle. Most existing terrain software requires that expert users edit the terrain model for a given region of the world, and thus create the topography. The update rate of the 6 DOF viewpoint is up to 60 times per second, as is the update rate for entities moving in the virtual environment model for the virtual environment. Such a constraint is unacceptable for this application. As the X-38 might be compelled to begin its landing sequence from anywhere, it is not practical to have astronauts editing terrain models for a

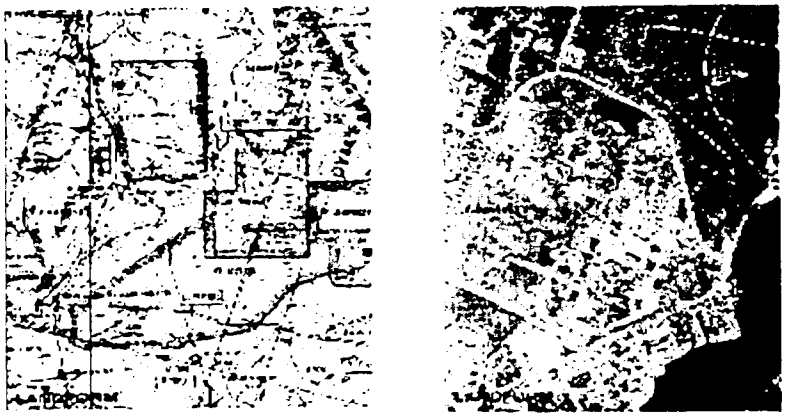
virtual planet. Fortunately, LandForm accepts most common forms of terrain models, such as DTED, DEM, DTM and will automatically generate a land surface model for a given region of interest. The region of interest can be automatically moved by the program, based on the view position. Landform can automatically load files needed to make the terrain models. As a result, operation of the software can be automated to a very large extent, while providing greatly enhanced situation awareness. Figure 3 and Figure 4 are typical situation awareness displays for the X-38.



3 (a) 3 (b) 3 (c)

Figure 3: These are typical out-the-window displays that have been prototyped for use on the X-38 program. In Figure 3(a) we have an out-the-window display that uses terrain elevation models and HUD symbology. In Figure 3(b) we have an out-the-window display created using high-resolution imagery data, a vehicle model, and HUD symbology. In Figure 3(c) we have an out-the-window display created using terrain elevation models, vehicle and parafoil models, and HUD symbology.

We are developing a "mobile cockpit" for use as a rapid development testbed for the synthetic environment system we are developing. The "mobile cockpit" is a 15 passenger van that has been outfitted with tinted windows to decrease light, a Global Positioning System, display computers, adjustable crew displays, hand controllers, a remote-controlled camera, an avionics rack for flight computers, and wireless headsets that allow the driver of the van to communicate with the individual handling the avionics systems and with crew members who lay supine in the back of the van. The result is a generic platform that may be used as a remote cockpit, as a rapid prototyping test bed, as a motion based simulator and as a vehicle for real-time flight following. Figure 5 shows the mobile cockpit avionics rack and its associated hardware components. Figure 6 shows the prototype mobile cockpit seats and display computers. The software being developed will be target to run on any Windows computer platform. The software should make use of 3-D accelerator hardware if available, but should not require it.



4(a) 4(b)

Figure 4: These are typical birds-eye-view displays. 4(a) is birds-eye-view display created using an aeronautical chart. 4(b) is birds-eye-view displays created using a high-resolution satellite image.

00028

Figure 5: Computers and GPS equipment used in the mobile cockpit.

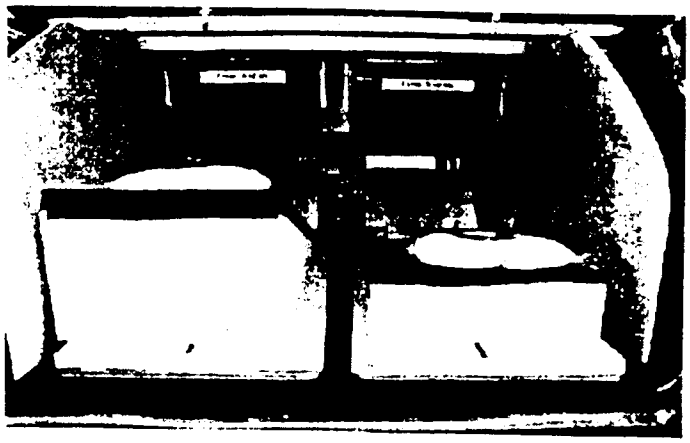


Figure 6: Mobile cockpit seats with display consoles.

3. Architecture

Our idea in approaching this work was that it should be possible to create a package or library that would encapsulate the easy-to-use LandForm Real-Time 3-D Terrain technology in programmer-accessible modules. If successful in our object-oriented design for this system, the package would expose only those methods or elements of importance to the user, and would hide those things which they did not need to worry about. This idea of *abstraction* is fundamental to maintaining interface simplicity.

The functional architecture, figure 7, was designed to achieve an optimal balance between power and simplicity. To this end the most obvious component encapsulates the LandForm 3-D Terrain display, herein called the LandView3D. This component uses the land surface model produced by the LandForm Server, and the viewpoint to render the 3D perspective. Camera model elements, such as field of view, are intrinsic to the LandView3D component. The LandForm Server is responsible to manage the terrain and overlay image data, flight track data, and time/event management provides this information to the views. A third component, the MapView provides a 2D parallel to the LandView3D. The MapView can be used for navigation, and to display the vehicle position in a traditional two-dimensional, North-up display, of predefined scale.

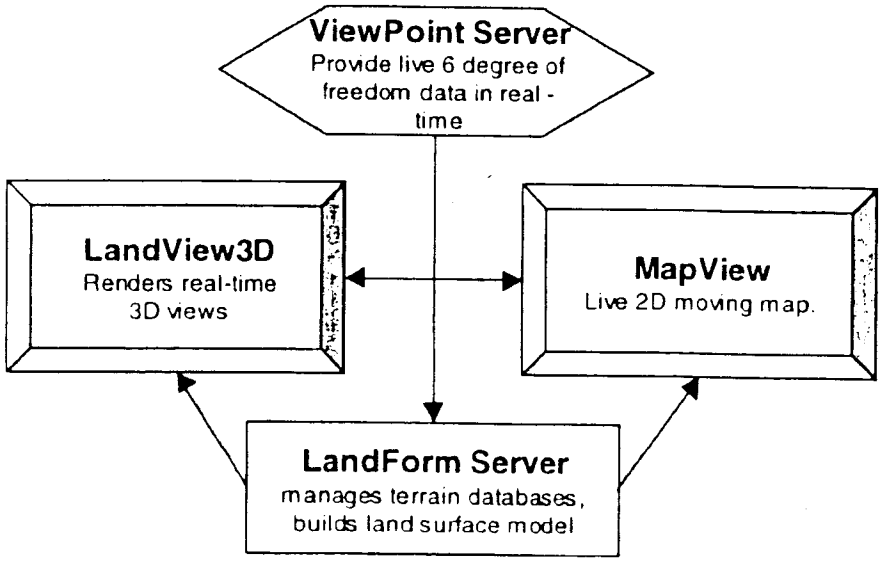


Figure 7: Basic architecture

00029

While the viewpoint server provides data for the camera and vehicle position, it can also be used to provide data on other objects (like aircraft) in the scene.

One of the key considerations for this system was the selection of a graphical API (Application Programming Interface) which would provide near-real-time 3-D rendering of the scene (including simulated land surface and vehicles). The OpenGL API was selected for this purpose, over alternatives like DirectX, for several reasons. First, having tested other APIs, OpenGL has the most reliable performance on a variety of graphics adapters and platforms. Second, it provided ample rendering speed, provided reasonable care was taken in programming the OCX controls and application. And third, it is distributed as a standard part of the Windows operating system and thus should be well supported over a period of years by the operating system vendor.

4. Implementation

The first step was to determine whether the ActiveX API would allow us to create an OpenGL display within a control, and whether such an implementation would be as fast, in terms of rendering speed, as LandForm. If so, then ActiveX would appear to be the logical choice for implementation. To test this idea, we created an ActiveX control that contains the LandForm 3D scene renderer, and the LandForm Server component described above. (This is the LandView3D control we discussed earlier).

We tested the rendering speed and found it was comparable to the stand-alone LandForm program. By achieving 20 frames per second on a modestly equipped machine, the LandView3D control provides more than adequate rendering performance. This key data point cleared the way for full implementation using the ActiveX paradigm. ActiveX is a form of the Component Object Module (COM) architecture, which offers excellent interoperability of libraries between programming languages and operating environments.

In parallel with the LandView3D control, we began the development of a 2-D map display that would function similarly to the right-hand map view in LandForm. This was relatively straightforward, and was also implemented using the Active X paradigm. One part of the development that was not trivial was the creation of a transparent control to be overlaid on the map so that other data could be displayed, such as a compass, or windsock. This required some research and experimentation before a truly successful method was developed.

The LandForm Server, which contains the core of LandForm's capability had to be implemented in a programmably accessible form. While it would be simplest to create an object as a dynamic link library, we felt interoperability was better served by creating a COM version of this object. The logical choice here was as an ActiveX. Finally, a sample application was created which combined these basic capabilities. To this end we used Microsoft Visual C++ to develop a dialog based Windows application containing the new sample tools and to serve as a template for developers to model their own applications upon. Figure 8 shows a sample application.

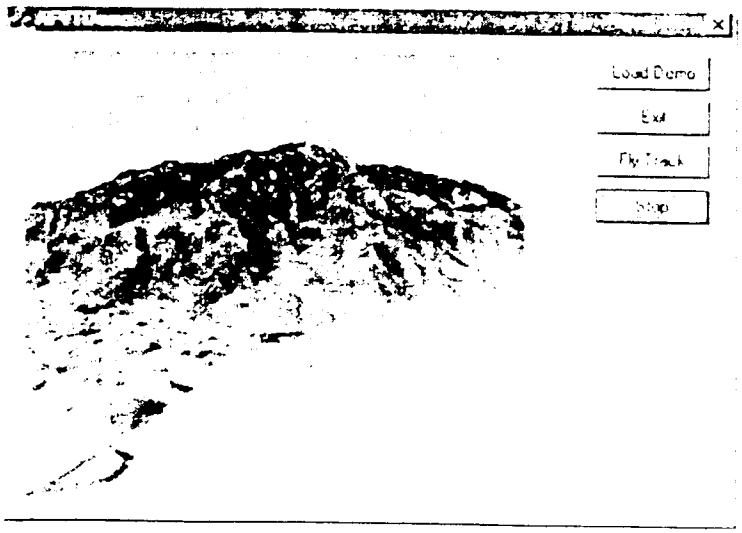


Figure 8: Sample application with LandForm 3D view control.

5. Application: A 3-D Heads Up Display

One powerful application of LandForm is to combine simulated LandForm 3-D scenery with live video, to create an enhanced situational awareness display. For pilots of both full scale and remotely piloted aircraft, such a display will provide a view of the surroundings which includes live video, and enhanced with outlines of terrain,

00030

other aircraft, landing zones, targets or other objects of importance. Furthermore because the terrain portion of the display is generated from digital data, it is not subject to the limitations of visibility inherent to video. While darkness, terrain occlusion, smoke, fog, and haze all impact the video, the overlays will be unobstructed. Figure 9 expresses the fundamental concept. A computer running the LandForm ActiveX control utilizing the current vehicle position models the real video camera field of view and orientation.

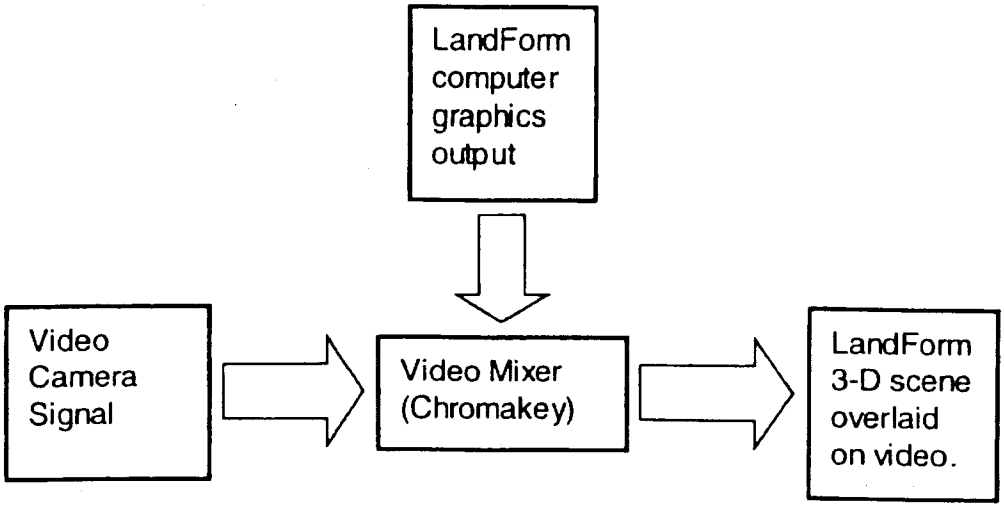


Figure 9: Enhanced situational awareness is achieved with the combination of LandForm 3-D scenery and live video.

The real camera is mounted at a known orientation on the vehicle, thus the video from the camera and the LandForm simulated scene constitute parallel views of the world – one based upon photons at the sensor, the other based upon the LandForm database. LandForm is then configured to render wire-frame rather than solid surfaces, which may then be overlaid upon the real-time video. So if a mountain appears in the LandForm terrain database, in front of the camera it should be rendered in the same place and orientation in the real video. Indeed it should overlay as precisely upon the live mountain scene as the data permit. Likewise if a landing zone is indicated in the scene it should appear at just the same location as in the video.

Figures 10 and 11 show a parallel view of the world from a video camera's perspective and LandForm's simulated scene respectively. Figure 10 is a video digital image of the Mt. Jacinto area in California. Figure 11 shows the same area rendered by LandForm based on the field of view of the camera and camera viewpoint.

Figure 10: Digital image of Mt. Jacinto, Ca.

Figure 11: LandForm simulation of the terrain from the camera and viewpoint for the photo above.

6. Results

We believe we have demonstrated the utility of a general purpose 3D terrain-enabled software display toolkit for flight guidance applications, both for operation and teleoperation of aircraft and spacecraft. It is clear that even PC computers may have adequate performance to provide a smooth real-time 3D display of the terrain and aircraft in flight. One of the most important uses of this technology will be as a 3D heads up display (HUD), and in the case of the X-38 program to improve a pilot's situation awareness.

Before a tool of this type can be used in operational spacecraft and aircraft, testing must be performed to validate the limits of performance of the software. We think that this system offers a substantial step forward in flight guidance via a virtual environment. We are also interested in the opinions of others. Free downloadable sample versions of the software can be obtained from www.landform.com/AFVT.htm on the World Wide Web. The LandForm plug-ins developed for the X-38 program can be acquired by contacting fdelgado@ems.jsc.nasa.gov.

7. Acknowledgements

This work was sponsored by NASA Contract NAS9-99032 and by Rapid Imaging Software, Inc. Assistance and technical insight into COM, Active X, and Windows programming was provided by Linda Moreland (NASA/JSC) and Steven Robinson (Panther Software), thank you both. Limited programming support was provided by Nicolas Graf (NASA/JSC), Antoine Dumurgier (European Space Agency), Nicolas Pen (European Space Agency), and Fabrice Cinquetti (European Space Agency) during the development of the HUD symbology.

8. References:

1. F.J. Delgado, "Accurate Determination of Flight Control Airdata Parameters Using Artificial Neural Networks and the X-38 Flush Airdata System" *Proceedings of the Texas Systems Day, 1997.*
2. J. F. Muratore and C. S. Iacomini, "Parafoil Flight Test of X-38 Prototype Crew Return Vehicle Yields Improved Instrumentation and Techniques", *Journal of International Flight Test and Evaluation Association*, pp 19-24, June/July 1998, Volume 19, Number 2.
3. M. F. Abernathy and S. Shaw, "Integrating Geographic Information in VRML", *Proceedings of the Third Symposium on Virtual Reality Modeling Language*, VRML 98.

00032

[redacted]

From: Kennedy, Alan J. (HQ-MC000)
Sent: Wednesday, September 27, 2006 2:11 PM
To: Mike Abernathy
Cc: Fein, Edward K. (JSC-AL); Borda, Gary G. (HQ-MC000)
Subject: RE: help

Mike,

As I said in my voice mail and in our phone conversation, we can help with any products that you sell to NASA such as software for the X-38 aircraft. Tell Optima that I said to contact me regarding any cease and desist threats pertaining your NASA business. However, we cannot interfere in your non-Government (NASA) commercial activities or sales.

Call me if you have any questions regarding your NASA business sales.

Thanks,

Alan

From: Mike Abernathy [redacted] (b)(6)
Sent: Wednesday, September 27, 2006 9:13 AM
To: Kennedy, Alan J. (HQ-MC000); FEIN, EDWARD K. (JSC-HA) (NASA); [redacted]
Subject: help

Alan and Ed,

We have received a cease and desist from Optima. I am afraid that they will file a suit against us, and from what Ben says we would certainly go broke defending it. Like most small companies we have little cash on hand and we are going to need to put up $10k just for what is happening now. Will you please help us? Otherwise Ben says we will need to start negotiations with Optima. Please talk to us.

Best regards,

Mike Abernathy
Rapid Imaging Software, Inc.
[redacted] (b)(6)
www.landform.com

00033

Date: Thu, 02 Nov 2006 13:21:53 -0800
To: Chauncey C Williams <[redacted]
Conversation: [redacted]
Subject: FW: [redacted]

(b)(6)

Hi Chauncey,

Sorry for the late action on this one. I have not heard of this gentleman before; however, the "Francisco Delgado" listed at the bottom of the e-mail is a JSC employee.

May I ask for your help on this?
Thanks!
yk

------ Forwarded Message
From: Robert Adams <[redacted]
Organization: Optima Technology Group
Date: Fri, 29 Sep 2006 11:58:36 -0700
To: <yvonne.kellogg@dfrc.nasa.gov>
Subject: [redacted]

(b)(6)

(b)(6)

RE:

Optima Pilot aid using a synthetic environment License Agreement U.S. Patent Nos. 5,566,073

Optima Method and apparatus for remotely piloting an aircraft License Agreement U.S. Patent Nos. 5,904,724

Yvonne,

My name is Dr. Robert Adams. I am the CEO and owner of Optima Technology Group which owns a United States patent portfolio that includes the above identified two patents above(1.1) ("the Patents"), OTG the entity to which our chief scientist Jed Margolin has assigned the Patents. As I am sure you are aware of, the Patents protect a number of features that are implemented in products capable of flying any and all UAV's (1.3) remotely piloting said UAV and/or using Synthetic Vision and/or using a synthetic environment.

Based on the current conversations with many of your contractors who have now licensed our technology, they have informed us that NASA is indeed aware of our patents for some time. To support said information we also now have the web log files of the last few years that we now see detailed visits by NASA that report in detail both as to what was the NASA server's name used and many more details that I am sure would be of interest in discovery

00036

Yvonne, I see that NASA is busy making sure that technology they invent is patented and then licensed in order to bring in revenue as noted by the link about your group: http://www.dfrc.nasa.gov/Newsroom/X-Press/1999/June11/techcom.html

So like your group, my company is in the same business and that is in licensing our IP technology to companies like yours that already use and/or infringe on said technology. We do prefer to have a friendly discussion that leads to a productive and proper license of our technology by NASA and other vendors who may use it with your company. Thus, we would like to discuss the two related patents that belong to OTG and discuss a license and/or a technology transfer to NASA so that your group and NASA can continue the work unencumbered.

Let's, chat and work out the details of a license agreement,

Respectfully, Dr. R.M. Adams

P.s. Please say hello to Francisco Delgado for me and thank him for all his help in this matter.

Dr. Robert Adams – CEO
Optima Technology Group
[redacted] (b)(6)

Simply Smarter, Encryption & Aerospace Solutions since 1990!

------ End of Forwarded Message

------ End of Forwarded Message

00037

[redacted]

From: McNutt, Jan (HQ-MC000)
Sent: Wednesday, August 06, 2008 9:23 AM
To: Robert Adams-OTG
Subject: Optima Letter
Attachments: Optima Letter 20080801.pdf

Dr. Adams,

Please see attached.

Jan S. McNutt
Attorney-Advisor (Commercial)
Office of the General Counsel
NASA Headquarters
[redacted] (b)(6)

From: Robert Adams-OTG [redacted] (b)(6)
Sent: Tuesday, August 05, 2008 3:06 PM
To: McNutt, Jan (HQ-MC000)
Subject: [redacted]

(b)(4)

From: Robert Adams-OTG [redacted] (b)(6)
Sent: Monday, August 04, 2008 6:21 PM
To: [redacted] (b)(6)
Cc: 'M. Lawrence Oliverio'
Subject: [redacted]

(b)(4)

[redacted]

00042

Jan,

Can you please forward me a copy of the letter that you stated was sent out last Friday? Considering that we have already started licensing (see attached non-excusive) said technology and are actively conducting talks with other infringers, it's in our best interest to enforce said IP. We also have recently starting suing infringers in Federal court and one is settling now as we speak. We may consider a Technology Transfer depending on the interest and offer.

Our goal with NASA is to resolve this infringement matter quickly and peacefully verse wasting any more time on the matter.

As to statute of limitations waiver, at this time we would not be agreeable but we may consider a tolling agreement.

Thank you,

Dr. Robert Adams – CEO
Optima Technology Group
[redacted] (b)(6)

00043

National Aeronautics and Space Administration

Headquarters
Washington, DC 20546-0001

August 1, 2008

Reply to Attn of: Office of the General Counsel

Dr. Robert Adams, CEO
Optima Technology Group
[redacted] (b)(6)

Re: U.S. Patents Nos. 5,904,724 and 5,566,073

Dear Dr. Adams:

We are in receipt of your letter dated July 14, 2008 informing our office of an assignment of two patents by the inventor Mr. Jed Margolin. While Mr. Margolin's infringement claims are currently under investigation, we do not have any information from Mr. Margolin confirming the alleged assignment of his patents to your firm. Although your letter included copies of two licensing agreements, there is likewise no evidence of an assignment of the said inventions in the communication you sent to us. Until we receive appropriate evidence of such an assignment, we are not able to respond to your request for a license from our Agency.

Please refer any future correspondence in this matter to the undersigned, Mr. Jan S. McNutt, [redacted] (b)(6)

Sincerely,

Jan S. McNutt
Attorney-Advisor

[redacted]

From: McNutt, Jan (HQ-MC000)
Sent: Wednesday, August 06, 2008 9:44 AM
To: Jed Margolin
Subject: RE: NASA Case I-222 (Margolin Letter)
Attachments: Margolin Letter 20080805.pdf

Dear Mr. Margolin,

Please see the attached. Hard copy to follow.

Jan S. McNutt
Attorney-Advisor (Commercial)
Office of the General Counsel
NASA Headquarters
[redacted]

(b)(6)

-----Original Message-----
From: Jed Margolin [mailto:[redacted]]
Sent: Tuesday, August 05, 2008 1:56 PM
To: McNutt, Jan (HQ-MC000)
Subject: NASA Case I-222

(b)(6)

Dear Mr. McNutt.

I have attached the documents we discussed.

Regards,

Jed Margolin

00015

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

August 5, 2008

Reply to Attn of: Office of the General Counsel

Mr. Jed Margolin
[redacted] (b)(6)

Re: Administrative Claim of Jed Margolin for Infringement of U.S. Patent Nos. 5,566,073 and 5,904,724; NASA Case No. I-222.

Dear Mr. Margolin,

We are in receipt of the Freedom of Information Act Request (FOIA) conveyed to us by email dated June 30, 2008 in which you request copies of all documentation relating to your administrative claim of infringement of U.S. Patent Nos. 5,566,073 and 5,904,724.

We regret the delay in processing your claim and assure you that we are now undertaking measures to provide a resolution of your claim as soon as possible. Unfortunately. Mr. Alan Kennedy retired from NASA earlier this year and the action on your claim was not conveyed to management in a timely manner. In addition the local attorney responsible for review of your claim also departed from NASA. We are now cognizant of the importance of proceeding with a review of the claim and will contact you when we have reached a decision.

As to your FOIA request, as the investigation of your claim is ongoing, we kindly request that you allow us a 90 day extension to answer this request. Within that time period we should be able to obtain a better picture of our position vis-à-vis your claim and the request for documents may no longer be required.

We should inform you that we have received a separate communication from a company Optima Technology Group, claiming to have been assigned both of the patents in question. You informed me telephonically that this is the case; however, we have no record of any assignment of your patents to this firm and will need confirmation through appropriate attested documents delivered to the agency in order to recognize any claim of ownership by a party other than the inventor.

Thank you for your patience in this matter. Please contact the undersigned at [redacted] or email [redacted] if you have any additional questions or comments.
(b)(6) (b)(6)

Sincerely,

Jan S. McNutt
Attorney-Advisor

[redacted]

From: McNutt, Jan (HQ-MC000)
Sent: Wednesday, August 06, 2008 11:54 AM
To: Borda, Gary G. (HQ-MC000); Rotella, Robert F. (HQ-MA000)
Subject: Margolin-Optima Assignment
Attachments: jm_assign.pdf

[redacted] (b)(5)

[redacted]

From: Robert Adams-OTG [redacted] (b)(6)
Sent: Wednesday, August 06, 2008 11:17 AM
To: McNutt, Jan (HQ-MC000)
Subject: [redacted]

[redacted] (b)(4)

Jan,

Based on the conversation with you and Jed, I was told by Jed that he walked you through the Patent & Trade Mark office's website and you had access to see the assignment.

If that was not acceptable, then please see the attachment concerning the fully executed assignment.

As time is short due to the delays in reviewing the matter on your end. We are acceptable to not clogging up the court system as we currently have one active case before the Federal court on 073" and would prefer licensing NASA and/or settling with you.

I look forward to hearing from you shortly.

Thank you,

Dr. Adams

From: McNutt, Jan (HQ-MC000) [redacted] (b)(6)
Sent: Wednesday, August 06, 2008 6:23 AM
To: Robert Adams-OTG
Subject: [redacted]

(b)(4)

Dr. Adams,

Please see attached.

Jan S. McNutt
Attorney-Advisor (Commercial)
Office of the General Counsel

00017

[redacted] (b)(6)

From: Robert Adams-OTG [redacted] (b)(6)
Sent: Tuesday, August 05, 2008 3:06 PM
To: McNutt, Jan (HQ-MC000)
Subject: [redacted]

From: Robert Adams-OTG [redacted] (b)(6)
Sent: Monday, August 04, 2008 6:21 PM
To: [redacted] (b)(6)
Cc: 'M. Lawrence Oliverio'
Subject: [redacted]

(b)(4)

[redacted]

Jan,

Can you please forward me a copy of the letter that you stated was sent out last Friday? Considering that we have already started licensing (see attached non-excusive) said technology and are actively conducting talks with other infringers, it's in our best interest to enforce said IP. We also have recently starting suing infringers in Federal court and one is settling now as we speak. We may consider a Technology Transfer depending on the interest and offer.

Our goal with NASA is to resolve this infringement matter quickly and peacefully verse wasting any more time on the matter.

As to statute of limitations waiver, at this time we would not be agreeable but we may consider a tolling agreement.

Thank you,

Dr. Robert Adams – CEO
Optima Technology Group
[redacted] (b)(6)

00048

PATENT ASSIGNMENT

Whereas I, the undersigned, Jed Margolin having an address in Virginia City Highlands, Nevada have made certain inventions or discoveries (or both) set forth in the following-identified Letters Patent of the United States of America, and

Whereas Optima Technology Group Inc, a Delaware corporation having a place of business at 1981 EMPIRE Road, Reno, NV 89521-7430, which, together with its successors and assigns, is hereinafter called "Assignee," is desirous of acquiring the title, rights, benefits and privileges hereinafter recited;

Now, therefore, for valuable consideration furnished by Assignee to me, receipt and sufficiency of which is hereby acknowledged, I do hereby, without reservation:

1. Assign, transfer and convey to Assignee the entire right, title and interest in and to the following Letters Patent and to all inventions disclosed and/or claimed in U.S. Patent No. 5,566,073 issued October 15, 1996 for a Pilot Aid Using A Synthetic Environment and U.S. Patent No. 5,904,724 issued May 18, 1999 for Method and Apparatus For Remotely Piloting An Aircraft, and to any and all other applications for Letters Patent on said inventions and discoveries in whatsoever countries worldwide, including all divisional, renewal, substitute, continuation, continuing, Convention and non-Convention applications based in whole or in part upon said inventions or discoveries, or upon said Letters Patent, and any and all reissues, reexaminations, and extensions of said Letters Patent or upon said applications, reissues, reexaminations, and extensions and every priority right that is or may be predicated upon or arise from said inventions, said discoveries and/or said Letters Patent.

2. Authorize and request the Commissioner of Patents and Trademarks of the United States of America and the empowered officials of all other governments to issue, transfer and record all said Letters Patent to and in the name of Assignee, as assignee of the entire right, title and interest therein or otherwise as Assignee may direct.

3. Bind my heirs, legal representatives and assigns, as well as myself, to do, upon Assignee's request and at Assignee's expense, but without additional consideration to me or them, all acts reasonably serving to assure that the said inventions and discoveries, the said Letters Patent and patent applications shall be held and enjoyed by Assignee as fully and entirely as the same could have been held and enjoyed by my heirs, legal representatives and assigns if this assignment had not been made.

In testimony of which I have executed this Assignment of Patent Application on the date indicated next to my name.

Jed Margolin Date: 7-20-2004

Jed Margolin

[redacted]

From: McNutt, Jan (HQ-MC000)
Sent: Wednesday, August 06, 2008 2:36 PM
To: Fein, Edward K. (JSC-AL)
Cc: Borda, Gary G. (HQ-MC000); Rotella, Robert F. (HQ-MA000)
Subject: Patent Infringement claim from Jed Margolin; NASA Case No. I-222

[redacted] (b)(5)

[redacted] Margolin FOIA.pdf Letter from Optima 20080714.pd...

[redacted]

Jan S. McNutt
Attorney-Advisor (Commercial)
Office of the General Counsel
NASA Headquarters
[redacted] (b)(6)

00057

OPTIMA
TECHNOLOGY GROUP

Main Office
Finance & Operation
(b)(6) [redacted]

Monday, July 14, 2008

Mr. Alan J. Kennedy
Director, Infringement Division
Office of the Associate General Counsel
Office of the Aeronautics and Space Administration
Washington, D.C 20546-0001
Attn.: GP 02-37016

RE: Case number I-222

Sir,

I have read all of the correspondence dating back to May 14, 2003 between NASA and Jed Margolin the inventor of U.S Patent 5,904,724 **Method and apparatus for remotely piloting an aircraft that NASA** As you are well aware, this invention was infringed (literal infringement) by NASA and others at their direction

My company has been assigned this patent as well as U.S. Patent 5,566,073 **Pilot Aid Using A Synthetic Environment** and we have since licensed L3 and Honeywell (please see attached copy of Honeywell and L3/Genève Aerospace agreement(s)

Your office has had these past 5 years and 7 months to offer up any prior art and has failed to do so in order to invalidate '724 and/or prove non-infringement. Clearly your office has failed. with that said you need now to pay for a license like the others for the use of our technology that you used and may still be using at NASA

We would welcome the opportunity to further discuss the matter directly as to your proper license if need be and/or through our Intellectually Property attorney Larry Oliverio who can be reached at [redacted] (b)(6)

Respectfully,

Dr Robert Adams – U.S. Navy Retired
CEO, Optima Technology Group

00059

Freedom of Information Act (FOIA) Office

Kellie N. Robinson, HQ FOIA Officer: (202) 358-2265
LaShonda G. Goodwyn, FOIA Specialist: (202) 358-0845
Mary F. Bell, FOIA Specialist: (202) 358-1708

FOIA NO. 10-F-2008-270

Hand-Carry Action Response to FOIA Office - Room 5K35

Action Assigned to: Code(s) See Below **Date:** _____ ***SUSPENSE DATE:** 6/17/2008

To Legal (legal review): _____

FOIA Request from: Jed Margolin **Date Request Rec'd:** 6/30/2008

COMMENTS: Office of General Counsel

PLEASE COMPLETE BELOW:

Action Office: **Code:** _____ **Attorney:**

Name & Grade: _____ _____

SEARCH TIME: _____ _____
(Qtr. Hrs.)

☐ **Recommend action be transferred to**

☐ **Additional records located at the National Records Center will be retrieved by this office and copies will be provided to the FOIA Office for review. (Contact the FOIA Office if records are determined to be voluminous.)**

☐ **Estimated volume of additional records:** _____ **(No. of Boxes)**

☐ **Estimated additional time needed to retrieve records:** _____

☐ **A search was conducted and no responsive records were located.**

☐ **Recommend action be transferred to** _____

_____ _____ _____ _____

SIGNATURE OF INDIVIDUAL CERTIFYING ABOVE **GRADE** **CODE** **DATE**

** The suspense date is assigned to allow for adequate review and processing time by the FOIA Office and the Legal Office to ensure issuance of a response in compliance within the 20 working days as required by law. All records provided by the action office are reviewed and release determination is based on NASA FOIA Regulations as published in the Federal Register under Title 14, Chapter V, Part 1206 (14CFR Part 1206)*

Robinson, Kellie N. (HQ-NB000)

From: McConnell, Stephen (HQ-NB000)
Sent: Monday, June 30, 2008 8:13 AM
To: Robinson, Kellie N. (HQ-NB000)
Subject: Fw: FOIA Request

Attachments: jm_nasa.pdf

jm_nasa.pdf (106 KB)

----- Original Message -----
From: Jed Margolin [redacted] (b)(6)
To: nasafoia@nasa.gov <nasafoia@nasa.gov>
Sent: Sat Jun 28 21:05:56 2008
Subject: FOIA Request

This request is made pursuant to the Freedom of Information Act.

I would like all documents related to the Administrative Claim of Jed Margolin for Infringement of U.S. Patent Nos. 5,566,073 and 5,904,724; NASA Case No. I-222.

I am attaching a letter dated June 11, 2003 from Alan Kennedy, Director, Infringement Division, Office of the Associate General Counsel as file jm_nasa.pdf. I provided the information requested, it was received by Mr. Kennedy, and thereafter Mr. Kennedy refused to respond to my attempts to find out the results of the investigation.

I believe NASA has had enough time to have completed its investigation by now.

Jed Margolin
[redacted] (b)(6)
www.jmargolin.com <http://www.jmargolin.com>

08-270

00061

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

June 11, 2003

Reply to Attn of: GP (02-37016)

Mr. Jed Margolin
[redacted] (b)(6)

Re: Administrative Claim of Jed Margolin for Infringement of
U.S. Patent Nos. 5,566,073 and 5,904,724; NASA Case No. I-222

Dear Mr. Margolin:

Thank you for your letter dated June 7, 2003 regarding possible unauthorized uses by NASA of inventions protected by U.S. Patent Nos. 5,566,073 and 5,904,724. You have identified possible unauthorized uses in the X-38 project and other projects involving synthetic vision technology. NASA considers this matter to be an administrative claim for patent infringement, and has assigned the claim NASA Case No. I-222. An investigation will now be conducted to identify any unauthorized uses of the inventions claimed in the subject patents. In order to proceed further with this investigation, we need you to provide us with the following information:

(1) The identification of all claims of the patent(s) alleged to be infringed.

(2) The identification of all procurements known to the claimant or patent owner 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 articles or processes, 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) The names and addresses of all past and present licenses under the patent(s), and copies of all license agreements and releases involving the patent.

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

08-270

00062

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 the 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 to 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.

If you have any questions, please feel free to contact me on [redacted] b(6)

Cordially,

Alan J. Kennedy
Director, Infringement Division
Office of the Associate General Counsel
(Intellectual Property)

[redacted]

From: Fein, Edward K. (JSC-AL)
Sent: Wednesday, August 06, 2008 3:29 PM
To: McNutt, Jan (HQ-MC000)
Cc: Borda, Gary G. (HQ-MC000); Rotella, Robert F. (HQ-MA000)
Subject: RE: Patent Infringement claim from Jed Margolin; NASA Case No. I-222

[redacted]

(b)(5)

RE: Read: Let us chat on about SCOUT, SC3D, the X-38 program and RIS; noted below are our patents that cover said technology that RIS and your groups are using.

From: Mike Abernathy [redacted] (b)(6)
To: 'Delgado, Francisco J. (JSC-ER2)' [redacted], 'Fein, Edward K. (JSC-AL)' [redacted], 'Kennedy, Alan J. (HQ-MC000)' [redacted]
CC: 'Fredrickson, Steven E. (JSC-ER)' [redacted]
Date: Sep 26 2006 12:13pm

(b)(6) (b)(6)

Thank you very much. It means very much to Carolyn and I right now.

Mike Abernathy

Rapid Imaging Software, Inc.

From: Delgado, Francisco J. (JSC-ER2) [redacted] (b)(6)
Sent: Monday, September 25, 2006 9:42 PM
To: Mike Abernathy; Fein, Edward K. (JSC-AL); Kennedy, Alan J. (HQ-MC000); [redacted]
Cc: Delgado, Francisco J. (JSC-ER2); Fredrickson, Steven E. (JSC-ER)
Subject: FW: Read: Let us chat on about SCOUT, SC3D, the X-38 program and RIS; noted below are our patents that cover said technology that RIS and your groups are using.

See email from "Mr. Adams" below.

This is getting more ridiculous by the minute. I have resisted replying in any form as suggested by JSC council. However, this matter has been left open for quite some time and something needs to be done NOW. It has come to my attention that Mr. Adams and company have issued a letter that prohibits RIS from selling any of their software until this issue is resolved. We have had a very "intellectually" fruitful relationship with RIS for almost a decade and would like to

continue this relationship for many years to come. Some of the technology concepts in question were co-developed by RIS and I during many "brainstorming sessions" on how to provide optimal situation awareness to various users.

The folks pressing forward with this claim do not have solid ground to stand on (IMHO). Based on the previous research performed, I do not see how their patent claims are valid and I would like to request that NASA's council take this matter seriously and get the patents invalidated (as it should have been done when this first showed up a couple of years ago). This is not only the right legal thing to do, but also the right moral thing to do. If we allow an individual to continue to harass small companies and stand-by with little/no action, then we are no better than the company doing the harassing. As a government organization, we need to keep the public faith and trust and again, "do the right thing." I realize that patience is important in legal matter, but believe that the time for sitting idle and hoping that this matter goes away is way past due and that something needs to be done ASAP. Putting companies that NASA relies on to help move technology forward out of business with a barrage of unwarranted litigation does not seem like it is in NASA's (or our taxpayers) best interest.

Please let me know what I need to do on my end to help move this along.

BTW: If we do not deal with issue immediately it will only get worse for NASA. I know of several Projects within JSC, JPL, and Langley that use independently developed technology (i.e. technology that does not use what RIS and I came up with) that I am sure Mr. Adams and company would claim infringes on their "Patents." We seem to be on his radar at the moment because we do what government organizations are encouraged to do ("Publish their work").

Thank You,

Frank Delgado

(b)(6) From: Robert Adams [mailto[redacted]
Sent: Mon 9/25/2006 5:58 PM
To: Delgado, Francisco J. (JSC-ER2)
Subject: RE: Read: Let us chat on about SCOUT, SC3D, the X-38 program and RIS; noted below are our patents that cover said technology that RIS and your groups are using.

Sir,

Since you have clearly refused to cooperate, please provide us your department's heads information and said contact information including a contact in your IP litigation department. We are aware that you received your read receipt of our email sent to you regarding:

Let us chat on about SCOUT, SC3D, the X-38 program, and RIS; noted below are our patents that cover said technology that RIS and your groups are using.

United States Patent 5,566,073 Margolin October 15, 1996 Pilot aid using a synthetic environment

United States Patent 5,904,724 Margolin May 18, 1999, Method and apparatus for remotely piloting an aircraft

We simple have one goal in mind and that is have a chat regarding the technology and that RIS and NASA take a license of said IP technology.

Thank you

From: Delgado, Francisco J. (JSC-ER2) [redacted] (b)(6) 00065

Sent: Tuesday, September 19, 2006 7:30 AM
Subject: Read: Let us chat on about SCOUT, SC3D, the X-38 program and RIS; noted below are our patents that cover said technology that RIS and your groups are using.

Your message

To: Delgado, Francisco J. (JSC-ER2)

Cc:

Subject: Let us chat on about SCOUT, SC3D, the X-38 program and RIS;

noted below are our patents that cover said technology that RIS and your

groups are using.

Sent: Tue, 19 Sep 2006 08:52:25 -0500

was read on Tue, 19 Sep 2006 09:30:05 -0500

~~~

RE: Read: Let us chat on about SCOUT, SC3D, the X-38 program and RIS; noted below are our patents that cover said technology that RIS and your groups are using.

(b)(6)

From: Fein, Edward K. (JSC-AL) <[redacted]>
To: Delgado, Francisco J. (JSC-ER2) <[redacted]>, Kennedy, Alan J. (HQ-MC000) <[redacted]>
Date: Sep 26 2006 - 10:58am

(b)(6)

Frank ... I've talked with Alan, and he said he'd respond, and give you a call.

-Ed

~~~

RE: Read: Let us chat on about SCOUT, SC3D, the X-38 program and RIS; noted below are our patents that cover said technology that RIS and your groups are using.

(b)(6)

From: Mike Abernathy <[redacted]>
To: 'Delgado, Francisco J. (JSC-ER2)' <[redacted]>, 'Fein, Edward K. (JSC-AL)' <[redacted]>, 'Kennedy, Alan J. (HQ-MC000)' <[redacted]>, <[redacted]>

(6)(6)

CC: 'Fredrickson, Steven E. (JSC-ER)' <[redacted]>

(b)(6)

Date: Sep 26 2006 - 12:13pm

(b)(6)

Thank you very much. It means very much to Carolyn and I right now.

Mike Abernathy

Rapid Imaging Software, Inc.

00066

From: Delgado, Francisco J. (JSC-ER2) [mailto[redacted]] —(b)(6)
Sent: Monday, September 25, 2006 9:42 PM
To: Mike Abernathy; Fein, Edward K. (JSC-AL); Kennedy, Alan J. (HQ-MC000); [redacted]
Cc: Delgado, Francisco J. (JSC-ER2); Fredrickson, Steven E. (JSC-ER)
Subject: FW: Read: Let us chat on about SCOUT, SC3D, the X-38 program and RIS; noted below are our patents that cover said technology that RIS and your groups are using.

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Please let me know what I need to do on my end to help move this along.

BTW: If we do not deal with issue immediately it will only get worse for NASA. I know of several Projects within JSC, JPL, and Langley that use independently developed technology (i.e. technology that does not use what RIS and I came up with) that I am sure Mr. Adams and company would claim infringes on their "Patents." We seem to be on his radar at the moment because we do what government organizations are encouraged to do ("Publish their work").

Thank You,

Frank Delgado

From: Robert Adams [[redacted]] (b)(6)
Sent: Mon 9/25/2006 5:58 PM
To: Delgado, Francisco J. (JSC-ER2)
Subject: RE: Read: Let us chat on about SCOUT, SC3D, the X-38 program and RIS; noted below are our patents that cover said technology that RIS and your groups are using.

Sir,

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00067

United States Patent 5,566,073 Margolin October 15, 1996 Pilot aid using a synthetic environment

United States Patent 5,904,724 Margolin May 18, 1999, Method and apparatus for remotely piloting an aircraft

We simple have one goal in mind and that is have a chat regarding the technology and that RIS and NASA take a license of said IP technology.

Thank you

From: Delgado, Francisco J. (JSC-ER2) [redacted] (b)(6)
Sent: Tuesday, September 19, 2006 7:30 AM
Subject: Read: Let us chat on about SCOUT, SC3D, the X-38 program and RIS; noted below are our patents that cover said technology that RIS and your groups are using.

Your message

To: Delgado, Francisco J. (JSC-ER2)

Cc:

Subject: Let us chat on about SCOUT, SC3D, the X-38 program and RIS;

noted below are our patents that cover said technology that RIS and your

groups are using.

Sent: Tue, 19 Sep 2006 08:52:25 -0500

was read on Tue, 19 Sep 2006 09:30:05 -0500

~~~

FW: and the very last communication of the day

From: Fein, Edward K. (JSC-AL) [redacted]
To: Kennedy, Alan J. (HQ-MC000) [redacted] (b)(6)
CC: Borda, Gary G. (HQ-MC000) [redacted]
Date: Sep 26 2006 - 8:11am

[redacted]

[redacted] (b)(5)

From: Mike Abernathy [redacted] (b)(6)
Sent: Monday, September 25, 2006 8:18 PM
To: Delgado, Francisco J. (JSC-ER2); Fein, Edward K. (JSC-AL)
Subject: FW: and the very last communication of the day

00063
~~~

Mike Abernathy

Rapid Imaging Software, Inc.

From: Mike Abernathy [mailto[redacted]] (b)(6)
Sent: Monday, September 25, 2006 6:25 PM (6)(6)
To: FEIN, EDWARD K. (JSC-HA) (NASA); DELGADO FRANCISCO J. (FRANK) ([redacted]v); Kennedy, Alan J. (HQ-MC000);[redacted]; 'Moore, Thomas, Mr, OSD-ATL'; 'Davey, Jon (Bingaman)'
Subject: and the very last communication of the day (b)(6)

Hi All,

Let me summarize what I think has just happened to our company.

In late 1995 we introduce our LandForm synthetic vision system to the market as COTS software product.

In 1997/8 we sell this to NASA and together we are the first people on earth to create a synthetic vision flight guidance system for a remotely piloted vehicle. Starting in 1998 the X38 is captive carried and test flown using this system. We documented our success in the attached document written in 1998 and published in early 1999. It was my privilege to be at Edwards when it happened, and is the highlight of my career until the program is cancelled in 2002.

We go on and demonstrate that our software can be used as pilot aid to other UAVs including Predator, Shadow, Tern, and many more. We receive no interest in this application, but instead they use it for sensor operator stations. It is a commercial success and people say good things about it. It is sold to mostly to a commercial UAV manufacturer named AAI Corporation. Many tests are done and the military guys all like it.

In 1999 the patent office issues a patent to a former Atari employee named Margolin for a Synthetic Environment for Remotely Piloted Vehicle. He had evidently applied for it in 1996. Shortly thereafter he begins to complain to NASA that they and RIS infringed upon his patent presumably by flying a system 2 years before he received his patent. Is this a joke?

In 7 years he never so much as asked RIS about using his technology. Margolin as best I can tell never built this system and never test flew it. Can't say as I blame him because his system looks to me like a crater looking for an address. It cannot be safely operated in the form patented (no autopilot). No one is even stupid enough to build it this way, not even him.

00069

Sometime after that, I am alerted to the patent. I read it, but since there are major differences in the way X-38 worked with our software, I felt strongly that we had not infringed. I provide this information, plus evidence of prior art to NASA legal counsel. I am troubled because really I can't see how his system could fly because it would fail during link loss. Margolin also had a patent on synthetic vision for manned aircraft (if you can imagine) and we found copious prior art for that. I am also troubled because I never hear that the request for reexamination has been sent in by NASA.

Last week I received an email from Optima technology group threatening (thinly veiled) to destroy our relationships with our customers and sue us if we don't license their technologies. We explain that we do not sell software for use in piloting unmanned aerial vehicles any more owing to insurance which is true. We had demonstrated this in the past, but there really is not much market that we could see. We also explained that we had not infringed and why we thought we had been respectful of their patent, but they just tried to make it look like we infringed. But we did not.

They know we cannot withstand the onslaught of their lawsuits, even though we are clearly and obviously not guilty of infringement. They think that we will have to fold and accept their license, but we cannot do this because they are legal blackmailers, and because they are selling defective technology. If we give in, then they will just destroy some other little companies they way they did ours. And we cannot let anyone pay them off for us, because that just gives them funds to go destroy another company. For many years our company has tried to provide an innovative product with an excellent value and never compromise our integrity. I cannot let this nonsense bring that to an end by pretending that we are licensing technology when what they are selling is a fraud.

When I asked politely if their system has ever been tested Mr. Adams simply tells us to go get a lawyer, he is referring the matter for filing. I felt that it was not unreasonable to ask to know this but it really made him furious. Anyway I told him to tell it to our lawyer Mr. Ben Allison of Sutinfirm with whom I shall meet tomorrow. Tonight they said that they will issue a cease and desist order, which I believe means that we will be unable to sell our software anymore which will destroy our income stream and that will be it. I can't waste anymore time on this now. It is time for me to get back to work on things that matter for our users.

I have a docs appointment tomorrow at 8-10 local time. I had throat surgery recently so I really can't talk and frankly I find I tend to break into tears very frequently when I try to do so. But I want you all to know that I will stand firm until it is over. What would the soldiers who have used our software in combat think of me if I gave ground? Then bring it on.

I know it sounds bad for us right now, but remember that whatever happens to us no one can take away the honor and the privilege of working with NASA, the OSD, and all the other completely excellent people with whom we have worked.

Mike Abernathy

Rapid Imaging Software, Inc.

Attached are the other communications from them.

From: Robert Adams[redacted] (b)(6)
Sent: Monday, September 25, 2006 3:51 PM
To: 'Mike Abernathy'
Subject: RE: license

Mike,

Let me try and be clear, all such development at OTG on behalf and or/or by our licensee is covered by NDA's and thus our company can be sued should we violate such agreements. As to your company's infringement of our patents, since that was clearly not covered by a NDA with us; please provide said information in detail:

Other then those items listed at your website and NASA's, what other projects did you do that infringed on our invention? If so when, where, and how?
Who at NASA flight-tested your product that used our invention? Please provide us with the name of the Pilot in Command, the responsible Flight Test Engineer, the model and block number of the vehicle and GCS, and the range or location at which such testing might have taken place with NASA and others. Also, indicate the dates of such testing. If flight test reports are available, as well please provide them to us.

Mike, I have no time to play games with someone who clearly infringes and thinks nothing of respecting our IP.

I will forward said matter to our legal department for further research and filing in accordance with the Federal laws. Please have your legal IP counsel contact our attorneys.

Robert Adams

From: Mike Abernathy [redacted] (b)(6)
Sent: Monday, September 25, 2006 2:26 PM
To: 'Robert Adams'
Subject: RE: license

Robert,

You have offered to license your technology to our company. You have stated that this technology is useful for "see and avoid applications" for UAVs which is an interesting market arena. We are making a good faith effort to consider your offer. We must know whether this technology has been brought into existence and whether it was ever test flown as a matter of due diligence.

We are not asking these questions out of idle curiosity and we certainly not trying to be difficult – we need this information in order to know the market value of the technology to our users, and there are certain elements of the method that we have concerns about. A flight test report – even if the system was implemented on a model airplane – will almost certainly allay our concerns and we can get on with this. The fact of whether or not this technology has been tested does not require an NDA.

00071

Robert, throughout our dealings I have been honest and responsive to all of your requests, perhaps at peril to our company. I now ask you to please reciprocate my efforts in a small way and provide the requested information so that we may consider your offer of license.

Mike Abernathy

Rapid Imaging Software, Inc.

From: Robert Adams [mailto[redacted]] (b)(6)
Sent: Monday, September 25, 2006 2:49 PM
To: 'Mike Abernathy'
Subject: RE: license

Mike,

Neither the company nor I are in any way anxious in signing any more licensees's as we have many already, but as you know we must protect our patents in order to preserve said Intellectual Property.

As to your questions, they do not relate to a license and/or a licensee. Our Intellectual Property has been tested in court and is proven solid by far such standards the Federal Court including the Federal Appeals Court. In addition, as to matters of disclosure, all such development at OTG and by our licensee is covered by NDA's.

Should you wish to challenge such, then I advise you to seek proper legal counseling as we are not an attorney nor will ours advice you on such a matters.

Your company has clearly infringed and OTG must protect itself against such matters just as your company would do if in the same position.

Robert Adams

From: Mike Abernathy [redacted] (b)(6)
Sent: Monday, September 25, 2006 1:29 PM
To: 'Robert Adams'
Subject: license

Dear Robert,

00072

Please tell the legal team thanks for getting back to us right away – we appreciate it.

You have asked us to consider licensing and this we are now doing. In the interest of due diligence as a prospective licensor of your technology, we ask that you provide us with the following information about the subject invention:

Was this invention ever constructed? If so when, where, and how?
Was this invention ever flight tested? Please provide us with the name of the Pilot in Command, the responsible Flight Test Engineer, the model and block number of the vehicle and GCS, and the range or location at which such testing might have taken place. Also, indicate the dates of such testing. If flight test reports are available please provide them to us, as well.

I know that you are anxious for us to consider your license offer, please provide us with this information.

Mike Abernathy

Rapid Imaging Software, Inc.

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latest from Optima

From: Mike Abernathy [redacted] (b)(6)
To: FEIN, EDWARD K. (JSC-HA) (NASA) [redacted], Kennedy, Alan J. (HQ-MC000) [redacted]
Date: Sep 25 2006 - 3:08pm

image002.gif - 6.9k - View in Outlook (b)(6)

Ed,

This has not blown over. We would rather lose our company than see NASA hurt by this. Ed, it appears that RIS situation is hopeless. They know that we did not infringe, yet they continue because they know that we lack the funds to fight them. Our situation appears hopeless but we cannot accept a license for technology that we know is dangerous to the public, so I cannot accept this deal that they have offered.

Let us know what you think as soon as possible.

Mike Abernathy

Rapid Imaging Software, Inc.

From: Robert Adams [redacted] (b)(6)

00073

Sent: Monday, September 25, 2006 12:26 PM
To: 'Mike Abernathy'
Subject: Privileged and Confidential Settlement Communications Protected Under Rule 408 of the Federal Rules of Evidence

Privileged and Confidential Settlement Communications Protected

Under Rule 408 of the Federal Rules of Evidence

Mike,

My legal team has read your response and it is a personal shame since you would rather cut and run verse facing the facts and take a license for past and future business, as I am sure it would be substantially less then litigation.

As you have been made aware in our prior communications, among other inventions, the Patents protect a number of features that are implemented in products capable of flying any and all UAV's (1.3) remotely and/or using Synthetic Vision and/or using a synthetic environment.

1.1 "Patent Portfolio" shall mean the portfolio consisting of United States Patent Numbers 5,904,724 (Method and Apparatus for Remotely Piloting an Aircraft), 5,566,073 (Pilot Aid Using a Synthetic Environment), and those future United States patents that may be added in accordance with the covenants and warranties.

1.2 "RPV" shall mean "remotely piloted vehicle." A "remotely piloted aircraft" is an RPV. "UAV" shall mean "unmanned aerial vehicle." RPV is an older term for UAV. "UCAV" shall mean "Unmanned Combat Aerial Vehicle." UCAV is also sometimes defined as an "Uninhabited Combat Aerial Vehicle." UCAV is a UAV that is intended for use in combat. UCAS means "Unmanned Combat Air System."

1.3 "Synthetic Vision" is the current term for "Synthetic Environment" and is the three dimensional projected image data presented to the pilot or other observer.

Of the ten companies responsible for the establishment of UAV Specifications or standard, eight of those companies sell UAV-Devices under brands they control, and each of those companies, i.e., Boeing Aerospace; Lockheed; Nakamichi Corporation; General Atomics Corporation; L-3 and Jacor Corporation; Raytheon; and Geneva Aerospace, pay Optima running royalties for the above referenced patents.

The substantial terms and conditions of our licensing Agreement: i) resulted from negotiations with the market leading manufacturers of UAV's; ii) are subject to most favored nation clauses; and iii) are, therefore, not negotiable.

The Agreement i) is exceedingly fair; ii) does not obligate Infringer to anything more than an industry accepted reasonable royalty for the Patents; iii) does not obligate Infringer to anything more than an industry accepted reasonable terms; and iv) may be canceled by Infringer at any time.

Mike, there is no reason to permit Infringer (Your company) to further drag on the execution of said Agreement based on the facts present on the infringement matter.

Infringer must appreciate that the Patents cover a range of different inventions required to implement the UAV using Synthetic Vision Specifications; and there exists pending divisions of the Patents having claims that are read on by implementation of the UAV Specifications. Infringer principal competitors have appreciated the exceptional litigation strength and flexibility of my patent portfolio and have decided to accept a license rather than expose themselves to an injunction.

Infringer must appreciate that if litigation between the parties is initiated: i) the matter will immediately become personal for both parties; ii) I do not have to account to any other person; and iii) no license or settlement of any kind will ever be possible under any of my intellectual properties. Infringer's competitors require that Infringer be either licensed or enjoined.

I have resolved myself to this course of action in the event an agreement reached shortly, I firmly believe that enjoining Infringer from selling UAV-Devices will not result in lost royalties; and it is in Optima's long-term interests to make an example of a company that has refused to take a license.

Anyone who is fully knowledgeable of the strength and scope of my patent portfolio, and who appreciates the risk-taking and tenacity that I have demonstrated, would not, in light of the terms being offered, recommend jeopardizing the UAV business Infringer enjoys in the U.S.

1.

I have just returned from business travel, and have not had a chance to look over your communications in detail. Thank you very much for bringing your concerns to our attention. Let me assure you that we will do everything in our power, now and in the future, to avoid infringement of these or any patents. We have already begun another careful analysis of them and will act swiftly upon what we learn, should any problems be found. We have been aware of these patents for some years and have not ever infringed upon them, and will not do so. When we first learned of them, we carefully examined our activities and those of our customers to make sure there was no possible infringement of them. As soon as we learned of it, we also informed the legal departs of our major customers to alert them to the existence of USP 5,904,724, but so far no UAV manufacturers have been seriously interested in offering synthetic vision for their UAV pilot stations.

RIS own admission they knew about '724 will go to show that their infringement was willful, which means treble damages Robert. (They probably found out about it when NASA interviewed Jed about their X-38 project.) We will find out at trail and/or during the discover phase.

From their web site: http://www.landform.com/

SmartCam3D provides unparalleled situation awareness for UAS sensor operators. It fuses video with synthetic vision to create the most powerful situation awareness technology currently available. SmartCam3D is an augmented reality system that has been developed, flight tested, and deployed in the most demanding conditions including combat, and as a result it is highly evolved technology which is in use today around the world. The reason that SmartCam3D is so popular is simple: it makes sensor operators more effective, and reduces the target response time. SmartCam3D is deployed with US Army Shadow UAV, and is at present being integrated to the USAF Predator, as well as the Army Warrior UAS. SmartCam3D is the war fighter's choice for sensor operator situational awareness.

Improving a patented invention by adding something to it (in this case fusing video with synthetic vision) is still

infringement. Indeed, you may be able to patent the improvement. However, you may not practice the improved invention without the permission of the original patent holder. (It also means that the holder of the original patent may not practice your improvement without your permission.)

Since they publicly admit SmartCam3D is being used with US Army Shadow, USAF Predator, and Army Warrior his statement "no UAV manufacturers have been seriously interested in offering synthetic vision for their UAV pilot stations" is obviously false.

Also from their web site:

Software License Changes

RIS, Inc. changed insurance carriers, and effective September 1st, 2006 we updated our Software User License agreement. It now states that "The user is prohibited from using this software to pilot manned or unmanned aircraft." Our licenses have always prohibited use of our software for piloting manned aircraft. As you know, we had hoped that we would find a market for our UAV Glass Cockpit Product line. However, there is simply not sufficient market interest for us to bring such a product to market at this time, so we have decided not to release it. As a small company, we need to focus on our energy on the Sensor Operator and Intelligence Analyst at this time.

He is saying that his product should not be used for the very purpose it being advertised, sold, and used for. Lame. And it doesn't get him off the hook as he is still legally liable.

Since it did not state this until September 1, 2006, he has started to take this seriously, and he is clearly worried thus, he changed the terms to try to reduce the liability. I will have our team use wayback site and pull up the old Software User License agreement prior to Sept 1, 2006 this is when I bet they made all their sales and that is what OTG would be entitled too as well.

Here is a short lesson on infringement for Mike.

From: : http://inventors.about.com/library/bl/toc/bl_patent-infringement.htm

Text Box: Infringement can be direct, indirect, or contributory. Anyone who makes, uses, or sells the patented invention is a direct infringer. If a person actively encourages another to make, use, or sell the invention, the person so inducing is liable for indirect infringement. Contributory infringement can be committed by knowingly selling or supplying an item for which the only use is in connection with a patented invention. Good faith or ignorance is no defense for direct infringement, but it can be for indirect or contributory infringement. The remedies for infringement consist of: 1. Injunctive relief,
2. damages (including treble damages for willful infringement),
3. attorneys' fees in some cases, and
4. court costs.

2.

We discovered that the system described the in patent pertaining to remotely piloted vehicles USP 5,904,724 contains an entire clause in claim 1 that did not exist in the X38 or other UAVs that we have seen – this is the final paragraph of clause 1 regarding the method for handling delay in the control loop by "adjusting control sensitivity". This simply is not present in any form in any vehicles with which we have experience. Since all claims of this patent include this clause by reference, that patent is not relevant to these vehicles because none of them have this feature.

The clause he is referring to is:

a set of one or more remote flight controls coupled to said computer for inputting said flight control information, wherein said computer is also for determining a delay time for communicating said flight data between said computer and said remotely piloted aircraft, and wherein said computer adjusts the sensitivity of said set of one or more remote flight controls based on said delay time.

Time delays in a control system are unavoidable. Normally, a control system has fixed time delays and the system is designed to operate properly with these time delays. Because of the complexity of a UAV system these time delays may

not be known at the time the system (including the control laws) are designed. These time delays may also change during a mission due to the communications path changing. If the system does not properly deal with these changing time delays it will lead to pilot-induced oscillation and there is a good chance the aircraft will crash.

Anyone designing a UAS that does not adjust for changing time delays is an idiot. I don't think the people making UAVs are idiots. That does not relieve him of contributory infringement. It is likely that these time delays are dealt with as part of the control law system which Abernathy might not be privy to and thus a court order will provide us his insider info.

3.

More important however, is that all UAV control systems with which we are familiar require a device called an autopilot which is not contemplated at all in the subject patent. This device is similar to ones in modern manned aircraft, but it is used to control the aircraft flight in the pitch, heading, and roll axes. On UAVs, the communications delay is not handled by determining the delay and adjusting the control sensitivity as Margolin prescribes. Instead, an autopilot is installed onboard the aircraft where it senses changes in pitch, heading, and roll locally on board the aircraft. The pilot still makes control inputs to fly the airplane, but only via the autopilot on board the aircraft. The autopilot corrects attitude drift instantaneously avoiding the problem of substantial communication delays, and allows the pilot to control the vehicle in a more stable manner.

Most important, the autopilot is absolutely required to deal with the frequent communications outages which occur between the UAV and the ground control segment (This can be anywhere from a second to an hour in length, generally). In the system of Margolin, a communications outage would often result in the loss of the aircraft, because the pilot would be unable to correct attitude drift during communication link loss and the air vehicle would go out of control and could crash. In the last decade of working with UAVs never have I witnessed a flight in which the communication link was not lost at least once during the flight. If the control communication link goes down, no control inputs can be made to the aircraft from the pilot on the ground, but the autopilot keeps the airplane from crashing by flying straight and level or gently banking until the link is restored. The system of Margolin does not recognize the problem of link loss, and fails to offer any solution. The autopilot functionality can be located in various components in the X38 it was in the on board GNC (Guidance Navigation and Control) computer, as I recollect.

The fact that '724 does not explicitly teach an autopilot is irrelevant. Adding an autopilot to '724 is still infringement, just as adding a video overlay is infringement.

There is also the matter of the Doctrine of Equivalence. See attached file patents1.pdf

Consider Column 2, lines 12-18:

The computers in the system allow for several modes of operation. For example, the remote aircraft can be instructed to fly to given coordinates without further input from the remote pilot. It also makes it possible to provide computer assistance to the remote pilot. In this mode, the remote flight control controls absolute pitch and roll angles instead pitch and roll rates which is the normal mode for aircraft.

That legal sounds like a defined autopilot to me and that as we need to show infringement at the Markman hearing..

4.

There is another on-board component called a SAS or Stability Augmentation System found on most large modern UAVs such as Predator, and which performs additional real-time stabilization to that done by the autopilot. Again, the SAS is not contemplated by the Margolin patent, yet is required to dampen control system oscillations in order to safely operate a UAV in systems that may suffer from communications delays to remote user control inputs. There are many more differences that we found when we first examined it, but as you can see we have never worked with a vehicle upon which your system could have been implemented and safely flown, and therefore we realized that it is impossible for us to have infringed this patent 5,904,724. You may easily independently verify the fact of these profound and fundamental differences from your system by examining the printed published materials regarding UAV control system and NASAs many publications on X-38 control systems.

Again, adding something to '724 is still infringement.

As far as examining the control systems on NASA's X-38 project is concerned, in a telephone conversation with NASA's Alan Kennedy in the Office of the General Counsel on February 9, 2006, he repeated his claim that, "The X-38 does fly." NASA has a video of the X-38 (flying) on its web site. (See http://www.dfrc.nasa.gov/Gallery/Movie/X-38/HTML/EM-0038-

01.html)

5.

We have never allowed our software to be used as an aid in piloting manned aircraft and thus cannot have infringed 5,566,073. If you aware of anyone doing this with our software, kindly inform us immediately, and we will ask them to desist.

We still have him on infringing on '724.

6.

Finally, let me set your mind at ease by informing you that our software product license currently explicitly contains the following clause: "The user is prohibited from using this software to pilot manned or unmanned aircraft." Alas, the requirements of our current company insurance policy, combined with the profound lack of a market for this possible application of our technology facilitated this business decision. Your letter said we recognize the "value" of this technology, but in view of the current situation "lack of value" is probably more appropriate.

From: Mike Abernathy [redacted] (b)(6)
Sent: Monday, September 25, 2006 9:08 AM
To: 'Robert Adams'
Subject: question

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We will get back to you just as soon as we have had a chance to study these patent claims further. For now, is there anything else that our company can reasonably do in regard to the concern that you expressed?

Sincerely,

Mike Abernathy

Rapid Imaging Software, Inc.

From: Robert Adams [mailto[redacted] (b)(6)
Sent: Tuesday, September 19, 2006 7:53 AM
To: [redacted]
Cc: [redacted]
Subject: [Norton AntiSpam] Rapid Imaging Software, Inc. patent infringement

It has come to our attention that your company provides Synthetic Vision to fly UAV both in real time and in simulation.

September 19, 2006

Michael F. Abernathy

Rapid Imaging Software, Inc.

[redacted] (b)(6)

Sent via US MAIL, FAX & EMAIL

Mr. Abernathy,

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I am sure that Mr. Francisco Delgado of NASA and your other clients would agree with your company having a proper license of our intellectual property.

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Please contact us so that we can a proper legal license with our attorneys for your use of our technology and/or you may contact our attorneys (HYPERLINK [redacted]

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[redacted]

[redacted]-0000-

[redacted]

[redacted]o arrange a proper license of said intellectual property. You have 15 days to do so.

Sincerely,

Robert Adams, CEO

Optima Technology Group

RA/cp

-enclosure links-

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FW: question

(b)(6)

From: Mike Abernathy <[redacted]
To: DELGADO FRANCISCO J. (FRANK) <[redacted]>, 'Fein, Edward K. (JSC-AL)' <[redacted]>, 'Kennedy, Alan J. (HQ-MC000)' <[redacted]>, <[redacted]>
Date: Sep 25 2006 - 11:44am

One more FYI.

(b)(6)

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(b)(6)

RE: Rapid Imaging Software, Inc. patent infringement

From: Fein, Edward K. (JSC-AL) [redacted]>
To: Mike Abernathy [redacted]>, DELGADO FRANCISCO J. (FRANK) [redacted]>
CC: Kennedy, Alan J. (HQ-MC000) [redacted]
Date: Sep 25 2006 - 10:38am

(b)(6)

Thanks, Mike.

-Ed
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From: Mike Abernathy [redacted] (b)(6)
Sent: Monday, September 25, 2006 10:32 AM
To: Fein, Edward K. (JSC-AL); DELGADO FRANCISCO J. (FRANK)
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Subject: FW: Rapid Imaging Software, Inc. patent infringement

FYI

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We have never allowed our software to be used as an aid in piloting manned aircraft and thus cannot have infringed 5,566,073. If you aware of anyone doing this with our software, kindly inform us immediately, and we will ask them to desist.

Finally, let me set your mind at ease by informing you that our software product license currently explicitly contains the following clause: "The user is prohibited from using this software to pilot manned or unmanned aircraft." Alas, the requirements of our current company insurance policy, combined with the profound lack of a market for this possible application of our technology facilitated this business decision. Your letter said we recognize the "value" of this technology, but in view of the current situation "lack of value" is probably more appropriate.

We will get back to you just as soon as we have had a chance to study these patent claims further. For now, is there anything else that our company can reasonably do in regard to the concern that you expressed?

Sincerely,

Mike Abernathy

Rapid Imaging Software, Inc.

From: Robert Adams [mailto:[redacted]) (b)(6)
Sent: Tuesday, September 19, 2006 7:53 AM
To: [redacted]
Cc: [redacted]
Subject: [Norton AntiSpam] Rapid Imaging Software, Inc. patent infringement

It has come to our attention that your company provides Synthetic Vision to fly UAV both in real time and in simulation.

September 19, 2006

Michael F. Abernathy

Rapid Imaging Software, Inc.

[redacted]) (6)(6)

00030

Sent via US MAIL, FAX & EMAIL

Mr. Abernathy,

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I am sure that Mr. Francisco Delgado of NASA and your other clients would agree with your company having a proper license of our intellectual property.

Hence as a legal formality, we are inviting your company to license our technology seeing that your company is already commercially using and selling said technology as covered by our IP listed below:

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United States Patent 5,904,724 Margolin May 18, 1999, Method and apparatus for remotely piloting an aircraft

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Please contact us so that we can a proper legal license with our attorneys for your use of our technology and/or you may contact our attorneys (HYPERLINK [redacted] to arrange a proper license of said intellectual property. You have 15 days to do so.

Sincerely,

(b)(6)

Robert Adams, CEO

Optima Technology Group

RA/cp

-enclosure links-

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RE: Rapid Imaging Software, Inc. patent infringement

000030
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(b)(6)

From: Fein, Edward K. (JSC-AL) [redacted]
To: Mike Abernathy [redacted], DELGADO FRANCISCO J. (FRANK) [redacted]
CC: Kennedy, Alan J. (HQ-MC000) [redacted]
Date: Sep 25 2006 - 10:38am

Thanks, Mike.

(b)(6)

-Ed

From: Mike Abernathy [redacted]
Sent: Monday, September 25, 2006 10:32 AM
To: Fein, Edward K. (JSC-AL); DELGADO FRANCISCO J. (FRANK)
Cc: Kennedy, Alan J. (HQ-MC000)
Subject: FW: Rapid Imaging Software, Inc. patent infringement

FYI

Mike Abernathy

Rapid Imaging Software, Inc.

From: Robert Adams [redacted] (b)(6)
Sent: Monday, September 25, 2006 8:55 AM
To: 'Mike Abernathy'
Subject: RE: Rapid Imaging Software, Inc. patent infringement

Mike,

Thanks for your email, I will forward it today over to my patent and review legal team. Once they complete a review of your comments, I will give you a ring on the phone and a response via the post and/or attorneys.

Respectfully,

Robert Adams

From: Mike Abernathy [redacted] (b)(6)
Sent: Sunday, September 24, 2006 4:29 PM
To: 'Robert Adams'
Subject: RE: Rapid Imaging Software, Inc. patent infringement

Dear Mr. Adams,

I have just returned from business travel, and have not had a chance to look over your communications in detail. Thank you very much for bringing your concerns to our attention. Let me assure you that we will do everything in our power, now and in the future, to avoid infringement of these or any patents. We have already begun another careful analysis of them and will act swiftly upon what we learn, should any problems be found. We have been aware of these patents for some years and have not ever infringed upon them, and will not do so. When we first learned of them we carefully examined our activities and those of our customers to make sure there was no possible infringement of them. As soon as we learned of it, we also informed the legal departs of our major customers to alert them to the existence of USP 5,904,724, but so far no UAV manufacturers have been seriously interested in offering synthetic vision for their UAV pilot stations.

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More important however, is that all UAV control systems with which we are familiar require a device called an autopilot which is not contemplated at all in the subject patent. This device is similar to ones in modern manned aircraft, but it is used to control the aircraft flight in the pitch, heading, and roll axes. On UAVs, the communications delay is not handled by determining the delay and adjusting the control sensitivity as Margolin prescribes. Instead, an autopilot is installed onboard the aircraft where it senses changes in pitch, heading, and roll locally on board the aircraft. The pilot still makes control inputs to fly the airplane, but only via the autopilot on board the aircraft. The autopilot corrects attitude drift instantaneously avoiding the problem of substantial communication delays, and allows the pilot to control the vehicle in a more stable manner.

Most important, the autopilot is absolutely required to deal with the frequent communications outages which occur between the UAV and the ground control segment (This can be anywhere from a second to an hour in length, generally). In the system of Margolin, a communications outage would often result in the loss of the aircraft, because the pilot would be unable to correct attitude drift during communication link loss and the air vehicle would go out of control and could crash. In the last decade of working with UAVs never have I witnessed a flight in which the communication link was not lost at least once during the flight. If the control communication link goes down, no control inputs can be made to the aircraft from the pilot on the ground, but the autopilot keeps the airplane from crashing by flying straight and level or gently banking until the link is restored. The system of Margolin does not recognize the problem of link loss, and fails to offer any solution. The autopilot functionality can be located in various components in the X38 it was in the on board GNC (Guidance Navigation and Control) computer, as I recollect.

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We have never allowed our software to be used as an aid in piloting manned aircraft and thus cannot have infringed 5,566,073. If you aware of anyone doing this with our software, kindly inform us immediately, and we will ask them to desist.

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We will get back to you just as soon as we have had a chance to study these patent claims further. For now, is there anything else that our company can reasonably do in regard to the concern that you expressed?

Sincerely,

Mike Abernathy

Rapid Imaging Software, Inc.

From: Robert Adams [redacted] (b)(6)
Sent: Tuesday, September 19, 2006 7:53 AM
To: [redacted]
Cc: [redacted]
Subject: [Norton AntiSpam] Rapid Imaging Software, Inc. patent infringement

It has come to our attention that your company provides Synthetic Vision to fly UAV both in real time and in simulation.

September 19, 2006

Michael F. Abernathy

Rapid Imaging Software, Inc.

[redacted] (b)(6)

Sent via US MAIL, FAX & EMAIL

Mr. Abernathy,

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I am sure that Mr. Francisco Delgado of NASA and your other clients would agree with your company having a proper license of our intellectual property.

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Please contact us so that we can a proper legal license with our attorneys for your use of our technology and/or you may contact our attorneys (HYPERLINK [redacted] law [redacted] to arrange a proper license of said intellectual property. You have 15 days to do so.

(b)(6)

Sincerely,

Robert Adams, CEO

Optima Technology Group

00004

RA/cp

-enclosure links-

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RE: Rapid Imaging Software, Inc. patent infringement

From: Fein, Edward K. (JSC-AL) [redacted]
To: Mike Abernathy [redacted], Delgado, Francisco J. (JSC-ER2) [redacted], Kennedy, Alan J. (HQ-MC000) [redacted]
Date: Sep 25 2006 - 9:59am

Thanks, Mike!

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RE: Rapid Imaging Software, Inc. patent infringement

From: Fein, Edward K. (JSC-AL) [redacted]
To: Delgado, Francisco J. (JSC-ER2) [redacted], Mike Abernathy [redacted], Kennedy, Alan [redacted]
Date: Sep 25 2006 - 8:55am

[redacted]

Edward K. Fein
Deputy Chief Counsel/
Intellectual Property Counsel
NASA Johnson Space Center
[redacted]

From: Delgado, Francisco J. (JSC-ER2)
Sent: Monday, September 25, 2006 1:12 AM
To: Mike Abernathy; Fein, Edward K. (JSC-AL)
Subject: RE: Rapid Imaging Software, Inc. patent infringement

Please work with Mr. Fein on a time to call. I can 'sneak' away from any activity tomorrow to join a conference call.

thanks,

Frank

From: Mike Abernathy [redacted] — (b)(6)
Sent: Sun 9/24/2006 6:38 PM
To: Fein, Edward K. (JSC-AL); Delgado, Francisco J. (JSC-ER2)
Subject: Rapid Imaging Software, Inc. patent infringement

Gentlemen,

I strongly believe that these two patents are defective, but more important I feel strongly that NASA and RIS did not infringe either one of them, in spite of these accusations.

I would like to ask for your help urgently since these people are threatening to sue us and since they have falsely accused us of infringement.

I therefore would like to ask both of you to read my letter attached below which has been sent to Mr. Adams, to make sure that I am stating things properly. Would it be possible for me to call you tomorrow on the phone?

Mike Abernathy

Rapid Imaging Software, Inc.

From: Mike Abernathy [redacted] — (b)(6)
Sent: Sunday, September 24, 2006 5:29 PM
To: 'Robert Adams'
Subject: RE: [Norton AntiSpam] Rapid Imaging Software, Inc. patent infringement

Dear Mr. Adams,

I have just returned from business travel, and have not had a chance to look over your communications in detail. Thank you very much for bringing your concerns to our attention. Let me assure you that we will do everything in our power, now and in the future, to avoid infringement of these or any patents. We have already begun another careful analysis of them and will act swiftly upon what we learn, should any problems be found. We have been aware of these patents for some years and have not ever infringed upon them, and will not do so. When we first learned of them we carefully examined our activities and those of our customers to make sure there was no possible infringement of them. As soon as we learned of it, we also informed the legal departs of our major customers to alert them to the existence of USP 5,904,724, but so far no UAV manufacturers have been seriously interested in offering synthetic vision for their UAV pilot stations.

We discovered that the system described the in patent pertaining to remotely piloted vehicles USP 5,904,724 contains an entire clause in claim 1 that did not exist in the X38 or other UAVs that we have seen – this is the final paragraph of clause 1 regarding the method for handling delay in the control loop by "adjusting control sensitivity". This simply is not present in any form in any vehicles with which we have experience. Since all claims of this patent include this clause by reference, that patent is not relevant to these vehicles because none of them have this feature.

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Sincerely,

Mike Abernathy

Rapid Imaging Software, Inc.

From: Robert Adams [redacted] (b)(6)
Sent: Tuesday, September 19, 2006 7:53 AM
To: [redacted]
Cc: [redacted]
Subject: [Norton AntiSpam] Rapid Imaging Software, Inc. patent infringement

It has come to our attention that your company provides Synthetic Vision to fly UAV both in real time and in simulation.

September 19, 2006

Michael F. Abernathy
[redacted] (b)(6)
[redacted]

[redacted] (b)(6)

Sent via US MAIL, FAX & EMAIL

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Sincerely, (b)(6)

Robert Adams, CEO

Optima Technology Group

RA/cp

-enclosure links-

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RE: Rapid Imaging Software, Inc. patent infringement

From: Delgado, Francisco J. (JSC-ER2) [redacted]
To: Mike Abernathy [redacted], Fein, Edward K. (JSC-AL)
[redacted]
Date: Sep 25 2006 - 1:13am

(b)(6)

Please work with Mr. Fein on a time to call. I can 'sneak' away from any activity tomorrow to join a conference call.

thanks,

Frank

(b)(6)

From: Mike Abernathy [redacted]
Sent: Sun 9/24/2006 6:38 PM
To: Fein, Edward K. (JSC-AL); Delgado, Francisco J. (JSC-ER2)
Subject: Rapid Imaging Software, Inc. patent infringement

Gentlemen,

I strongly believe that these two patents are defective, but more important I feel strongly that NASA and RIS did not infringe either one of them, in spite of these accusations.

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Mike Abernathy

Rapid Imaging Software, Inc.

(b)(6)

From: Mike Abernathy [redacted]
Sent: Sunday, September 24, 2006 5:29 PM
To: 'Robert Adams'
Subject: RE: [Norton AntiSpam] Rapid Imaging Software, Inc. patent infringement

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requirements of our current company insurance policy, combined with the profound lack of a market for this possible application of our technology facilitated this business decision. Your letter said we recognize the "value" of this technology, but in view of the current situation "lack of value" is probably more appropriate.

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Sincerely,

Mike Abernathy

Rapid Imaging Software, Inc.

From: Robert Adams [redacted] (b)(6)
Sent: Tuesday, September 19, 2006 7:53 AM
[redacted]
Cc: [redacted]
Subject: [Norton AntiSpam] Rapid Imaging Software, Inc. patent infringement

It has come to our attention that your company provides Synthetic Vision to fly UAV both in real time and in simulation.

September 19, 2006

Michael F. Abernathy

Rapid Imaging Software, Inc.

[redacted] (b)(6)

Sent via US MAIL, FAX & EMAIL

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Sincerely,

(b)(6)

Robert Adams, CEO

Optima Technology Group

RA/cp

-enclosure links-
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RE: US Patents 5566073 and 5904724

From: FEIN, EDWARD K. (JSC-HA) (NASA) [redacted]
To: Barry V. Gibbens, LaRC [redacted]
CC: Linda B. Blackburn [redacted]
Date: Sep 01 2004 - 4:33pm

(b)(6)

00103
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Rats! I guess I'd should research things better before I blindly send them out. Btw, the real Bahamas get hurricanes too.

-----Original Message-----
From: Barry V. Gibbens, LaRC [redacted] (b)(6)
Sent: Wednesday, September 01, 2004 3:26 PM
To: FEIN, EDWARD K. (JSC-HA) (NASA)
Cc: Linda B. Blackburn
Subject: RE: US Patents 5566073 and 5904724

Very nice! I went to the Nassau Bay website, and looked under "New Things . . . Check It Out." Three of the highlights were "Storm Preparedness Information," "Hurricane Tracking Chart," and "You Can Now Pay Traffic Fines On Line." Sounds like my kind of place!!!

BG

At 02:44 PM 9/1/2004 -0500, you wrote:

No need to telecommute from the Bahamas, Barry. Nassau Bay is right across the street from JSC! Check out http://www.nassaubay.com/. See -- we got it all! And please do pass the word. I'd even risk the wrath of Linda and Kathy to snag one of you guys.

[redacted] (b)(5)

Take care ...

-Ed

-----Original Message-----
From: Barry V. Gibbens, LaRC [redacted] (b)(6)
Sent: Wednesday, September 01, 2004 2:21 PM
To: FEIN, EDWARD K. (JSC-HA) (NASA)
Subject: RE: US Patents 5566073 and 5904724

Thanks Ed - I'll pass the word. Just for future reference, if any of us were to apply for the job, how would you feel about tele-commuting from, say, the Bahamas?????

[redacted] (b)(5)

At 12:30 PM 9/1/2004 -0500, you wrote:

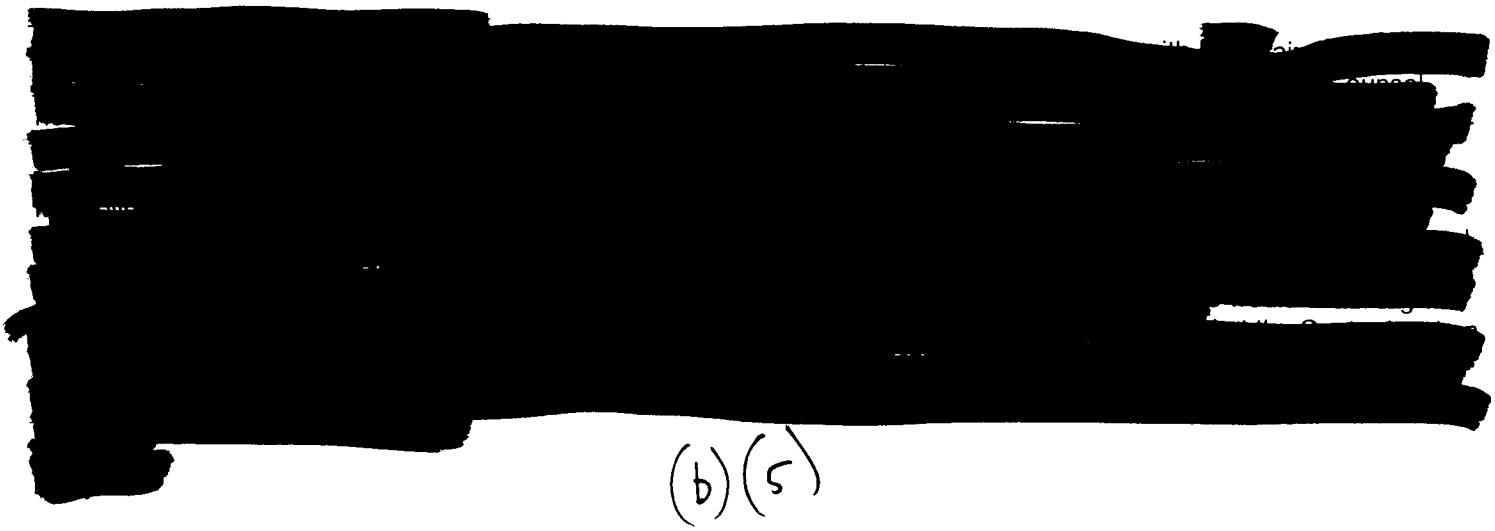
[redacted] (b)(5)

Best regards ...

-Ed

Btw, Jim Cate is retiring at the end of the month, and we definitely will be filling the slot. So please spread the word. Good things about JSC is the high locality pay differential in Houston, and the relatively low cost of living here. The downside is that the poor person will have to deal with my bad a** on a daily basis.

Take care ...
-----Original Message-----
From: Barry V. Gibbens, LaRC [mailto[redacted] (b)(6)
Sent: Wednesday, September 01, 2004 11:29 AM
To: Mike Abernathy; 'Kennedy, Alan'
Cc: Linda B. Blackburn; Dan Baize; 'Trey Arthur'; DELGADO, FRANCISCO J. (FRANK) (JSC-ER2) (NASA); FEIN, EDWARD K. (JSC-HA) (NASA); BOE, ERIC A., LTCOL. (JSC-CB) (NASA)
Subject: Re: US Patents 5566073 and 5904724



At 09:33 AM 9/1/2004 -0600, Mike Abernathy wrote:

Good Morning Alan,
Per our discussions this morning I called both Dan Baize and Barry Gibbens at Langley to discuss the resolution of questions surrounding patents 5566073 and 5904724. When we spoke earlier you indicated that based on the evidence of prior art uncovered so far, that NASA might move for an Ex-Parte re-examination of patent 5566073, provided that NASA patent counsel at LARC concurs. Mr. Baize feels that this patent may invalid because of copious prior art, and that it is therefore a significant impediment to the development of life-saving synthetic vision technologies. Mr. Gibbens has indicated that he and Ms. Blackwell feel it is now appropriate to for NASA LARC to proceed to request a re-examination. We will therefore forward them the same information on prior art that I forwarded to HQ. Please let us know how we can continue to be of help.
Best regards,
Mike Abernathy
Rapid Imaging Software, Inc.
[redacted] (b)(6)
www.landform.com
HYPERLINK "http://www.visualflight.com/"www.visualflight.com

00105

Barry V. Gibbens
NASA Langley Research Center
[redacted] (b)(6)
email: [redacted]
wwwebsite: http://tech-transfer.larc.nasa.gov/

NEW E-MAIL ADDRESS: Please note that effective immediately, my e-mail address is now [redacted] (b)(6)
Please update your mail systems accordingly. Thanks.

Barry V. Gibbens
NASA Langley Research Center
Intellectual Property Law Team - Office of Chief Counsel
[redacted] (b)(6)
email: [redacted]
wwwebsite: http://tech-transfer.larc.nasa.gov/

NEW E-MAIL ADDRESS: Please note that effective immediately, my e-mail address is now [redacted] (b)(6)
Please update your mail systems accordingly. Thanks.

Barry V. Gibbens
NASA Langley Research Center
[redacted] (b)(6)
wwwebsite: http://tech-transfer.larc.nasa.gov/

NEW E-MAIL ADDRESS: Please note that effective immediately, my e-mail address is now [redacted] (b)(6)
Please update your mail systems accordingly. Thanks.

~~~

RE: US Patents 5566073 and 5904724

From: FEIN, EDWARD K. (JSC-HA) (NASA) [redacted] (b)(6)
To: Barry V. Gibbens, LaRC [redacted]
BCC: ROAN, BERNARD J. (JSC-AL) (NASA) [redacted]
Date: Sep 01 2004 - 2:44pm
~~~

No need to telecommute from the Bahamas, Barry. Nassau Bay is right across the street from JSC! Check out http://www.nassaubay.com/. See -- we got it all! And please do pass the word. I'd even risk the wrath of Linda and Kathy to snag one of you guys.

[redacted]

(b)(5)

Take care ...

[redacted]

-----Original Message-----
From: Barry V. Gibbens, LaRC [redacted] (b)(6)
Sent: Wednesday, September 01, 2004 2:21 PM
To: FEIN, EDWARD K. (JSC-HA) (NASA)
Subject: RE: US Patents 5566073 and 5904724

Thanks Ed - I'll pass the word. Just for future reference, if any of us were to apply for the job, how would you feel about tele-commuting from, say, the Bahamas?????

[redacted]

(b)(5)

At 12:30 PM 9/1/2004 -0500, you wrote:

Thanks Barry ...

[redacted]

(b)(5)

Best regards ...

-Ed

Btw, Jim Cate is retiring at the end of the month, and we definitely will be filling the slot. So please spread the word. Good things about JSC is the high locality pay differential in Houston, and the relatively low cost of living here. The downside is that the poor person will have to deal with my bad a** on a daily basis.

Take care ...

-----Original Message-----
From: Barry V. Gibbens, LaRC [redacted] (b)(6)
Sent: Wednesday, September 01, 2004 11:29 AM
To: Mike Abernathy; 'Kennedy, Alan'
Cc: Linda B. Blackburn; Dan Baize; 'Trey Arthur'; DELGADO, FRANCISCO J. (FRANK) (JSC-ER2) (NASA); FEIN, EDWARD K. (JSC-HA) (NASA); BOE, ERIC A., LTCOL. (JSC-CB) (NASA)
Subject: Re: US Patents 5566073 and 5904724

[redacted]

(b)(5)

00107

[redacted]

(b)(5)

At 09:33 AM 9/1/2004 -0600, Mike Abernathy wrote:

[redacted]

at

(b)(5)

Best regards,

Mike Abernathy
Rapid Imaging Software, Inc.
[redacted] (b)(6)

www.landform.com
HYPERLINK "http://www.visualflight.com/"www.visualflight.com

Barry V. Gibbens
NASA Langley Research Center
[redacted] (b)(6)

wwwebsite: http://tech-transfer.larc.nasa.gov/

NEW E-MAIL ADDRESS: Please note that effective immediately, my e-mail address is now [redacted] (b)(6)

Please update your mail systems accordingly. Thanks.

Barry V. Gibbens
NASA Langley Research Center
[redacted]

phone: (757) 864-7141
fax: (757) 864-9190
email: [redacted]
wwwebsite: http://tech-transfer.larc.nasa.gov/

(b)(6)

NEW E-MAIL ADDRESS: Please note that effective immediately, my e-mail address is now [redacted]
Please update your mail systems accordingly. Thanks.

~~~

FW: US Patents 5566073 and 5904724

From: FEIN, EDWARD K. (JSC-HA) (NASA) <[redacted]>
To: RO, THEODORE U., JD (JSC-HA) (NASA) <[redacted]>, CATE, JAMES M., JD (JSC-HA) (NASA) <[redacted]>
CC: KRISHEN, KUMAR (JSC-HA) (NASA) <[redacted]>, WHITTINGTON, JAMES (JSC-HA) (USA) <[redacted]>, HAINES, DAVID D. (JSC-HA) (NASA) <[redacted]>, HIEGER, COLLIN (JSC-HA) (UNK) <[redacted]>, LANE, HELEN W. (JSC-AD) (NASA) <[redacted]>, HAYES, GREG W. (JSC-AD) (NASA) <[redacted]>, ROAN, BERNARD J. (JSC-AL) (NASA) <[redacted]>, REMINGTON, DANIEL R. (DAN) (JSC-AL) (NASA) <[redacted]>
Date: Sep 01 2004 - 12:51pm

(b)(6)

[redacted]

(b)(5)

-----Original Message-----
From: Mike Abernathy [redacted]
Sent: Wednesday, September 01, 2004 12:25 PM
To: FEIN, EDWARD K. (JSC-HA) (NASA)
Subject: RE: US Patents 5566073 and 5904724

Here it is.

Best regards,

Mike Abernathy
Rapid Imaging Software, Inc.
~~~

(505) 265 7020

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www.visualflight.com

-----Original Message-----
From: FEIN, EDWARD K. (JSC-HA) (NASA) [redacted] (b)(6)
Sent: Wednesday, September 01, 2004 11:19 AM
To: 'Mike Abernathy'
Subject: RE: US Patents 5566073 and 5904724

[redacted] (b)(5)

-Ed
-----Original Message-----
From: Mike Abernathy [redacted] (b)(6)
Sent: Wednesday, September 01, 2004 11:45 AM
To: FEIN, EDWARD K. (JSC-HA) (NASA)
Cc: DELGADO, FRANCISCO J. (FRANK) (JSC-ER2) (NASA)
Subject: RE: US Patents 5566073 and 5904724
Hi Ed,

Happy to keep you involved. I appreciated that article you sent me on the topic. The one thing that concerned me in the article is that I realized if Alan just sends the claims analysis to the PTO without requesting a re-exam then the owner will have the leisure to think up excuses for why this is not so, and prepare a defense maybe even ask for his own re-exam. Yikes! If NASA does not ask for the re-exam upon finding the prior art, we are basically strengthening his position to sue NASA by allowing him the time to synthesize a defense against the defects of his patent. It appears that Barry Gibbens is ready to press forward, happily.

Have I sent you the claims analysis yet?

Best regards,

Mike Abernathy
Rapid Imaging Software, Inc.
[redacted] (b)(6)

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-----Original Message-----
From: FEIN, EDWARD K. (JSC-HA) (NASA) [redacted] (b)(6)
Sent: Wednesday, September 01, 2004 10:06 AM
To: 'Mike Abernathy'
Subject: RE: US Patents 5566073 and 5904724

[redacted] (b)(5)

-Ed
-----Original Message-----
From: Mike Abernathy [redacted] (b)(6)
Sent: Wednesday, September 01, 2004 10:33 AM
To: 'Kennedy, Alan'
Cc: 'Barry V. Gibbens, LaRC'; Dan Baize; 'Trey Arthur'; DELGADO, FRANCISCO J. (FRANK) (JSC-ER2) (NASA); FEIN, EDWARD K. (JSC-HA) (NASA); BOE, ERIC A., LTCOL. (JSC-CB) (NASA)
Subject: US Patents 5566073 and 5904724
Good Morning Alan,

[redacted]

(b)(5)

[redacted]

[redacted]

Mike Abernathy
Rapid Imaging Software, Inc.
[redacted]

(b)(6)

~~~

RE: US Patents 5566073 and 5904724

From: Mike Abernathy [redacted]
To: 'FEIN, EDWARD K. (JSC-HA) (NASA)' [redacted]
Date: Sep 01 2004 - 12:44pm

Sir,

Could you read this and let me know what you think of it? I know it will evolve a lot in Barry's hands – which is good. But I would like your thoughts on it for my own and Frank's edification.

Best regards,

Mike Abernathy
Rapid Imaging Software, Inc.
[redacted]

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www.visualflight.com

(b)(6)

-----Original Message-----
From: FEIN, EDWARD K. (JSC-HA) (NASA) [redacted]
Sent: Wednesday, September 01, 2004 11:41 AM
To: 'Mike Abernathy'
Subject: RE: US Patents 5566073 and 5904724

[redacted] (b)(5)

-----Original Message-----
From: Mike Abernathy [redacted]
Sent: Wednesday, September 01, 2004 12:25 PM
To: FEIN, EDWARD K. (JSC-HA) (NASA)
Subject: RE: US Patents 5566073 and 5904724
Here it is.

Best regards,

Mike Abernathy
Rapid Imaging Software, Inc.
[redacted]

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www.visualflight.com

-----Original Message-----
From: FEIN, EDWARD K. (JSC-HA) (NASA) [redacted]

00111
~~~

Sent: Wednesday, September 01, 2004 11:19 AM
To: 'Mike Abernathy'
Subject: RE: US Patents 5566073 and 5904724

[redacted] (b)(5)

-Ed
-----Original Message-----
From: Mike Abernathy [redacted] (b)(6)
Sent: Wednesday, September 01, 2004 11:45 AM
To: FEIN, EDWARD K. (JSC-HA) (NASA)
Cc: DELGADO, FRANCISCO J. (FRANK) (JSC-ER2) (NASA)
Subject: RE: US Patents 5566073 and 5904724
Hi Ed,

Happy to keep you involved. I appreciated that article you sent me on the topic. The one thing that concerned me in the article is that I realized if Alan just sends the claims analysis to the PTO without requesting a re-exam then the owner will have the leisure to think up excuses for why this is not so, and prepare a defense maybe even ask for his own re-exam. Yikes! If NASA does not ask for the re-exam upon finding the prior art, we are basically strengthening his position to sue NASA by allowing him the time to synthesize a defense against the defects of his patent. It appears that Barry Gibbens is ready to press forward, happily.

Have I sent you the claims analysis yet?

Best regards,

Mike Abernathy
Rapid Imaging Software, Inc.
[redacted] (b)(6)

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www.visualflight.com

-----Original Message-----
From: FEIN, EDWARD K. (JSC-HA) (NASA) [redacted] (b)(6)
Sent: Wednesday, September 01, 2004 10:06 AM
To: 'Mike Abernathy'
Subject: RE: US Patents 5566073 and 5904724

Thanks, Mike, for keeping me in the loop.

-Ed
-----Original Message-----
From: Mike Abernathy [redacted] (b)(6)
Sent: Wednesday, September 01, 2004 10:33 AM
To: 'Kennedy, Alan'
Cc: 'Barry V. Gibbens, LaRC'; Dan Baize; 'Trey Arthur'; DELGADO, FRANCISCO J. (FRANK) (JSC-ER2) (NASA); FEIN, EDWARD K. (JSC-HA) (NASA); BOE, ERIC A., LTCOL. (JSC-CB) (NASA)
Subject: US Patents 5566073 and 5904724
Good Morning Alan,

[redacted] (b)(5)

Best regards,

Mike Abernathy
Rapid Imaging Software, Inc.
[redacted] (b)(6)

www.landform.com
www.visualflight.com

Claims Analysis of Patent.doc

~~~

Re: US Patents 5566073 and 5904724

From: Barry V. Gibbens, LaRC <[redacted]V>
To: Mike Abernathy <[redacted]>, 'Kennedy, Alan' <[redacted]ov>
CC: Linda B. Blackburn <[redacted]V>, Dan Baize <[redacted]ov>,
'Trey Arthur' <[redacted]v>, DELGADO FRANCISCO J. (FRANK)
[redacted], FEIN, EDWARD K. (JSC-HA) (NASA)
[redacted]>, Eric Boe[redacted]
Date: Sep 01 2004 - 11:29am

(b)(6)

Hi Alan (and others),

[redacted]

(b)(5)

Thanks,
Barry

At 09:33 AM 9/1/2004 -0600, Mike Abernathy wrote:

Good Morning Alan,

[redacted]
~~~

[redacted]

(b)(5)

Best regards,

Mike Abernathy

Rapid Imaging Software, Inc.

[redacted] (b)(6)

www.landform.com

HYPERLINK "http://www.visualflight.com/"www.visualflight.com

Barry V. Gibbens
NASA Langley Research Center
[redacted] (b)(6)

wwwebsite: http://tech-transfer.larc.nasa.gov/

NEW E-MAIL ADDRESS: Please note that effective immediately, my e-mail address is now [redacted]
Please update your mail systems accordingly. Thanks.

From: McNutt, Jan (HQ-MC000)
Sent: Wednesday, August 06, 2008 1:36 PM

To: Fein, Edward K. (JSC-AL)
Cc: Borda, Gary G. (HQ-MC000); Rotella, Robert F. (HQ-MA000)
Subject: Patent Infringement claim from Jed Margolin; NASA Case No. I-222

(b)(5) [redacted]

Thank you,

Jan S. McNutt
Attorney-Advisor (Commercial)
Office of the General Counsel
NASA Headquarters
[redacted]] (b)(6)

[redacted]

From: McNutt, Jan (HQ-MC000)
Sent: Monday, August 11, 2008 3:53 PM
To: Borda, Gary G. (HQ-MC000); Rotella, Robert F. (HQ-MA000)
Subject: FW: NASA FOIA HQ 08-270
Attachments: jm_nasa_foia_x.pdf

(b)(5)

[redacted]

-----Original Message-----
From: Jed Margolin [mailto:[redacted] (b)(6)
Sent: Friday, August 08, 2008 2:19 PM
To: McNutt, Jan (HQ-MC000)
Subject: Re: NASA FOIA HQ 08-270

Dear Mr. McNutt.

I will agree to the 90 day extension you have requested for NASA to respond to my FOIA Request (HQ 08-270) if NASA acknowledges that my FOIA request is entirely separate from Optima Technology Group's Claim Case No. I-222.

Please see attached letter.

Sincerely yours,

Jed Margolin

[redacted] (b)(6)

==========
----- Original Message -----
From: "McNutt, Jan (HQ-MC000)" <[redacted]v> (b)(6)
To: "Jed Margolin" [redacted]>
Sent: Wednesday, August 06, 2008 6:44 AM
Subject: RE: NASA Case I-222

Dear Mr. Margolin,

Please see the attached. Hard copy to follow.

Jan S. McNutt
Attorney-Advisor (Commercial)
Office of the General Counsel
NASA Headquarters
[redacted] (b)(6)

00139

[redacted] (b)(6)

This document, including any attachments, contains information may be confidential, protected by the attorney-client or other applicable privileges, or constitutes non-public information. All content is intended only for the designated recipient(s). If you are not an intended recipient of this information or have received this message inadvertently, please take appropriate steps to destroy this content in its entirety and notify the sender of its destruction. Use, dissemination, distribution, or reproduction of this information by unintended recipients or in a manner inconsistent with its provision is not authorized and may be unlawful.

-----Original Message-----
From: Jed Margolin [redacted] (b)(6)
Sent: Tuesday, August 05, 2008 1:56 PM
To: McNutt, Jan (HQ-MC000)
Subject: NASA Case I-222

Dear Mr. McNutt.

I have attached the documents we discussed.

Regards,

Jed Margolin

00139

(b)(5)

Jed Margolin
[redacted]

August 8, 2008

Mr. Jan S. McNutt
Office of the General Counsel
NASA Headquarters
Washington, DC 20546-0001

Re: FOIA Request (FOIA HQ 08-270) regarding NASA Case No. I-222

Dear Mr. McNutt,

As we discussed in our recent telephone conversations, my FOIA Request is entirely separate from NASA Claim Case I-222. The patents involved in the claim are now owned by Optima Technology Group, Inc. I trust that Optima Technology Group has now provided you with the documentation you requested in order to establish their ownership of the Patents.

I will agree to the 90 day extension you have requested for NASA to respond to my FOIA Request (HQ 08-270) if NASA acknowledges that my FOIA request is entirely separate from Optima Technology Group's Claim Case No. I-222.

Sincerely yours,

Jed Margolin

Jed Margolin

00140

[redacted]

From: McNutt, Jan (HQ-MC000)
Sent: Monday, August 11, 2008 4:39 PM
To: Rotella, Robert F. (HQ-MA000); Borda, Gary G. (HQ-MC000)
Subject: RE: NASA FOIA HQ 08-270

[redacted]

(b)(5)

-----Original Message-----
From: Rotella, Robert F. (HQ-MA000)
Sent: Monday, August 11, 2008 4:12 PM
To: McNutt, Jan (HQ-MC000); Borda, Gary G. (HQ-MC000)
Subject: Re: NASA FOIA HQ 08-270

[redacted]

(b)(5)

This Message was sent from my BlackBerry

----- Original Message -----
From: McNutt, Jan (HQ-MC000)
To: Borda, Gary G. (HQ-MC000); Rotella, Robert F. (HQ-MA000)
Sent: Mon Aug 11 14:53:23 2008
Subject: FW: NASA FOIA HQ 08-270

(b)(5)

[redacted]

-----Original Message-----
From: Jed Margolin [redacted] (b)(6)
Sent: Friday, August 08, 2008 2:19 PM
To: McNutt, Jan (HQ-MC000)
Subject: Re: NASA FOIA HQ 08-270

00142

Dear Mr. McNutt.

I will agree to the 90 day extension you have requested for NASA to respond to my FOIA Request (HQ 08-270) if NASA acknowledges that my FOIA request is entirely separate from Optima Technology Group's Claim Case No. I-222.

Please see attached letter.

Sincerely yours,

Jed Margolin
[redacted] (b)(6)

==========
----- Original Message -----
From: "McNutt, Jan (HQ-MC000)" [redacted] (b)(6)
To: "Jed Margolin" [redacted]
Sent: Wednesday, August 06, 2008 6:44 AM
Subject: RE: NASA Case I-222

Dear Mr. Margolin,

Please see the attached. Hard copy to follow.

Jan S. McNutt
Attorney-Advisor (Commercial)
Office of the General Counsel
NASA Headquarters
[redacted] (b)(6)

-----Original Message-----
From: Jed Margolin [redacted] (b)(6)
Sent: Tuesday, August 05, 2008 1:56 PM
To: McNutt, Jan (HQ-MC000)
Subject: NASA Case I-222

Dear Mr. McNutt.

I have attached the documents we discussed.

00144

Regards,

Jed Margolin

[redacted]

From: McNutt, Jan (HQ-MC000)
Sent: Monday, August 18, 2008 4:32 PM
To: Rotella, Robert F. (HQ-MA000)
Cc: Borda, Gary G. (HQ-MC000)
Subject: Letter to Optima

[redacted] (b)(5)

[redacted]

Jan S. McNutt
Attorney-Advisor (Commercial)
Office of the General Counsel
NASA Headquarters
[redacted] (b)(6)

Optima Letter
20080817.doc

August 20, 2008

Office of the General Counsel

Dr. Robert Adams, CEO
Optima Technology Group
[redacted] (b)(6)

RE: Administrative Claim for Infringement of U.S. Patent No. 5,904,724; NASA Case No. I-222

Dear Dr Adams:

This is to advise that I have been assigned the responsibility of evaluating the allegation that NASA has infringed U.S. Patent No. 5,904,724, as reflected in the above-identified administrative claim. You have provided me with a copy of an assignment from the inventor, Mr. Jed Margolin. Although this copy, dated 7/20/2004 is not notarized, it is recorded by the Patent and Trademark Office (PTO) with a recordation date of 12/21/2007. There are also four other assignments recorded with the PTO for this same patent, although one seems to be a correction. The recordation dates for three of these assignments precede the assignment recordation date of your claimed assignment, however, the dates of assignment are subsequent to your date of assignment. I have also received independent verification of your claim of ownership verbally (by telephone) from Mr. Margolin. Based on the above, although the verification of ownership appears far from certain based solely on the documentation, it would appear on its face that your claim of ownership of the patent is correct.

Because you are a new claimant, there is information that we will need in order to complete our analysis of the claim. These are:

1) The identification of all procurements known to the claimant or patent owner which involve the alleged infringing item or process, including the identity of the vendor or contractor and the Government procuring activity.

2) A detailed identification of the accused articles or processes, particularly where the article or process relates to a component or subcomponent of the item procured, and 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.

3) The names and addresses of all past and present licenses under the patent and copies of all license agreements and releases involving the patent.

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

5) A list of 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.

You should pay particular attention to item (2) which essentially calls for you to prepare what is commonly referred to as a "claim chart" that specifies each and every element of the affected claims and the correspondence on an element-by-element basis with the device that you are alleging that NASA has infringed.

Sincerely,

Jan S. McNutt
Attorney-Advisor

[redacted]

From: McNutt, Jan (HQ-MC000)
Sent: Tuesday, August 26, 2008 8:09 AM
To: Borda, Gary G. (HQ-MC000); Rotella, Robert F. (HQ-MA000)
Subject: FW: Jan S. McNutt, Please see the attached letter; it is your response to your most recent letter.
Attachments: [redacted]

[redacted] (b)(5)

[redacted]

From: Robert Adams-OTG [redacted] (b)(6)
Sent: Monday, August 25, 2008 6:48 PM
To: McNutt, Jan (HQ-MC000); [redacted]
Subject: Jan S. McNutt, Please see the attached letter; it is your response to your most recent letter.

Sent via U.S. Mail with tracking number

Jan S. McNutt,

Please see the attached letter; it is your response to your most recent letter.

Thank you,

Dr. Robert Adams – CEO
Optima Technology Group
[redacted] (b)(6)

00193

OPTIMA
TECHNOLOGY GROUP

Main Office
Finance & Operation
[redacted] (b)(6)

August 25, 2008

Jan S. McNutt
Attorney-Advisor (Commercial)
Office of the General Counsel
NASA Headquarters, Suite 9T11
300 E Street, SW
Washington, DC 20546-0001

Attn.: GP 02-37016

RE: Case number I-222

Sir,

Thank you for your response despite the month's delay. May I note that the patents and ownership and all active claim(s) had been transferred to our company and you have erred, as a matter of law, when you state that this would be a new claim; as it is not, sir. Due to no fault of ours, it is NASA who has not returned our letters or calls for years regarding this claim, let alone followed up with us until recently. We do not see how your personnel problems are our problem, and the court will most assuredly side with us on this matter.

The "positions" you have stated are not sustainable in any context and could well violate the standards of Rule 11 in the context of litigation. All the information requested in your letter dated August 20 2008 was provided to NASA and Mr. Kennedy over the last 5-6 years. Please see the attached as I am sure it will refresh your memory. Mr. Kennedy's promise to Mr. Margolin in 2003 that an investigation would be conducted indicates that the information Mr. Margolin provided to NASA was sufficient to establish the claim.

We have offered you a fair settlement time period and yet you decide to waste time in an attempt to hide your clear infringement. We would welcome the opportunity to properly discuss a reasonable settlement either directly or through our Intellectual Property attorney Larry Oliverio of Rissman, Jobse, Hendricks & Oliverio who can be reached at [redacted] (b)(6)

Respectfully,

Robert Adams
CEO, Optima Technology Group

00193

Reference 1 (1 Page)

National Aeronautics and
Space Administration

Langley Research Center
100 NASA Road
Hampton, VA 23681-2199

May 14, 2003

Reply to Attn of: 212

Jed Margolin
[redacted] (b)(6)

Subject: Infringement Inquiry

Dear Mr. Margolin,

I received notice of your belief that NASA may have infringed one or more of your U.S. patents. In order to address your concerns, we need to receive some more detailed information. Please provide the titles and patent numbers of any patents you feel NASA may have infringed. Please also provide a description of any actions by NASA leading to your belief of possible infringement. Finally, please specify in detail how those actions constitute infringement of your patent(s). This information will allow us to evaluate your assertion and respond and/or react appropriately. Thanks for contacting us. I look forward to hearing from you soon, and discussing your concerns further.

Cordially,

Barry V. Gibbens
Patent Attorney
Technology Commercialization
Program Office

{00009174:1}

(b)(6) 1 **Reference 2 (4 Pages)**

Jed Margolin
[redacted]
[redacted]
[redacted]

May 18, 2003

Mr. Barry V. Gibbens
National Aeronautics and Space Administration
Langley Research Center
[redacted] (b)(6)
[redacted]

Dear Mr. Gibbens,

This is in response to your letter dated May 14, 2003.

As we discussed in our telephone conversation on May 16, the information you have requested was supplied in my email to Mr. Kurt Hammerle on May 12, 2003.

After I emailed my inquiry to Mr. Jesse Midgett on May 12, I discovered the web page for the Patent Counsel Office and contacted Mr. Hammerle by telephone.

I apologize for any confusion this may have created.

As a result of more searching I have discovered a link to a Johnson Space Center SBIR Phase II award to Rapid Imaging Software at http://sbir.gsfc.nasa.gov/SBIR/successes/ss/9-058text.html .

It includes a particularly relevant paragraph:

> *The Advanced Flight Visualization Toolkit (VisualFlight™) project is developing a suite of virtual reality immersive telepresence software tools which combine the real-time flight simulation abilities with the data density of a Geographic Information System (GIS). This technology is used for virtual reality training of crews, analysis of flight test data, and as an on-board immersive situation display. It will also find application as a virtual cockpit, and in teleoperation of remotely piloted vehicles.*

{ The emphasis on teleoperation of remotely piloted vehicles is mine.)

A search of the SBIR archive shows the following entries.

For 2001 Phase I:

Rapid Imaging Software, Inc.
1318 Ridgecrest Place S.E.
Albuquerque, NM 87108-5136
Mike Abernathy ([redacted] (b)(6)
01 H6.02-8715 JSC
Integrated Video for Synthetic Vision Systems

For 2001 Phase II:

Rapid Imaging Software, Inc.
[redacted] (b)(6)
Carolyn Galceran [redacted]
01-2-H6.02-8715 JSC
Integrated Video for Synthetic Vision Systems

If there is any additional information regarding my patents that you would find helpful please let me know.

Sincerely yours,

Jed Margolin

Jed Margolin

NASA SBIR SUCCESSES

Johnson Space Center
1998 Phase II

LandForm VisualFlight™

Rapid Imaging Software, Inc.

Alberqueque, NM

Optional Powerpoint file

INNOVATION

LandForm VisualFlight™ is the power of a geographic information system (GIS) and the speed of a flight simulator, accessible from any Windows application.

ACCOMPLISHMENTS

- The Advanced Flight Visualization Toolkit (VisualFlight™) project is developing a suite of virtual reality immersive telepresence software tools which combine the real-time flight simulation abilities with the data density of a Geographic Information System (GIS). This technology is used for virtual reality training of crews, analysis of flight test data, and as an on-board immersive situation display. It will also find application as a virtual cockpit, and in teleoperation of remotely piloted vehicles.
- AFVT will enhance the ability of analysts and operators to interact with large amounts of multidimensional data using the most natural paradigm available: 3D immersion. This operator/data interaction technology will be an advancement comparable to the invention of the Heads-Up Display (HUD). AFVT will move the HUD into the third dimension.
- A simplified user interface, it will fuse real-time 3D displays of terrain with digital maps, satellite data, vehicles, flight paths, and waypoints. This unique and innovative approach will build upon recent software technology research and development from Rapid Imaging Software. VisualFlight™ permits users to construct and deploy their own immersive multidimensional display applications on Windows-based computer platforms.

COMMERCIALIZATION

- VisualFlight™ is sold as a development kit starting with 5 run-time licenses. Users who wish to distribute more applications

GOVERNMENT/SCIENCE APPLICATIONS

- The firm's VisualFlight™ System was used to fly the X-38 on it's latest test flight. The flight vehicle was piloted by astronaut (Ken Ham) using LandForm VisualFlight

using LandForm VisualFlight™ technology can purchase additional run-time licenses as needed.

- VisualFlight™ 1.0 has been available to qualified users for several months now, and the response is excellent. VisualFlight™ has been deployed to display live real-time flight data broadcast over a network. Please visit this page for the latest VisualFlight™ developments.
- **LandForm V/O Video Overlay** plug-in for LandForm C3 or Flight Vision is available for the Matrox Corona board only. The price is $4995 for a # single users license. Site license is available for $6995.

For more information about this firm, please send e-mail to: company representative

system as his digital cockpit window.

Return to NASA SBIR Success Listings

Curator: SBIR Support

(b)(6)

Reference 3 (13 pages)

1

Jed Margolin

[redacted]

June 7, 2003

Mr. Alan J. Kennedy
Office of the General Counsel
National Aeronautics and Space Administration
[redacted]

(b)(6)

Dear Mr. Kennedy,

Mr. Barry Gibbens of your Langley Research Center suggested I contact you. I missed you when I called on Friday so I am sending this fax to provide background.

I believe that NASA may have used one or more of my patents in connection with the X-38 project and may be using one or more of my patents in other projects using Synthetic Vision.

This fax contains a number of Internet links. If you would like an email version of this fax containing active links please send me an email (jm@jmargolin.com) with your email address.

Summary

In Synthetic Vision (NASA's term), the aircraft's position and orientation are used with a terrain database (such as the Digital Elevation Database) to produce a 3D projected view of the terrain over which the aircraft is flying. One of the advantages of this system is that the pilot is able to "see" the terrain regardless of weather conditions or whether it is day or night.

My U.S. Patent that pertains to this use of synthetic vision is: **U.S. Patent 5,566,073 Pilot Aid Using a Synthetic Environment** issued October 15, 1996 to Margolin. (I am the inventor and owner of the patent.) The patent application was filed August 9, 1995, and was a continuation of Application Ser. No. 08/274,394, filed July 11, 1994.

With synthetic vision it is not necessary for the pilot to be in the aircraft. I believe the X-38 project used this method.

My U.S. Patent that pertains to this use of synthetic vision is: **U.S. Patent 5,904,724 Method and Apparatus For Remotely Piloting an Aircraft** issued May 18, 1999 to Margolin. (I am the inventor and owner of the patent.) The patent application was filed January 19, 1996.

X-38 Project

I became aware that NASA was using synthetic vision in the X-38 project in the January 2003 issue of NASA Tech Briefs, page 40, **"Virtual Cockpit Window" for a Windowless Aerospacecraft**. The article is available at: http://www.nasatech.com/Briefs/Jan03/MSC23096.html

This led me to Rapid Imaging Software, Inc. and their press release (http://www.landform.com/pages/PressReleases.htm) which states:

> *"On December 13th, 2001, Astronaut Ken Ham successfully flew the X-38 from a remote cockpit using LandForm VisualFlight as his primary situation awareness display in a flight test at Edwards Air Force Base, California. This simulates conditions of a real flight for the windowless spacecraft, which will eventually become NASA's Crew Return Vehicle for the ISS. We believe that this is the first test of a hybrid synthetic vision system which combines nose camera video with a LandForm synthetic vision display. Described by astronauts as 'the best seat in the house', the system will ultimately make space travel safer by providing situation awareness during the landing phase of flight."*

The RIS press release provided a link to an article in Aviation Week & Space Technology: http://www.aviationnow.com/avnow/news/channel_space.jsp?view=story&id=news/sx381211.xml

As a result of more searching I have discovered a link to a Johnson Space Center SBIR Phase II award to Rapid Imaging Systems at http://sbir.gsfc.nasa.gov/SBIR/successes/ss/9-058text.html .

It includes a particularly relevant paragraph:

> *The Advanced Flight Visualization Toolkit (VisualFlight™) project is developing a suite of virtual reality immersive telepresence software tools which combine the real-time flight simulation abilities with the data density of a Geographic Information System (GIS). This technology is used for virtual reality training of crews, analysis of flight test data, and as an on-board immersive situation display. It will also find application as a virtual cockpit, and in teleoperation of remotely piloted vehicles.*
>
> {The emphasis on teleoperation of remotely piloted vehicles is mine.}

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For 2001 Phase I:
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01 H6.02-8715 JSC
Integrated Video for Synthetic Vision Systems

For 2001 Phase II:
Rapid Imaging Software, Inc.
[redacted] (b)(6)

Carolyn Galceran [redacted] (b)(6) 3
01-2-H6.02-8715 JSC
Integrated Video for Synthetic Vision Systems

My U.S. Patent that pertains to this use of synthetic vision is: **U.S. Patent 5,904,724 Method and Apparatus For Remotely Piloting an Aircraft** issued May 18, 1999 to Margolin. (I am the inventor and owner of the patent.) The patent application was filed January 19, 1996.

The patent can be downloaded from the UPTO Web site (www.uspto.gov) in html (no drawings) or in an odd tif format (with the drawings) that requires a special viewer.

An easier way to view and download the patent is through my Web site, on which I have posted the patent in PDF format. The link is http://www.jmargolin.com/patents2/rpv.htm .

While I have no way of knowing exactly what method(s) NASA used in controlling the X-38 (unless you are willing to make a full disclosure) my patent covers techniques as exemplified by claim 1.

1. A system comprising:

a remotely piloted aircraft including,

a position determining system to locate said remotely piloted aircraft's position in three dimensions; and

an orientation determining system for determining said remotely piloted aircraft's orientation in three dimensional space;

a communications system for communicating flight data between a computer and said remotely piloted aircraft, said flight data including said remotely piloted aircraft's position and orientation, said flight data also including flight control information for controlling said remotely piloted aircraft;

a digital database comprising terrain data;

said computer to access said terrain data according to said remotely piloted aircraft's position and to transform said terrain data to provide three dimensional projected image data according to said remotely piloted aircraft's orientation;

a display for displaying said three dimensional projected image data; and

a set of one or more remote flight controls coupled to said computer for inputting said flight control information, wherein said computer is also for determining a delay time for communicating said flight data between said computer and said remotely piloted aircraft, and wherein said computer adjusts the sensitivity of said set of one or more remote flight controls based on said delay time.

Although the X-38 project has been canceled, the methods developed to fly it are too good to waste and should be used in follow-up projects like CRV.

Synthetic Vision

I became aware of NASA's Synthetic Vision program perhaps two years ago from a program on NASA TV. I was unable to follow it up at that time due to health problems and the demands of my other patenting activity.

According to the NASA Aviation Safety Program Web site (http://avsp.larc.nasa.gov/program_svs.html)

Synthetic Vision Systems

TECHNOLOGY WOULD REDUCE AIRLINE FATALITIES
Synthetic Vision would give pilots clear skies all the time

A revolutionary cockpit display system being developed with seed money from NASA would help prevent the world's deadliest aviation accidents.

And I agree.

My U.S. Patent that pertains to this use of synthetic vision is: **U.S. Patent 5,566,073 Pilot Aid Using a Synthetic Environment** issued October 15, 1996 to Margolin. (I am the inventor and owner of the patent.) The patent application was filed August 9, 1995, and was a continuation of Application Ser. No. 08/274,394, filed July 11, 1994.

The patent can be downloaded from the USPTO Web site (www.uspto.gov) in html (no drawings) or in an odd tif format (with the drawings) that requires a special viewer.

The patent can also be downloaded from my Web site in PDF format at:
http://www.jmargolin.com/patents2/pilot.htm

As with the X-38 program I have no way of knowing exactly what method(s) NASA used in its Synthetic Vision program (unless you are willing to make a full disclosure). My patent covers techniques as exemplified by claim 1.

> *1. A pilot aid which uses an aircraft's position and attitude to transform data from a digital data base to present a pilot with a synthesized three dimensional projected view of the world comprising:*
>
> *a position determining system for locating said aircraft's position in three dimensions;*
>
> *a digital data base comprising terrain data, said terrain data representing real terrestrial terrain as at least one polygon, said terrain data generated from elevation data of said real terrestrial terrain;*
>
> *an attitude determining system for determining said aircraft's orientation in three dimensional space;*
>
> *a computer to access said terrain data according to said aircraft's position and to transform said terrain data to provide three dimensional projected image data according to said aircraft's orientation; and*
>
> *a display for displaying said three dimensional projected image data.*

NASA's Visits to My Web Site

There is good reason to believe that NASA was aware of my work in these areas through visits to my Web site. NASA has been visiting my Web site (www.jmargolin.com) regularly since I started it in December 2000. (I have no objection to NASA's visits; I am flattered that NASA considers my Web site worth visiting.)

A listing of NASA access statistics follows the end of this fax.

I also have regular visits from http://cap.nipr.mil, which I understand is a secure gateway to other military networks. I don't know if NASA uses nipr so I have not included it in my listing.

The Web Statistics software provided by my Web Hosting Service tell me who is visiting my Web site and what people are looking at but not who is looking at what, (In January of this year I discovered there are raw Web log files containing this information but my Web Hosting Service does not keep backup log files older than the previous month.)

I am including an example of the detailed Web log data; it's understandable why my Web Hosting Service abstracts it into a less detailed form.

The article being referenced is **Unit Vector Math for 3D Graphics**
(www.jmargolin.com/uvmath/uvmenu.htm)

Now that I can see what people are looking at I have noticed a great deal of interest in this article as well as **The Relationship between Unit Vector Rotations and Euler Angle Functions** .
(www.jmargolin.com/uvmath/euler.doc)

These articles also seem to interest military contractors like Lockheed Martin (lmco.com), Boeing (boeing.com), Northrop Grumman (northgrum.com), and SAIC (saic.hq.nasa.gov) as well as a large number of educational institutions.

Some accesses are obviously just for fun, to articles such as to **Gas Music From Jupiter**
(www.jmargolin.com/gmfj/gmfj.htm)

There are also visits from most of our national labs. I expect they are interested in **U.S. Patent 6,377,436 Microwave Transmission Using a Laser-Generated Plasma Beam Waveguide** issued April 23, 2002 to Jed Margolin.

Abstract

A directed energy beam system uses an ultra-fast laser system, such as one using a titanium-sapphire infrared laser, to produce a thin ionizing beam through the atmosphere. The beam is moved in either a circular or rectangular fashion to produce a conductive shell to act as a waveguide for microwave energy. Because the waveguide is produced by a plasma it is called a plasma beam waveguide. The directed energy beam system can be used as a weapon, to provide power to an unmanned aerial vehicle (UAV) such as for providing communications in a cellular telephone system, or as an ultra-precise radar system.

There is a possibility that this device could be used to make a linear Tokamak.
(www.jmargolin.com/debs/debs.htm)

Conclusion

I realize this is a great deal of material to wade through, but I would appreciate confirmation that you have received it and, if possible, an estimate as to when I can expect to hear NASA's decision on this claim.

Hopefully, then we can discuss compensation. The '724 patent is available for sale if NASA wishes to purchase it to avoid setting the precedent of the U.S. Government paying compensation for each flight of an aircraft using my patent. (I don't think this would be popular with DOD.) I expect that the first UAV to crash due to Pilot Induced Oscillation (or just Flight Computer Induced Oscillation, as occurred in the first flight of the Predator) would cost more than the cost of buying my patent. I believe this patent also has commercial applications like using UAVs for traffic reporting and in Law Enforcement so your Commercialization Department may be able to generate income with it.

Sincerely yours,

Jed Margolin

Jed Margolin
3570 Pleasant Echo Rd.
San Jose, CA 95148-1916
Phone: 408-238-4564
Email: jm@jmargolin.com

Here are NASA's visits to my Web site:

June 2001
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
2	0.02%	1	2	73232	0.02%	dhcp161-117.hst.nasa.gov

July 2001
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
24	0.27%	24	1	216909	0.08%	aavigil1.wff.nasa.gov
1	0.01%	1	1	96274	0.04%	antonius-dekorte-pc.jpl.nasa.gov
25	0.28%	25	2	313183	0.11%	

August 2001
nasa.gov

Total hits	Files	Pageview	Bytes sent	Hostname

40	0.38%	40	1	184514	0.06%	time2burn.larc.nasa.gov
24	0.23%	24	1	216909	0.07%	gerhard.gsfc.nasa.gov
64	0.61%	64	2	401423	0.12%	

October 2001
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
1	0.01%	1	1	549657	0.11%	halljm.nsstc.nasa.gov

November 2001
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
48	0.39%	24	2	216909	0.06%	aavigil1.wff.nasa.gov
42	0.34%	42	1	532111	0.14%	mac01291100705.jpl.nasa.gov
1	0.01%	1	1	21505	0.01%	dhcp-78-14-233.jpl.nasa.gov
91	0.73%	67	4	770525	0.21%	

December 2001
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
1	0.01%	1	1	90494	0.01%	pgrant.arc.nasa.gov

February 2002
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
1	0.01%	1	0	120832	0.03%	csmad-nt-23.jpl.nasa.gov
1	0.01%	1	1	504805	0.11%	cielo2k.jpl.nasa.gov
2	0.01%	2	1	625637	0.13%	

March 2002
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
58	0.35%	45	5	319389	0.05%	fantasy.arc.nasa.gov
6	0.04%	5	4	1299302	0.22%	fryepc.larc.nasa.gov
1	0.01%	1	0	120832	0.02%	shum.larc.nasa.gov

65	0.39%	51	9	1739523	0.29%	

April 2002
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
40	0.23%	40	1	184514	0.03%	cevennes.jpl.nasa.gov
7	0.04%	7	2	45302	0.01%	doppler.jpl.nasa.gov
1	0.01%	1	1	5735	0.00%	math.jpl.nasa.gov
1	0.01%	1	0	120832	0.02%	k-137-78-152-182.jpl.nasa.gov
49	0.29%	49	4	356383	0.06%	

May 2002
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
4	0.02%	0	0	0	0.00%	k1505776.ksc.nasa.gov
1	0.00%	1	0	120832	0.02%	manzanita-227-215.arc.nasa.gov
1	0.00%	1	1	96274	0.02%	seraph3.lerc.nasa.gov
6	0.03%	2	1	217106	0.03%	

June 2002
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
3	0.02%	1	1	96694	0.02%	micronovich.gsfc.nasa.gov

July 2002
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
43	0.19%	43	4	190275	0.03%	seraph3.lerc.nasa.gov
42	0.19%	42	3	189552	0.03%	varies01113104503.jpl.nasa.gov
2	0.01%	2	2	7802	0.00%	paulafinlayson-pc-pentium.jpl.nasa.gov
1	0.00%	1	1	350096	0.06%	brodbell1.gsfc.nasa.gov
1	0.00%	1	1	93686	0.02%	poes12.gsfc.nasa.gov
89	0.39%	89	11	831411	0.14%	

August 2002
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
24	0.11%	24	1	216909	0.03%	envision.arc.nasa.gov

1	0.00%	1	1	90494	0.01%	pc02141110149.jpl.nasa.gov
1	0.00%	1	1	142144	0.02%	tizzie.nsstc.nasa.gov
26	0.12%	26	3	449547	0.06%	

September 2002
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
5	0.02%	1	0	121528	0.02%	knepper.ivv.nasa.gov
1	0.00%	1	0	285696	0.04%	seraph2.lerc.nasa.gov
1	0.00%	1	0	120832	0.02%	webproxy2.dfrc.nasa.gov
7	0.03%	3	0	528056	0.08%	

October 2002
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
98	0.45%	98	14	827297	0.11%	dial37.jsc.nasa.gov
1	0.00%	1	1	49690	0.01%	isdn-dial-050.gsfc.nasa.gov
1	0.00%	1	0	120832	0.02%	latema.jpl.nasa.gov
1	0.00%	1	0	285696	0.04%	dkiewicz-pc.jpl.nasa.gov
101	0.47%	101	15	1283515	0.16%	

November 2002
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
27	0.12%	25	1	506284	0.06%	ntserve.gdscc.nasa.gov
7	0.03%	7	2	45342	0.01%	ecn1950165.gsfc.nasa.gov
2	0.01%	2	2	1155686	0.15%	zebra.arc.nasa.gov
1	0.00%	1	1	350096	0.04%	norton.gsfc.nasa.gov
37	0.17%	35	6	2057408	0.26%	

December 2002
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
7	0.03%	7	2	45269	0.01%	ws196.gsfc.nasa.gov

January 2003
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname

2	0.01%	2	2	29129	0.00%	csg- 686.cdscc.nasa.gov

February 2003
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
2	0.01%	2	2	29138	0.00%	odinssc609337.ssc.nasa.gov

April 2003
nasa.gov

Total hits		Files	Pageview	Bytes sent		Hostname
40	0.17%	40	1	184514	0.02%	khgmac.larc.nasa.gov
8	0.03%	5	4	40212	0.00%	kid-emillerw2k.saic.hq.nasa.gov
5	0.02%	1	0	121528	0.01%	psycho.larc.nasa.gov
4	0.02%	3	3	63471	0.01%	b03042144127.jpl.nasa.gov
3	0.01%	3	3	29881	0.00%	seraph2.grc.nasa.gov
60	0.25%	52	11	439606	0.05%	

Example of Detailed Web Log Data

This is an example of the detailed Web log data, so it's understandable why my Web Hosting Service abstracts it into a less detailed form.

The article being referenced is Unit Vector Math for 3D Graphics (www.jmargolin.com/uvmath/uvmenu.htm)

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khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/fig1.gif HTTP/1.1" 200 2590 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m1.gif HTTP/1.1" 200 2237 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m2.gif HTTP/1.1" 200 1464 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m3.gif HTTP/1.1" 200 715 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m4.gif HTTP/1.1" 200 1720 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m5.gif HTTP/1.1" 200 1738 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m7.gif HTTP/1.1" 200 1549 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m8.gif HTTP/1.1" 200 1939 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m6.gif HTTP/1.1" 200 1762 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m9.gif HTTP/1.1" 200 4152 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m10.gif HTTP/1.1" 200 2732 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m11.gif HTTP/1.1" 200 2572 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m12.gif HTTP/1.1" 200 2580 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m13.gif HTTP/1.1" 200 3915 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m14.gif HTTP/1.1" 200 2591 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m15.gif HTTP/1.1" 200 2224 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m16.gif HTTP/1.1" 200 1858 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m17.gif HTTP/1.1" 200 1742 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m18.gif HTTP/1.1" 200 2642 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m19.gif HTTP/1.1" 200 1738 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m20.gif HTTP/1.1" 200 1762 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:14 -0500] "GET /uvmath/m21.gif HTTP/1.1" 200 1696 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/m22.gif HTTP/1.1" 200 2224 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/m23.gif HTTP/1.1" 200 1858 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/m24.gif HTTP/1.1" 200 1711 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/fig6.gif HTTP/1.1" 200 3304 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/fig7.gif HTTP/1.1" 200 995 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/fig8.gif HTTP/1.1" 200 4441 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/fig11.gif HTTP/1.1" 200 3186 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/fig12.gif HTTP/1.1" 200 3743 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/fig14.gif HTTP/1.1" 200 1936 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/fig16.jpg HTTP/1.1" 200 61706 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/m25.gif HTTP/1.1" 200 1358 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/m26.gif HTTP/1.1" 200 1413 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/m27.gif HTTP/1.1" 200 1052 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/m28.gif HTTP/1.1" 200 1017 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/m29.gif HTTP/1.1" 200 1673 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:15 -0500] "GET /uvmath/m30.gif HTTP/1.1" 200 2224 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:24 -0500] "GET /uvmath/uvmath.htm HTTP/1.1" 200 40231 "http://www.google.com/search?q=+%22euler+angle%22+normal+openGL&hl=en&lr=&ie=UTF-8&oe=UTF-8&start=10&sa=N" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

khgmac.larc.nasa.gov - - [01/Apr/2003:09:32:24 -0500] "GET /uvmath/fig3.gif HTTP/1.1" 200 2524 "http://www.jmargolin.com/uvmath/uvmath.htm" "Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Q312461; .NET CLR 1.0.3705)"

---end

National Aeronautics and
Space Administration

Headquarters
Washington, DC 20546-0001

Reference 4 (2 pages)

June 11, 2003

Reply to Attn of: GP (02-37016)

Mr. Jed Margolin
[redacted] (b)(6)

Re: Administrative Claim of Jed Margolin for Infringement of
U.S. Patent Nos. 5,566,073 and 5,904,724; NASA Case No. I-222

Dear Mr. Margolin:

Thank you for your letter dated June 7, 2003 regarding possible unauthorized uses by NASA of inventions protected by U.S. Patent Nos. 5,566,073 and 5,904,724. You have identified possible unauthorized uses in the X-38 project and other projects involving synthetic vision technology. NASA considers this matter to be an administrative claim for patent infringement, and has assigned the claim NASA Case No. I-222. An investigation will now be conducted to identify any unauthorized uses of the inventions claimed in the subject patents. In order to proceed further with this investigation, we need you to provide us with the following information:

(1) The identification of all claims of the patent(s) alleged to be infringed.

(2) The identification of all procurements known to the claimant or patent owner 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 articles or processes, 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) The names and addresses of all past and present licenses under the patent(s), and copies of all license agreements and releases involving the patent.

(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 the 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 to 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.

If you have any questions, please feel free to contact me on [redacted]
(b)(6)

Cordially,

Alan J. Kennedy
Director, Infringement Division
Office of the Associate General Counsel
(Intellectual Property)

(b)(6)

Reference 5 (14 pages)

1

Jed Margolin
[redacted]

June 17, 2003

Mr. Alan J. Kennedy
Director, Infringement Division
Office of the Associate General Counsel
National Aeronautics and Space Administration
Headquarters
[redacted] (b)(6)

Attn: GP(02-37016)

Dear Mr. Kennedy,

I have received your letter dated June 11, 2003.

In my contacts with NASA personnel I have repeatedly stressed my desire that this matter be resolved in a friendly manner. However, since NASA has rejected my request to consider a license proffer and in view of your letter of June 11, it is clear that NASA has decided to handle this in an adversarial manner.

Before I respond to your letter in detail, I want to make things easier for me by withdrawing my U.S. Patent **5,566,073** ***Pilot Aid Using a Synthetic Environment*** from this administrative claim in order to focus more directly on NASA's infringement of my U.S. Patent **5,904,724** ***Method and Apparatus For Remotely Piloting an Aircraft*** . However, I reserve the right to file a claim concerning the '073 patent at a later time.

(1) The identification of all claims of the patent(s) alleged to be infringed.

As I stated in my email of May 13, 2003 to Mr. Hammerle of LARC and in my fax of June 7, 2003 to you, I have no way of determining exactly which claims the X-38 project may have infringed unless NASA makes a full and complete disclosure to me of that project. I also have no way of determining if NASA has (or has had) other projects that also infringe on my patent unless NASA makes a full and complete disclosure of those projects as well.

Therefore, in order to answer your question, I must request that NASA make a full and complete disclosure to me of the X-38 project as well as any other current or past projects that may infringe on my patent.

If this information requires a security clearance (I have none) I suggest you start the required security investigation immediately. If there is further information that you require in this regard feel free to contact me.

00210

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

As I stated in my fax to you of June 7, 2003, I became aware that NASA was using synthetic vision in the X-38 project in the January 2003 issue of NASA Tech Briefs, page 40, **"Virtual Cockpit Window" for a Windowless Aerospacecraft**. The article is available at: http://www.nasatech.com/Briefs/Jan03/MSC23096.html

This led me to Rapid Imaging Software, Inc. and their press release (http://www.landform.com/pages/PressReleases.htm) which states:

> *"On December 13th, 2001, Astronaut Ken Ham successfully flew the X-38 from a remote cockpit using LandForm VisualFlight as his primary situation awareness display in a flight test at Edwards Air Force Base, California. This simulates conditions of a real flight for the windowless spacecraft, which will eventually become NASA's Crew Return Vehicle for the ISS. We believe that this is the first test of a hybrid synthetic vision system which combines nose camera video with a LandForm synthetic vision display. Described by astronauts as 'the best seat in the house', the system will ultimately make space travel safer by providing situation awareness during the landing phase of flight."*

The RIS press release provided a link to an article in *Aviation Week & Space Technology*: http://www.aviationnow.com/avnow/news/channel_space.jsp?view=story&id=news/sx381211.xml

As a result of more searching I discovered a link to a Johnson Space Center SBIR Phase II award to Rapid Imaging Systems at http://sbir.gsfc.nasa.gov/SBIR/successes/ss/9-058text.html .

It includes a particularly relevant paragraph:

> *The Advanced Flight Visualization Toolkit (VisualFlight™) project is developing a suite of virtual reality immersive telepresence software tools which combine the real-time flight simulation abilities with the data density of a Geographic Information System (GIS). This technology is used for virtual reality training of crews, analysis of flight test data, and as an on-board immersive situation display. It will also find application as a virtual cockpit, and in teleoperation of remotely piloted vehicles.*

The emphasis on *virtual reality immersive telepresence* and *teleoperation of remotely piloted vehicles* is mine.

A search of the SBIR archive shows the following entries.

For 2001 Phase I:
Rapid Imaging Software, Inc.
[redacted] (b)(6)
[redacted]
Mike Abernathy [redacted]
01 H6.02-8715 JSC
Integrated Video for Synthetic Vision Systems

For 2001 Phase II:
Rapid Imaging Software, Inc.
[redacted] (b)(6)
Carolyn Galceran [redacted]
01-2-H6.02-8715 JSC

Since my sources of information are limited to those available to the public (magazines such as *Aviation Week & Space Technology* as well as whatever I can find on the Internet) I have no way of knowing if there are other procurements, vendors, contractors, and Government procuring activity related to Claim I-222.

I believe that NASA is in a better position to know what it is (or has been) working on than I am.

(3) A detailed identification of the accused articles or processes, 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.

I believe I have answered this in section (2) as much as I am able to without NASA's cooperation.

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

There are no past licenses for this patent, and as of this date there are no present licenses for this patent. Naturally, I reserve the right to license this patent in the future as I see fit.

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

There has been no past litigation involving this patent, and as of this date there is no present litigation regarding this patent.

(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.

As of this date NASA is the only agency or department of the Government against which I have filed a claim.

5/11/03 – sent email to comments@hq.nasa.gov

I believe that NASA may have infringed on one or more of my U.S. Patents.
How do I file a claim and whom do I contact?

5/11/03 – Received reply:

Date: Sun, 11 May 2003 17:48:46 -0400 (EDT)
From: "PAO Comments" <comments@bolg.public.hq.nasa.gov>
Message-ID: <200305112148.h4BLmkhJ011314@bolg.public.hq.nasa.gov>
To: <jm@jmargolin.com>
Subject: Thank you for your email.

Thank you for your message to the NASA Home Page. The Internet Service Group will attempt to answer all e-mail regarding the site, but cannot guarantee a response by a particular time. The group will not be able to answer general inquiries regarding NASA, which should instead be sent to public-inquiries@hq.nasa.gov

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5/11/03 – Sent email to <public-inquiries@hq.nasa.gov>

I believe that NASA may have infringed on one or more of my U.S. Patents.
How do I file a claim and whom do I contact?

Jed Margolin

As far as I can tell I did not receive a response. (b)(6)

5/12/03 – Sent email to [redacted]v (found on Web site)

I believe that NASA may have infringed on one or more of my U.S. Patents
How do I file a claim and whom do I contact?
(Or is my only recourse to sue in Federal Court?)

Jed Margolin

5/12/03 – Received reply:

Mr. Margolin,

Thank you for contacting NASA with your concerns. I have referred this matter to the Patent Counsel Office, and they will be contacting you to work with you on this issue.

Best wishes,
Jesse Midgett

5/12/03 – Given my experience with trying to contact Government officials via email (or mail, or fax) I hadn't waited for the reply from J. Midgett. I had found the web site for the LARC (NASA Langley) Patent Counsel Office, and called up. I was connected to Kurt Hammerle and we had a nice talk. I sent him an email the next day (May 13, 2003).

I received a phone call from Barry Gibbens [redacted] who, apparently, was calling because of my email to to J.C.Midgett and hadn't seen the email I sent to K. Hammerle. (I explained to him what I had done.) We had a nice talk. He said he had already sent me a letter. (b)(6)

I received his letter and sent a reply on May 18, 2003 (USPS), adding to the email I had sent K. Hammerle.

Thursday, June 5, 2003 – Received message from B. Gibbens, asking me to call him because I should contact Alan Kennedy at NASA Headquarters [redacted]. (b)(6)

Friday, June 6, 2003 - I called B. Gibbens. Then I called A. Kennedy but he was out.

Saturday, June 7, 2003 – Sent a fax to A. Kennedy. The first number I tried ([redacted]) only accepted 4 pages (out of 13). I tried a few times. Then I tried [redacted] It turned out that 4341 was the correct number and that 2741 was another group. As a result, A. Kennedy initially only got 4 pages. (b)(6)

Monday, June 9, 2003 – Received message from A. Kennedy and called him back.

He had not gotten the fax so he went and found it. I learned the next day that he had only gotten 4 pages.

We had a "free and frank" discussion. I stressed that I wanted to resolve it in a friendly manner and that I preferred to have NASA buy the patent for the Government.

Tuesday, June 10, 2003 – Received a message from A. Kennedy and called him back.

He said that his Manager has turned down my request that NASA consider a license proffer and has decided to handle it as a Claim, and that the investigation would take 3-6 months.

However, NASA is not the only agency or department of the Government I have contacted.

7/5/1999 Email to: lbirckelbaw@darpa.mil
Dr. Birckelbaw, Project Manager for the UCAV contract awarded to Boeing.

Introduced myself and asked if DARPA was interested in my patent.
Response: none

7/26/1999 USPS Mail to:

Dr. Larry Birckelbaw
Program Manager, Aerospace Systems
DARPA Tactical Technology Office
3701 North Fairfax Drive
Arlington, VA 22203-1714

Introduced myself and asked if DARPA was interested in my patent. Enclosed copy of patent.
Response: none

Office of the Secretary of Defense (OSD)

Mr. E.C. "Pete" Aldridge
Under Secretary of Defense for Acquisition, Technology, and Logistics
U.S. Department of Defense
Contact Method: Email: webmaster@acq.osd.mil May 3, 2002 and June 6, 2002
Response: none

Army - AATD, Fort Eustice, VA.

Col. Wado Carmona, Commander
Applied Aviation and Training Directorate (AATD)
Army Aviation and Missile Command
Ft. Eustice, VA

Contact Method:
Email: Ms. Lauren L. Sebring lsebring@aatd.eustis.army.mil June 1, 2002
757-878-4828, fax: 757-878-0008

Phone Call Followup: She suggested I talk to Mr. Jack Tansey
Mr. Jack Tansey, Business Development 757-878-4105 June 18, 2002
Email Followup: jtansey@aatd.Eustis.army.mil June 18, 2002

Air Force Research Laboratory (AFRL)

Dr. Barbara Wilson
Contact Method: email (Barbara.Wilson@wpafb.af.mil) July 17, 2002
Response - none

Air Force Research Laboratory (AFRL)
Dr. R. Earl Good, Director,
Directed Energy Directorate
Air Force Research Laboratory
Kirtland Air Force Base, NM 87117-5776
Contact Method: Fax (505-846-0423) July 23, 2002
Response: none

Department of the Air Force
Dr. James G. Roche
Secretary of the Air Force
Washington, DC

Contact Method: Fax (703-695-8809) July 28, 2002

Response: Letter from August 13, 2002
Lt. General Charles F. Wald
Deputy Chief of Staff, Air & Space Operations, USAF

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

I have never been employed by the U.S. Government (or any other government). Likewise, I have never been in military service (in the United States or elsewhere). In the interests of full disclosure, I worked for three summers (1967, 1968, 1969) at the RCA Astro-Electronics Division in Hightstown, NJ . (They had a summer job program for students.)

(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.

None. I did this entirely on my own dime.

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

This appears to be a two-part question. Does the patent belong to Jed Margolin, and am I that Jed Margolin?

Part 1 - If you look at the front page of the '724 patent you will see that it was, indeed, issued to Jed Margolin, [redacted] (b)(6)

If you contact the U.S. Patent and Trademark Office, Document Services Department (703-308-9726), you can order an Abstract of Title to verify that I own the patent. According to 37 CFR 1.12, assignment records are also open to public inspection at the United States Patent and Trademark Office.

Part 2 - If you look up Jed Margolin, 3570 Pleasant Echo Dr., San Jose, CA, in a telephone directory you will find assigned to it the telephone number [redacted] (b)(6)

When you called me on June 9 and June 10, that was the number you called.

Other than my affirming that I am, indeed, the Jed Margolin in question, I can only suggest that you contact my cousin Lenny (oops, I mean Dr. Len Margolin) who is employed by Los Alamos National Laboratory, and ask him if he has a cousin Jed who is an engineer and an inventor, and who possesses the Margolin gene for being very persistent. (Some say stubborn.) The last time I saw him was in Ann Arbor, Michigan, after he had just passed the orals for his doctorate. (He bought me a beer at a place on South University.)

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

I do not have a copy of the USPTO's patent file. What I have is my prosecution file which contains, among other things, privileged communications between my patent attorney and myself.

Besides, in our telephone conversation of June 10, you stated that one of the research centers (I believe it was LARC) had already ordered the file.

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

I have found no relevant prior art.

However, there is an interesting article in the June 2, 2003 issue of *Aviation Week & Space Technology* on pages 48-51 entitled **GA Riding 'Highway-in-the-Sky'** which describes, among other things, the work of Dennis B. Berlinger, lead scientist for flight deck research at the FAA's Civil Aeromedical Institute (CAMI) regarding what is called **Performance-Controlled Systems**. In the Specification of my '724 patent I call it **First Order RPV Flight Control Mode.** In Claim 18:

> 18. The station of claim 13, wherein said set of remote flight controls are configured to allow inputting absolute pitch and roll angles instead of pitch and roll rates.

An Internet search turned up Mr. Beringer's report **Applying Performance-Controlled Systems, Fuzzy Logic, and Fly-By-Wire Controls to General Aviation** as DOT/FAA/AM-02/7.

I am pleased that Mr. Beringer's May 2002 study confirms the value of Performance-Controlled Systems in piloted aircraft and I believe that teaching it in my '724 patent (filed January 19, 1999) gave an additional novel and useful aspect to my invention.

(The article also describes the Synthetic Vision system used in the FAA's Capstone program.)

If you have any further questions, please contact me.

Sincerely yours,

Jed Margolin

Enclosed: Response from General Wald
AWST article
Beringer Report
U.S. Patent 5,904,724

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
WASHINGTON, DC

13 Aug 02

HQ USAF/XO
1630 Air Force Pentagon
Washington, DC 20330-1630

Mr. Jed Margolin
3570 Pleasant Echo Dr.
San Jose, CA 95148-1916

Dear Mr. Margolin

On behalf of Secretary Roche, thank you for providing your ideas on ways to improve UAV control technology. As you know, we are now operating the Global Hawk and Predator systems in reconnaissance roles, and envision expanding unmanned aircraft applications into the weapons delivery mission area with the UCAV and the Predator/Predator B aircraft. Certainly we see a growing role for UAVs in the Air Force as technology advances and we gain experience in their operation. The improved control methods you have patented may well play a part in future UAV design. I suggest that you present these concepts to the various UAV manufacturers who are in the business of designing systems to meet our operational requirements. They can offer the best assessment on the overall feasibility of integrating your technology. I suggest a similar approach regarding your patented laser techniques.

Again, thank you for taking the time to offer these suggestions. I admire your ingenuity, and appreciate your desire to help us improve our national defense capabilities.

Sincerely

CHARLES F. WALD, Lt Gen, USAF
Deputy Chief of Staff
Air & Space Operations

cc:
SAF/AQ
AF/XOR

00229

US005904724A

United States Patent [19]

Margolin

[11] Patent Number: 5,904,724

[45] Date of Patent: May 18, 1999

[54] **METHOD AND APPARATUS FOR REMOTELY PILOTING AN AIRCRAFT**

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

[21] Appl. No.: **08/587,731**

[22] Filed: **Jan. 19, 1996**

[51] **Int. Cl.**[6] **G06F 165/00**; H04N 7/18

[52] **U.S. Cl.** **701/120**; 701/2; 701/24; 244/189; 244/190; 348/114

[58] **Field of Search** 364/423.099, 424.012, 364/424.013, 424.021, 424.022, 449.2, 449.7, 460, 439, 424.028; 340/825.69, 825.72, 967, 989, 991, 992, 993; 244/189, 190, 181, 17.13, 3.11, 3.15; 348/42, 51, 113, 114, 117, 123, 143; 382/154; 395/118, 119, 125

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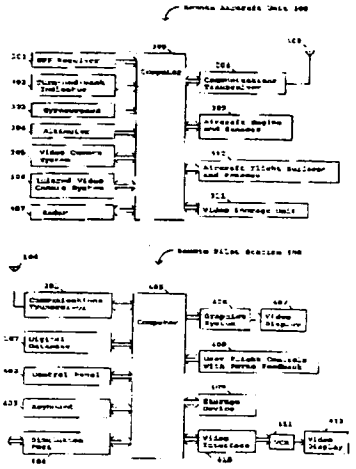
Primary Examiner—Tan Q. Nguyen

Attorney, Agent, or Firm—Blakely, Sokoloff, Taylor and Zafman LLP

[57] **ABSTRACT**

A method and apparatus that allows a remote aircraft to be controlled by a remotely located pilot who is presented with a synthesized three-dimensional projected view representing the environment around the remote aircraft. According to one aspect of the invention, a remote aircraft transmits its three-dimensional position and orientation to a remote pilot station. The remote pilot station applies this information to a digital database containing a three dimensional description of the environment around the remote aircraft to present the remote pilot with a three dimensional projected view of this environment. The remote pilot reacts to this view and interacts with the pilot controls, whose signals are transmitted back to the remote aircraft. In addition, the system compensates for the communications delay between the remote aircraft and the remote pilot station by controlling the sensitivity of the pilot controls.

20 Claims, 7 Drawing Sheets



GA Riding 'Highway-in-the-Sky'

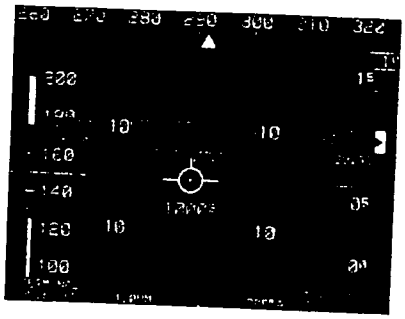
General aviation sector reaps the benefits of research originally conducted for military, commercial transport cockpits

BRUCE D. NORDWALL/WASHINGTON and OKLAHOMA CITY

General aviation aircraft are finally catching up with some of the advances found in the latest commercial transports and military cockpits, and in one particular sphere—display innovations—GA is actually taking the lead.

Researchers in industries and universities around the world have been pursuing a more intuitive guidance display for pilots for years. In general, this elusive presentation is referred to as highway-in-the-sky (HITS) (*AW&ST* Apr. 20, 1998, p. 58). In a twist that may foreshadow future advances, it was a general aviation aircraft that received the FAA's first certification of HITS technology for navigation guidance.

Instead of following course deviation indicators and altimeters, a pilot using this HITS presentation flies through a series of 3D boxes on a multifunction display. By maneuvering through the 400 X 320-ft. boxes spaced at 2,000-ft. intervals along the planned GPS route of flight, the pilot keeps the aircraft on course and altitude, which is particularly helpful for a descending, curved instrument approach.



Flying through "boxes in the sky" keeps pilots on course and altitude during a simulated curved instrument approach down the mountainous Gastineau Channel to Juneau, Alaska.

L.A.B. Flying Service's Piper Seneca made the first commercial revenue flight using HITS in Juneau, Alaska, on Mar. 31. It followed an optimized area navigation (RNAV) route through airspace that would be inaccessible with conventional avionics.

The system was built by Chelton Flight Systems as part of the second

phase of the imaginative Capstone program, an FAA industry/academic partnership in Alaska. The cockpit employs a Chelton FlightLogic electronic flight information system-synthetic vision (EFIS-SV) using two glass displays, one for primary flight guidance and one for navigation.

The big innovation is the use of synthetic vision symbology to present information to pilots. The initial EFIS systems digitally replicated the rudimentary attitude and flight-director symbols of electro-mechanical instruments from an earlier era. Now, in addition to the flight path, pilots see a real-time 3D view of the terrain and obstacles on the primary flight display. These are complemented by a moving map on the navigation display and by aural terrain warnings.

Among the other "firsts" claimed by Capstone Phase II on the Juneau flight were the use of forward-looking 3D terrain and HUD symbology on a certified primary flight display, and commercial use of the GPS wide-area augmentation system (WAAS).

Capstone has equipped three aircraft in Alaska with the Chelton Flight Systems' cockpit, and plans to outfit every commercial operator in SE Alaska within the next 18 months. The contract for 125 aircraft could expand to up to 200, according to Gordon Pratt, Chelton's president. The FAA is providing the equipment at no charge in Alaska to any commuter and on-demand (FAA Part 135) operator of fixed-wing aircraft or helicopters. A supplemental type certificate for helicopters was scheduled to be delivered on May 31. An additional 10 aircraft are being outfitted in the contiguous U.S., Pratt said, but at the expense of aircraft owners.

The first phase of the Capstone Program started as a demonstration that equipped a number of commuter and air taxi aircraft in the Yukon-Kuskokwim River delta area with a low-cost GPS, a terrain database, data link and Automatic Dependent Surveillance-Broadcast (ADS-B) equipment (*AW&ST* Sept. 18, 2000, p. 68). With GPS as the enabling technology, that phase indicated that a low-cost system could give bush pilots many of the safety benefits long-standard for commercial jet transports. The emphasis was on reducing controlled flight into terrain accidents for these pilots, who usually operate out of the range of navigation aids or radar help from ATC. Phase II with HITS and synthetic vision greatly expands those capabilities.

The navigation display shows GPS WAAS position and an approach not possible with conventional navigation aids due to a 20-30-deg. turn after the GASTN waypoint to align with the runway.

CAMI tested a four-axis side-arm controller in a simulator as a replacement for stick and throttle in a fly-by-wire performance control system.

The next major safety enhancement for GA aircraft could come from "performance control," according to Dennis B. Beringer, lead scientist for flight deck research at the FAA's Civil Aeromedical Institute (CAMI) in Oklahoma City. While known more for assisting FAA's Aircraft Certification Service and Flight Standards in defining requirements for both aircraft and pilots, CAMI is also an active partner in human factors research to improve cockpits.

With **performance control,** non-pilots could learn to fly a *simulator in 15 min.*

The performance-control concept was introduced in the 1970s, before electronics were sufficiently advanced for implementation. Beringer said that now some of the fly-by-wire military and commercial aircraft use what could be legitimately called performance-control logic, which not only make aircraft easier to fly, but can also add flight envelope protection.

With conventional flight controls, a pilot has direct command of the aerodynamic surfaces. With performance control, his movements would be transmitted via a fuzzy-logic controller to a flight management system or an auto pilot that would guide the aircraft to carry out the desired performance goal. But unlike a simple autopilot, which directs a change in heading at a limited rate of turn, performance-control logic changes control laws so that a pilot commands the rate of turn and bank, and rate of climb or descent. It simplifies command of more complicated maneuvers, and is a compromise between automated maneuvering and manual flight control, Beringer said. Safety is further enhanced using a self-centering (spring-loaded) side stick which returns to the centered position when the pilot relaxes pressure, thus bringing the aircraft to straight and level flight.

The reduced number of control movements is one reason flying is easier. Going into a turn with conventional controls, the pilot has to initiate the roll, and then neutralize the ailerons when he achieves the desired bank angle. But with performance controls, one movement establishes the desired bank angle/turn rate. One downside to performance control with envelope protection is the inability to do aerobatics, such as an aileron roll or loop, Beringer said.

In the four-axis side-arm controller (above), rotating the wrist governs the rate of turn, flexing the wrist vertically directs the rate of climb or descent, and fore and aft movement varies the airspeed. Interest in performance controls was renewed with NASA's Agate (Advanced General Aviation Transport Experiments) program, which was concerned with simplifying the flight task and reducing ab initio training requirements. Agate has also been a strong supporter of HITS.

Researchers had previously found that with performance control, non-pilots could learn to fly a simulator in 15 min. Beringer tested the system in a simula-

tor configured as a Piper Malibu at CAMI. It used HITS displays and a four-axis side-arm controller. Twenty-four individuals with varying flight experience participated: six high-flight-time pilots; six low-flight-time pilots; six student pilots, and six non-pilots. Each flight involved a takeoff into instrument conditions, a continuous climb while turning downwind, a turn to intercept the instrument landing system glidepath, and a descent to landing. Flights were divided between use of a conventional yoke and the side-arm controller.

The findings were consistent. The aircraft was more stable and had less variations in course and altitude using performance control than with conventional controls. Although experienced pilots always outperformed less-experienced individuals, with either system, all agreed the effort required was nearly halved.

The big innovation is use of synthetic vision symbology

Performance control is not apt to be seen in Piper Cubs, but perhaps in Beech Bonanzas and Piper Malibus. A lot of them already have two- or three-axis autopilots, so a significant capability could be achieved by rigging a side-stick control to the autopilot, Beringer said.

But two large problems must be overcome for performance controls to appear in the next generation of GA aircraft. The first is cost. Affordable and certifiable computer controls and servos would have to drop to a level competitive with more conventional systems.

Second, a fly-by-wire debate must be resolved. Could an affordable system be built with sufficient reliability using triple- or quad-redundancy, or would a costly manual-reversion be required? A mechanical backup would add cost for installation and for training pilots to operate the two systems.

Complicating that issue is the question of the level of reliability required. The FAA's current standard for a flight-critical system is a failure rate of 10^{-9}. While this is a standard for NASA, it might not be reasonable for general aviation aircraft. Beringer points out that the failure rate for humans is about 10^{-3}.

(b)(6)

Reference 6 (1 page)

Jed Margolin
[redacted]

January 8, 2004

Mr. Alan J. Kennedy
Director, Infringement Division
Office of the Associate General Counsel
National Aeronautics and Space Administration
Headquarters
[redacted]
(b)(6)

Attn: GP(02-37016)

Dear Mr. Kennedy,

I am disappointed to hear that the investigation that you promised would take 3-6 months has not been completed.

As per our telephone conversation of 10 December 2003, please confirm that you believe the Statute of Limitations gives NASA the right to take up to six years to rule on my claim for compensation for the use of my patent.

Also, please confirm that you expect NASA to reject my claim for compensation on the grounds that the X-38 never flew.

Sincerely yours,

Jed Margolin

Jed Margolin

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00236

[redacted]

From: McNutt, Jan (HQ-MC000)
Sent: Friday, October 03, 2008 9:13 AM
To: Borda, Gary G. (HQ-MC000); Rotella, Robert F. (HQ-MA000)
Subject: FW: Jan S. McNutt, Please see the attached letter; it is your response to your most recent letter.

[redacted] (b)(5)

From: Robert Adams-OTG [redacted] (b)(6)
Sent: Friday, October 03, 2008 8:18 AM
To: McNutt, Jan (HQ-MC000)
Subject: RE: Jan S. McNutt, Please see the attached letter; it is your response to your most recent letter.

Mr. McNutt,

Our company provided you're everything that had been requested by your counsel as all of that is legal and current, for you to say otherwise is nothing more than an attempt to delay the process and shall be brought up latter to the judge should this matter go to court.

Dr. Adams

From: McNutt, Jan (HQ-MC000) [redacted] (b)(6)
Sent: Wednesday, October 01, 2008 7:58 AM
To: Robert Adams-OTG
Subject: RE: Jan S. McNutt, Please see the attached letter; it is your response to your most recent letter.

Dear Mr. Adams,

Thank you for your email and offer of settlement. At the moment the Administration is still reviewing the claim and it is, therefore, premature for any settlement talks. We trust that you have forwarded our letter of August 20, 2008 to your attorney Mr. Larry Oliverio and anticipate that he will be responding to the more detailed and also more current information we requested in that letter.

Regards,

Jan S. McNutt
Senior Attorney (Commercial)
Office of the General Counsel
NASA Headquarters
[redacted] (b)(6)

00227

[redacted]

From: McNutt, Jan (HQ-MC000)
Sent: Monday, October 06, 2008 11:18 AM
To: Rotella, Robert F. (HQ-MA000)
Cc: Borda, Gary G. (HQ-MC000)
Subject: FW: Optima Technology Group - Margolin Patents

[redacted] (b)(5)

-----Original Message-----
From: krukar@olpatentlaw.com [mailto:[redacted]]
Sent: Friday, October 03, 2008 5:13 PM
To: Mike Abernathy
Cc: McNutt, Jan (HQ-MC000); [redacted]
Subject: RE: Optima Technology Group - Margolin Patents

(b)(5)

Hi Jan,

Richard Krukar, the guy that prepped the reexam request here.

Another issue we found is that Rapid Imaging Software (RIS) is not infringing either directly or indirectly.

...richard

On Fri, October 3, 2008 2:48 pm, Mike Abernathy wrote:
> Privileged and Confidential
>
>
>
>
> Dear Jan,
>
>
>
>
> We will of course be happy to help however possible. Our company
> prepared a request for re-examination of these patents based on prior art
> and would have used it had OTG not gone away.
>
>
>
> These patents are defective because the invention is both obvious and
> non-novel as evidenced by numerous printed published works. (We can
> provide these references if needed). Ironically, they claim patent on
> work already published by NASA over a decade earlier.
>
>
>
> The attached NASA technical publication by Shahan Serrafian, Simulator
> Evaluation of a Remotely Piloted Vehicle Lateral Landing Task Using a
> Visual
> Display, dates from 1984 and fully anticipates both Margolin patents, and
> is referenced by neither one.

00250

> http://en.wikipedia.org/wiki/Highly Maneuverable Aircraft Technology
>
> In other words, OTG is attempting force NASA to pay for a patent
> infringement on something that NASA in fact invented and published more
> than a decade prior to the patent filing.
>
> Would Wednesday at 10AM MT be convenient for you?
>
> Mike Abernathy
>
> Rapid Imaging Software, Inc.
>
> [redacted]
> [redacted] (b)(6)
> [redacted]
>
> www.landform.com
>
> From: McNutt, Jan (HQ-MC000) [mailto:[redacted] (b)(6)
> Sent: Friday, October 03, 2008 1:37 PM
> To: [redacted]
> Subject: Optima Technology Group - Margolin Patents
>
> [redacted]hy, (b)(5)
> [redacted]

00200

> Regards,
>
>
> Jan S. McNutt
> Senior Attorney (Commercial)
> Office of the General Counsel
> NASA Headquarters
> [redacted]
> [redacted]
> [redacted]
> [redacted]
> [redacted]
>
>
>

(b)(6)

00261

[redacted]

From: McNutt, Jan (HQ-MC000)
Sent: Monday, October 06, 2008 11:18 AM
To: Rotella, Robert F. (HQ-MA000)
Cc: Borda, Gary G. (HQ-MC000)
Subject: FW: Optima Technology Group - Margolin Patents

[redacted] (b)(5)

From: Benjamin W. Allison [redacted] (b)(6)
Sent: Friday, October 03, 2008 5:46 PM
To: Mike Abernathy; McNutt, Jan (HQ-MC000)
Cc: krukar@olpatentlaw.com
Subject: RE: Optima Technology Group - Margolin Patents

Jan,

We're assisting RIS in the Optima matter as well, and I would like to participate in the call Wednesday. Let me know call-in information when you can.

Regards,

Ben

Benjamin Allison
Sutin Thayer & Browne PC
[redacted] (b)(6)

From: Mike Abernathy [redacted] (b)(6)
Sent: Friday, October 03, 2008 2:49 PM
To: 'McNutt, Jan (HQ-MC000)'
Cc: Benjamin W. Allison; krukar@olpatentlaw.com
Subject: RE: Optima Technology Group - Margolin Patents

Privileged and Confidential

Dear Jan,

We will of course be happy to help however possible. Our company prepared a request for re-examination of these patents based on prior art and would have used it had OTG not gone away.

These patents are defective because the invention is both obvious and non-novel as evidenced by numerous printed published works. (We can provide these references if needed). Ironically, they claim patent on work already published by NASA over a decade earlier.

00262

The attached NASA technical publication by Shahan Serrafian, *Simulator Evaluation of a Remotely Piloted Vehicle Lateral Landing Task Using a Visual Display,* dates from 1984 and fully anticipates both Margolin patents, and is referenced by neither one.

http://en.wikipedia.org/wiki/Highly_Maneuverable_Aircraft_Technology

In other words, OTG is attempting force NASA to pay for a patent infringement on something that NASA in fact invented and published more than a decade prior to the patent filing.

Would Wednesday at 10AM MT be convenient for you?

Mike Abernathy
Rapid Imaging Software, Inc.
[redacted] (b)(6)
www.landform.com

From: McNutt, Jan (HQ-MC000) [redacted] (b)(6)
Sent: Friday, October 03, 2008 1:37 PM
To: mikea@landform.com
Subject: Optima Technology Group - Margolin Patents

Dear Mr. Abernathy,

[redacted] (b)(5)

Regards,

Jan S. McNutt
Senior Attorney (Commercial)
Office of the General Counsel
NASA Headquarters
[redacted] (b)(6)

00203

[redacted]

From: McNutt, Jan (HQ-MC000)
Sent: Monday, October 06, 2008 11:19 AM
To: Rotella, Robert F. (HQ-MA000); Fein, Edward K. (JSC-AL)
Cc: Borda, Gary G. (HQ-MC000)
Subject: FW: Optima Technology Group - Margolin Patents
Attachments: HiMAT Claims Analysis of Patent 5904724.doc; HIMAT_Kempel_1988_0006558_1989006558.pdf

[redacted] (b)(5)

From: Mike Abernathy [redacted] (b)(6)
Sent: Saturday, October 04, 2008 7:08 PM
To: McNutt, Jan (HQ-MC000)
Cc: [redacted]
Subject: patent

Privileged and confidential

Hi Jan,

Richard is quite correct to point out that we did not infringe. Our software license in fact prohibits this use of our software.

I have attached a claims chart regarding NASA research fully anticipating the patent, to help you become familiar with the patent in question. Please keep this information confidential for now.

Mike Abernathy
Rapid Imaging Software, Inc.
[redacted] (b)(6)
www.landform.com

From: McNutt, Jan (HQ-MC000) [redacted] (b)(6)
Sent: Friday, October 03, 2008 1:37 PM
To: mikea@landform.com
Subject: Optima Technology Group - Margolin Patents

[redacted]

[redacted] (b)(5)

Regards,

Jan S. McNutt
Senior Attorney (Commercial)

00284

Office of the General Counsel
NASA Headquarters
[redacted]

(b)(6)

00265

[redacted]

From: Fein, Edward K. (JSC-AL)
Sent: Wednesday, October 08, 2008 1:55 PM
To: Benjamin W. Allison; McNutt, Jan (HQ-MC000); Rotella, Robert F. (HQ-MA000)
Cc: Mike Abernathy; [redacted]; Geraldine M. Romero; Borda, Gary G. (HQ-MC000)
Subject: RE: Optima (b)(6)

Thanks, all ... It was indeed a productive telecon.

-Ed

Edward K. Fein
Intellectual Property Counsel
NASA Johnson Space Center
[redacted] (b)(6)

From: Benjamin W. Allison [redacted] (b)(6)
Sent: Wednesday, October 08, 2008 12:28 PM
To: McNutt, Jan (HQ-MC000); Rotella, Robert F. (HQ-MA000); Fein, Edward K. (JSC-AL)
Cc: Mike Abernathy; [redacted]; Geraldine M. Romero
Subject: Optima

Jan, Bob, and Ed,

It was a pleasure talking this morning. Attached is a copy of our response on behalf of RIS to Optima's demand letter, as we discussed. Mike will be contacting you shortly and providing our reexam materials. Let us know if we can help in any other way.

Regards,

Ben

Benjamin Allison
Sutin Thayer & Browne PC
[redacted] (b)(6)

00360

[redacted]

From: Fein, Edward K. (JSC-AL)
Sent: Wednesday, October 08, 2008 1:56 PM
To: McNutt, Jan (HQ-MC000); Rotella, Robert F. (HQ-MA000)
Cc: Borda, Gary G. (HQ-MC000)
Subject: RE: Optima

See: http://www.sutinfirm.com/

From: Benjamin W. Allison [[redacted]M] (b)(6)
Sent: Wednesday, October 08, 2008 12:28 PM
To: McNutt, Jan (HQ-MC000); Rotella, Robert F. (HQ-MA000); Fein, Edward K. (JSC-AL)
Cc: Mike Abernathy; [redacted]; Geraldine M. Romero
Subject: Optima

(b)(6)

Jan, Bob, and Ed,

It was a pleasure talking this morning. Attached is a copy of our response on behalf of RIS to Optima's demand letter, as we discussed. Mike will be contacting you shortly and providing our reexam materials. Let us know if we can help in any other way.

Regards,

Ben

Benjamin Allison
Sutin Thayer & Browne PC
[redacted] (b)(6)

00361

[redacted]

From: Fein, Edward K. (JSC-AL)
Sent: Wednesday, October 08, 2008 2:11 PM
To: McNutt, Jan (HQ-MC000); Rotella, Robert F. (HQ-MA000)
Cc: Borda, Gary G. (HQ-MC000)
Subject: RE: Optima

and: http://www.olpatentlaw.com/

From: Fein, Edward K. (JSC-AL)
Sent: Wednesday, October 08, 2008 12:56 PM
To: McNutt, Jan (HQ-MC000); Rotella, Robert F. (HQ-MA000)
Cc: Borda, Gary G. (HQ-MC000)
Subject: RE: Optima

See: http://www.sutinfirm.com/

From: Benjamin W. Allison [redacted]
Sent: Wednesday, October 08, 2008 12:28 PM
To: McNutt, Jan (HQ-MC000); Rotella, Robert F. (HQ-MA000); Fein, Edward K. (JSC-AL)
Cc: Mike Abernathy; [redacted]; Geraldine M. Romero
Subject: Optima

Jan, Bob, and Ed,

It was a pleasure talking this morning. Attached is a copy of our response on behalf of RIS to Optima's demand letter, as we discussed. Mike will be contacting you shortly and providing our reexam materials. Let us know if we can help in any other way.

Regards,

Ben

Benjamin Allison
Sutin Thayer & Browne PC
[redacted]

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[redacted]

From: Fein, Edward K. (JSC-AL)
Sent: Thursday, October 16, 2008 1:20 PM
To: Borda, Gary G. (HQ-MC000); Homer, Mark W. (JPL-0910)
Cc: McNutt, Jan (HQ-MC000); Rotella, Robert F. (HQ-MA000); Samuels, David A. (DFRC-L)
Subject: RE: Admin Claim for Patent Infringement - Optima Technology Group

[redacted]

(b)(5)

From: Delgado, Francisco J. (JSC-ER2) [redacted] (b)(6)
Sent: Monday, September 25, 2006 9:42 PM
To: Mike Abernathy; Fein, Edward K. (JSC-AL); Kennedy, Alan J. (HQ-MC000); [redacted]
Cc: Delgado, Francisco J. (JSC-ER2); Fredrickson, Steven E. (JSC-ER)
Subject: FW: Read: Let us chat on about SCOUT, SC3D, the X-38 program and RIS; noted below are our patents that cover said technology that RIS and your groups are using.

See email from "Mr. Adams" below.

This is getting more ridiculous by the minute. I have resisted replying in any form as suggested by JSC council. However, this matter has been left open for quite some time and something needs to be done NOW. It has come to my attention that Mr. Adams and company have issued a letter that prohibits RIS from selling any of their software until this issue is resolved. We have had a very "intellectually" fruitful relationship with RIS for almost a decade and would like to continue this relationship for many years to come. Some of the technology concepts in question were co-developed by RIS and I during many "brainstorming sessions" on how to provide optimal situation awareness to various users.

The folks pressing forward with this claim do not have solid ground to stand on (IMHO). Based on the previous research performed, I do not see how their patent claims are valid and I would like to request that NASA's council take this matter seriously and get the patents invalidated (as it should have been done when this first showed up a couple of years ago). This is not only the right legal thing to do, but also the right moral thing to do. If we allow an individual to continue to harass small companies and stand-by with little/no action, then we are no better than the company doing the harassing. As a government organization, we need to keep the public faith and trust and again, "do the right thing." I realize that patience is important in legal matter, but believe that the time for sitting idle and hoping that this matter goes away is way past due and that something needs to be done ASAP. Putting companies that NASA relies on to help move technology forward out of business with a barrage of unwarranted litigation does not seem like it is in NASA's (or our taxpayers) best interest.

Please let me know what I need to do on my end to help move this along.

BTW: If we do not deal with issue immediately it will only get worse for NASA. I know of several Projects

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within JSC, JPL, and Langley that use independently developed technology (i.e. technology that does not use what RIS and I came up with) that I am sure Mr. Adams and company would claim infringes on their "Patents." We seem to be on his radar at the moment because we do what government organizations are encouraged to do ("Publish their work").

Thank You,

Frank Delgado

From: Borda, Gary G. (HQ-MC000)
Sent: Thursday, October 16, 2008 11:42 AM
To: Fein, Edward K. (JSC-AL); Homer, Mark W. (JPL-0910)
Cc: McNutt, Jan (HQ-MC000); Rotella, Robert F. (HQ-MA000); Samuels, David A. (DFRC-L)
Subject: Admin Claim for Patent Infringement - Optima Technology Group
Importance: High

[redacted]

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Gary G. Borda
Agency Counsel for Intellectual Property
Office of the General Counsel

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NASA Headquarters

[redacted] (b)(6)

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This communication should only be used for the particular matter discussed herein. Changes in circumstances and changes in law can greatly alter any current legal advice.

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[redacted]

From: Homer, Mark W. (JPL-0910)
Sent: Thursday, October 16, 2008 1:39 PM
To: Borda, Gary G. (HQ-MC000)
Subject: FW: Admin Claim for Patent Infringement - Optima Technology Group

[redacted]

(b)(5)

From: Fein, Edward K. (JSC-AL)
Sent: Thursday, October 16, 2008 10:20 AM
To: Borda, Gary G. (HQ-MC000); Homer, Mark W. (JPL-0910)
Cc: McNutt, Jan (HQ-MC000); Rotella, Robert F. (HQ-MA000); Samuels, David A. (DFRC-L)
Subject: RE: Admin Claim for Patent Infringement - Optima Technology Group

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(b)(5)

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Thank You,

Frank Delgado

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Sent: Thursday, October 16, 2008 11:42 AM
To: Fein, Edward K. (JSC-AL); Homer, Mark W. (JPL-0910)
Cc: McNutt, Jan (HQ-MC000); Rotella, Robert F. (HQ-MA000); Samuels, David A. (DFRC-L)
Subject: Admin Claim for Patent Infringement - Optima Technology Group
Importance: High

[redacted]

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[redacted]

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Gary G. Borda
Agency Counsel for Intellectual Property
Office of the General Counsel
NASA Headquarters
[redacted]
Phone: [redacted]
Cell:
Fax:

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[redacted]

From: Galus, Helen M. (LARC-B2)
Sent: Friday, October 17, 2008 10:22 AM
To: Borda, Gary G. (HQ-MC000)
Subject: FW: File wrapper for 5,904,724
Attachments: PAT-00016 Margolin - 5,904,724 - A (L0062064).PDF; PAT-00016 Margolin - 5,904,724 - B (L0062065).PDF; PAT-00016 Margolin - 5,904,724 - C (L0062079).PDF; PAT-00016 Margolin - 5,904,724 - D (L0062080).PDF; PAT-00016 Margolin - 5,904,724 - E (L0062081).PDF; PAT-00016 Margolin - 5,904,724 - E1 (L0062083).PDF; PAT-00016 Margolin - 5,904,724 - F (L0062084).PDF; PAT-00016 Margolin - 5,904,724 - G (L0062085).PDF; PAT-00016 Margolin - 5,904,724 - G2 (L0062086).PDF

[redacted] (b)(5)

From: Galus, Helen M. (LARC-B2)
Sent: Friday, October 17, 2008 10:00 AM
To: Rotella, Robert F. (HQ-MA000); Homer, Mark W. (JPL-0910); Fein, Edward K. (JSC-AL)
Cc: Blackburn, Linda B. (LARC-B2); Galus, Helen M. (LARC-B2)
Subject: FW: File wrapper for 5,904,724

[redacted] (b)(5)

Helen M. Galus
Patent Attorney
Office of Chief Counsel
NASA Langley Research Center
[redacted] (b)(6)