

UNITED STATES DISTRICT COURT  
DISTRICT OF NEVADA

JED MARGOLIN,

Plaintiff

v.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Defendant.

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

**Appendix Volume 7**

**For Motion For Summary Judgment**

Jed Margolin  
1981 Empire Rd.  
VC Highlands, NV 89521-7430  
Phone: 775-847-7845  
Email: [jm@jmargolin.com](mailto:jm@jmargolin.com)

Dated: June 9, 2010

**Appendix Volume 7 - Index**

I. Exhibit 11 - Part 6: Redacted emails produced by NASA ..... A3

Claim 1

X-Sender: [REDACTED]  
X-Mailer: QUALCOMM Windows Eudora Version 5.1  
Date: Mon, 19 May 2003 11:15:04 -0400  
To: [REDACTED]  
From: "Barry V. Gibbens, LaRC" <[REDACTED]>  
Subject: Fwd: Re: X-38, Synthetic Vision, Patents, Claim for Compensation  
Cc: "Linda B. Blackburn" <[REDACTED]>  
robin W Edwards <[REDACTED]>  
"Kurt G. Hammerle" <[REDACTED]>

b(6)

[REDACTED]

b(5)

Date: Tue, 13 May 2003 17:14:07 -0400  
To: "Jed Margolin" <[REDACTED]>  
From: "Kurt G. Hammerle @ Langley Research Center" <[REDACTED]>  
Subject: Re: X-38, Synthetic Vision, Patents, Claim for Compensation  
Cc: linda

b(6)

Dear Mr. Margolin:

This reply acknowledges my receipt of your correspondence below.

Sincerely,  
Kurt Hammerle

At 11:13 PM 5/12/2003 -0700, you wrote:  
Dear Mr. Hammerle,

This is in reference to our telephone conversation of May 12, 2003, where I expressed my belief 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.

Summary

[REDACTED]

Barry V. Gibbens  
NASA Langley Research Center  
Intellectual Property Law Team - Office of Chief Counsel

[Redacted] 0001 *b(6)*

phone: (757) 864-7141  
fax: (757) 864-9190  
email: [Redacted]  
wwwwebsite: <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.

Barry V. Gibbens  
NASA Langley Research Center  
Intellectual Property Law Team - Office of Chief Counsel

[Redacted]

*b(6)*  
phone: (757) 864-7141  
fax: (757) 864-9190  
email: [Redacted]  
wwwwebsite: <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.

Barry V. Gibbens  
NASA Langley Research Center  
Intellectual Property Law Team - Office of Chief Counsel

[Redacted]

phone: (757) 864-7141  
fax: (757) 864-9190  
email: [Redacted]  
wwwwebsite: <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.

**FW: Administrative Claim of Jed Margolin for Infringement of U.S. Patent 5,904,724 by the X-38 Project**

From: FEIN, EDWARD K. (JSC-HA) (NASA) [Redacted]  
To: Kennedy, Alan [Redacted]

Date: Jul 09 2004 - 4:17pm  
Viewed On: -- ?date?

Alan ... Not sure I forwarded this one.

-Ed

-----Original Message-----

From: Mike Abernathy [mailto: [REDACTED] b(e)]  
Sent: Monday, June 28, 2004 9:10 AM  
To: FEIN, EDWARD K. (JSC-HA) (NASA)  
Subject: RE: Administrative Claim of Jed Margolin for Infringement of U.S. Patent 5,904,724 by the X-38 Project

Hi Ed,

Frank is back in West Virginia presenting SmartCam3D for NASA Software of the Year.

What kinds of things would be used to demonstrate that a patent is invalid? Is it necessary to show that people had done this before the patent was issued or before the patent application?

This patent claims in the 1995 application that it developed the method of pilot aid using a 3D synthetic environment. But at this webpage, you can see that a Dutch university had already flown such an environment in 1994:

<http://www.synthetic-vision.tudelft.nl/>

(See First flight of the DELPHINS Tunnel-in-the-sky display at the bottom of the list of links).

The patent claims a pilot aid using a synthetic environment – if the method were used for another purpose than aiding the pilot like for example aiding a camera operator instead would that be infringement?

What bothers me about this patent is that it appears to be not a patent on peanut butter, nor on jelly, but rather a patent on the method of making a sandwich by combining the two. This to me appears to be a non-novel use of existing technologies to create a “method”. Everyone familiar with the field of synthetic vision is boggled that such a patent has been issued because it is obvious use of existing technologies.

Let me know how I can help.

Best regards,

Mike Abernathy  
Rapid Imaging Software, Inc.  
[REDACTED] b(e)

[www.landform.com](http://www.landform.com)  
[www.visualflight.com](http://www.visualflight.com)

-----Original Message-----

From: FEIN, EDWARD K. (JSC-HA) (NASA) [mailto: [REDACTED] b(e)]  
Sent: Thursday, June 24, 2004 9:01 AM  
To: DELGADO, FRANCISCO J. (FRANK) (JSC-ER2) (NASA)  
Cc: [REDACTED] WHITTINGTON, JAMES (JSC-HA) (USA); DICKERSON, MARY E. (JSC-HA) (NASA); MURATORE, JOHN F. (JSC-MS) (NASA)  
Subject: RE: Administrative Claim of Jed Margolin for Infringement of U.S. Patent 5,904,724 by the X-38 Project

b(e)

Frank ... Haven't heard from you in a while. Where are we on this project? I just spoke with Mike Abernathy, Rapid Imaging, one of our SBIR contractors. He said he'd be happy to help us. He has information which may

be relevant to antedating the subject patent.

-Ed

-----Original Message-----

From: FEIN, EDWARD K. (JSC-HA) (NASA)  
Sent: Monday, February 23, 2004 10:10 AM  
To: DELGADO, FRANCISCO J. (FRANK) (JSC-ER2) (NASA)  
Cc: 'Kennedy, Alan'; MURATORE, JOHN F. (JSC-MS) (NASA)  
Subject: RE: Administrative Claim of Jed Margolin for Infringement of U.S. Patent 5,904,724 by the X-38 Project  
Thanks, Frank!

-Ed

-----Original Message-----

From: DELGADO, FRANCISCO J. (FRANK) (JSC-ER2) (NASA)  
Sent: Friday, February 20, 2004 8:16 PM  
To: MURATORE, JOHN F. (JSC-MS) (NASA); FEIN, EDWARD K. (JSC-HA) (NASA)  
Cc: 'Kennedy, Alan'  
Subject: RE: Administrative Claim of Jed Margolin for Infringement of U.S. Patent 5,904,724 by the X-38 Project

[Redacted]

[Redacted]

b(5)

[Redacted]

Thanks,

Frank Delgado

Frank Delgado  
Building 1, Room 920C  
Phone: [Redacted]  
Fax: [Redacted]  
Pager: [Redacted]

b(6)

-----Original Message-----

From: MURATORE, JOHN F. (JSC-MS) (NASA)  
Sent: Friday, February 20, 2004 6:37 PM  
To: FEIN, EDWARD K. (JSC-HA) (NASA); DELGADO, FRANCISCO J. (FRANK) (JSC-ER2) (NASA)  
Cc: 'Kennedy, Alan'  
Subject: RE: Administrative Claim of Jed Margolin for Infringement of U.S. Patent 5,904,724 by the X-38 Project

[Redacted]

b(5)

jm

-----Original Message-----

From: FEIN, EDWARD K. (JSC-HA) (NASA)  
Sent: Friday, February 13, 2004 10:52 AM  
To: MURATORE, JOHN F. (JSC-MS) (NASA)  
Cc: 'Kennedy, Alan'  
Subject: Administrative Claim of Jed Margolin for Infringement of U.S. Patent 5,904,724 by the X-38 Project

b(5)

[REDACTED]

-Ed

Edward K. Fein  
Intellectual Property Counsel  
NASA Johnson Space Center

[REDACTED]

b(6)

Fax: [REDACTED]  
E-Mail: [REDACTED]

**FW: Margolin Infringement**

From: FEIN, EDWARD K. (JSC-HA) (NASA) <[REDACTED]>  
To: DICKERSON, MARY E. (JSC-HA) (NASA) <[REDACTED]>  
Date: Jul 09 2004 - 2:43pm  
Viewed On: -- ?date?

b(6)



RE: - 267k

RE: - 100k

RE: - 9.7k

FW: - 12k

FW: - 12k

-----Original Message-----

From: FEIN, EDWARD K. (JSC-HA) (NASA)  
Sent: Friday, July 09, 2004 2:41 PM  
To: 'Kennedy, Alan'

Cc: 'Bayer, Kathy';  
Subject: Margolin Infringement

b(5)

[Redacted]

☑ RE:

From: Mike Abernathy <[Redacted]>  
To: 'FEIN, EDWARD K. (JSC-HA) (NASA)' <[Redacted]> b(6)  
Date: Jun 28 2004 - 1:29pm  
Viewed On: -- ?date?

☑ FW: Patents 5566073 and 5904724

From: FEIN, EDWARD K. (JSC-HA) (NASA) <[Redacted]> b(6)  
To: 'CULBERT, CHRISTOPHER J. (CHRIS) (JSC-ER) (NASA)' <[Redacted]>  
Date: Jul 13 2004 - 1:26pm  
Viewed On: -- ?date?

[Redacted] b(5)

-----Original Message-----

From: FEIN, EDWARD K. (JSC-HA) (NASA)  
Sent: Tuesday, July 13, 2004 8:37 AM  
To: BENZ, FRANK J. (JSC-EA) (NASA); GUY, WALTER W. (JSC-ER) (NASA); FARMER, CLIFF L. (JSC-ER) (NASA)  
Cc: GILBERT, CHARLENE E. (JSC-HA) (NASA); JAMES, JOHN E. (JACK) (JSC-HA) (NASA)  
Subject: Patents 5566073 and 5904724

b(5)

[Redacted]

Edward K. Fein  
Intellectual Property Counsel  
NASA Johnson Space Center  
Mail Code HA

[Redacted] b(6)  
Fax: [Redacted]  
E-Mail: [Redacted]

-----Original Message-----

04606



From: FEIN, EDWARD K. (JSC-HA) (NASA)  
Sent: Monday, July 12, 2004 11:00 AM  
To: DELGADO, FRANCISCO J. (FRANK) (JSC-ER2) (NASA); 'Kennedy, Alan'; [REDACTED]  
Cc: FARMER, CLIFF L. (JSC-ER) (NASA); MURATORE, JOHN F. (JSC-MS) (NASA)  
Subject: RE: Patents 5566073 and 5904724

b(6)

Frank ... Thank you so much for your detailed analysis and research on this matter. I know that you invested considerable time into assisting in the defense of this infringement claim. Your effort, together with valuable input from Mike Abernathy, will be the basis for NASA's denying the administrative claim. There is always a chance that Margolin will file a law suit, but with all of the information you guys have turned up, I think the chance of that is small.

Thanks again!

-Ed

Edward K. Fein  
Intellectual Property Counsel  
NASA Johnson Space Center

[REDACTED]  
[REDACTED]  
[REDACTED]  
Fax: [REDACTED]  
E-Mail: [REDACTED]

b(6)

Hi,

The material I sent you was actually with reference to the other Margolin patent 5,506,673.

Best regards,

Mike Abernathy  
Rapid Imaging Software, Inc.

[REDACTED]

b(6)

[www.landform.com](http://www.landform.com)  
[www.visualflight.com](http://www.visualflight.com)

-----Original Message-----

From: FEIN, EDWARD K. (JSC-HA) (NASA) [mailto:[REDACTED]]  
Sent: Monday, June 28, 2004 9:13 AM  
To: 'Mike Abernathy'  
Cc: 'Kennedy, Alan'  
Subject: RE:

[REDACTED] b(6)

Thanks, Mike!

-Ed

-----Original Message-----

From: Mike Abernathy [mailto:[REDACTED]]  
Sent: Monday, June 28, 2004 9:48 AM  
To: FEIN, EDWARD K. (JSC-HA) (NASA)  
Subject:  
Ok, one more:

[REDACTED] b(6)

04607

G. Sachs:

[Redacted]

b(4)

Best regards,

Mike Abernathy  
Rapid Imaging Software, Inc.  
(505) 265 7020

[www.landform.com](http://www.landform.com)  
[www.visualflight.com](http://www.visualflight.com)

✉ RE: FW: Jed Margolin (I 222)

From: DICKERSON, MARY E. (JSC-HA) (NASA) <[Redacted]>  
To: Kathryn L. Bayer <[Redacted]>  
CC: FEIN, EDWARD K. (JSC-HA) (NASA) <[Redacted]>  
Date: Jun 09 2004 - 1:16pm  
Viewed On: -- ?date?

b(6)

[Redacted]

b(5)

-----Original Message-----

From: Kathryn L. Bayer [mailto:[Kathy.Bayer@nasa.gov](mailto:Kathy.Bayer@nasa.gov)]  
Sent: Wednesday, June 09, 2004 1:10 PM  
To: DICKERSON, MARY E. (JSC-HA) (NASA)  
Subject: Re: FW: Jed Margolin (I 222)

[Redacted]

b(5)

At 01:07 PM 6/9/2004 -0500, you wrote:

> [Redacted]  
> [Redacted]  
> [Redacted]  
> [Redacted]

b(5)

>-----Original Message-----

>From: FEIN, EDWARD K. (JSC-HA) (NASA)

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.

---

From: Robert Adams-OTG [mailto: [REDACTED] b(6)]  
Sent: Thursday, February 12, 2009 5:35 PM  
To: McNutt, Jan (HQ-MC000)  
Subject: RE: Jan S. McNutt, Please see the attached letter; it is your response to your most recent letter.

Jan,

We have now licensed Cobham the parent company of Chelton Flight System and expect to wrap up a license for Rockwell in the coming weeks.

Attached you will find the voicemail from Cobham's attorney that concluded a yearlong drawn out process; as I write this letter we await the signed hard copies in the mail.

We shall be filing in Federal Court against Garmin in the coming months as they are the last one who is being definite due to their bad advice from a money hungry attorney.

Can you please provide me a status as to the resolve regarding the issues between our two companies'?

With the recent new licensee's I remain optimistic that this business matter can be resolved peacefully between our two companies.

Thank you,

Robert

From: McNutt, Jan (HQ-MC000) [mailto: [REDACTED] b(6)]  
Sent: Thursday, January 22, 2009 1:16 PM  
To: Robert Adams-OTG  
Subject: RE: Jan S. McNutt, Please see the attached letter; it is your response to your most recent letter.

04613

Dr. Adams,

We are close to a decision on this matter. I will inform you of our progress (possibly decision) in the next couple of weeks.

Regards,

Jan S. McNutt  
Senior Attorney (Commercial)

[REDACTED]

b(6)

---

From: Robert Adams-OTG [mailto:[REDACTED]]  
Sent: Saturday, December 27, 2008 7:27 PM  
To: McNutt, Jan (HQ-MC000)  
Subject: FW: Jan S. McNutt, Please see the attached letter; it is your response to your most recent letter.

b(6)

Mr. McNutt,

Please advise us as to our progress of settlement on this matter and NASA taking a license of our patented technology.

I will advise you that a lack of response or no response could be a violation of Rule 11, thus your continued delay tactics could allow us to move forward and ask the court to impose an appropriate sanction.

Dr. Adams

From: Robert Adams-OTG [mailto:[REDACTED]]  
Sent: Friday, October 03, 2008 5:18 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.

b(6)

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) [mailto: [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,

b(4) [REDACTED]  
[REDACTED] 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)  
[REDACTED]  
HYPERLINK "mailto: [REDACTED]"

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From: Robert Adams-OTG [mailto: [REDACTED] b(6)]  
Sent: Tuesday, September 30, 2008 1:04 PM  
To: McNutt, Jan (HQ-MC000)

Subject: FW: Jan S. McNutt, Please see the attached letter; it is your response to your most recent letter.

Sir,

b(4) [REDACTED]

Dr. Adams

From: Robert Adams-OTG [mailto:[REDACTED]] b(6)  
Sent: Monday, August 25, 2008 3:48 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] Phone

[REDACTED] Fax b(6)

Simply Smarter, Encryption & Aerospace Solutions since 1990! The information contained in this e-mail and any attachments are legally privileged and confidential. If you are not an intended recipient, you are hereby notified that any dissemination, any and all distribution or copying of this e-mail is strictly prohibited without the prior consent of Optima Technology Group (sender). If you have received this e-mail in error, please notify the sender and permanently delete the e-mail and any attachments immediately. You should not retain, copy or use this e-mail or any attachment for any purpose, nor disclose all or any part of the contents to any other person. Thank you.

**Graham, Courtney B. (HQ-MC000)**

---

**From:** Fein, Edward K. (JSC-AL111)  
**Sent:** Monday, August 24, 2009 2:21 PM  
**To:** Graham, Courtney B. (HQ-MC000)  
**Subject:** REVISED AUVS I column v5 clean.doc  
**Attachments:** REVISED AUVS I column v5 clean.doc

04624

**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

**Attachments:** [Redacted] b(5)

[Redacted]

b(5)

-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.**

**From:** Mike Abernathy <[Redacted]>  
**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)

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) [mailto:[Redacted]]  
**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.

b(6)

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

From: Robert Adams [mailto:] 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,

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) [mailto:] 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

**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: 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)

[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]  
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)

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) [mailto:[redacted]]  
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.

b(6)

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

From: Robert Adams [mailto: [REDACTED] b(e)  
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

04642

From: Delgado, Francisco J. (JSC-ER2) [mailto: [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] b(5)

fyi ...

From: Mike Abernathy [mailto: [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 [mailto: [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]; 'Moore, Thomas, Mr, OSD-ATL';  
'Davey, Jon (Bingaman)'  
Subject: and the very last communication of the day

Hi All,

04643

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. 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.

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From: Robert Adams [mailto:] 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 than 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 [mailto:] b(c)  
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 [mailto:] b(c)  
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 [mailto:] 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.

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 < >  
To: FEIN, EDWARD K. (JSC-HA) (NASA) < >  
Kennedy, Alan J. (HQ-MC000) < >  
Date: Sep 25 2006 - 3:08pm  
 image002.gif - 6.9k - [View in Outlook](#)

Ed,

Appendix Volume 7 - A24




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 [mailto:] (b6)  
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. //k

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 departments 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 trial 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](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 in the 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. Appendix Volume 7-A27 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 [mailto: b6)  
Sent: Monday, September 25, 2006 9:08 AM  
To: 'Robert Adams'  
Subject: question

Robert,


Thanks for your offer to call but I am still getting over throat surgery from 2 weeks ago so my phone is forwarded, but I look forward to email from you and/or your attorneys.

In trying to understand the value of your IP I would like to ask 2 questions regarding USP 5,904,724. Was this system ever built? Was it ever flight tested? Of course you need not answer, but it really would be helpful in understanding what is required to get your technology to market.

Mike Abernathy

Rapid Imaging Software, Inc.

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From: Robert Adams [mailto: b6)  
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 [mailto: [REDACTED] b6)  
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.

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.

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.

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.

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Sincerely,

Mike Abernathy

Rapid Imaging Software, Inc.

From: Robert Adams [mailto: [REDACTED]]  
Sent: Tuesday, September 19, 2006 7:53 AM  
To: [REDACTED] (b)(6)  
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 address lines]

b(6)

Sent via US MAIL, FAX & EMAIL

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&src=&type=x&to=[Redacted]&cc=&bcc=&subject=&body=&curmbox=00000000-0000-0000-0000-000000000001&a=ad17460c4976d4c8a2dcf004b74ca88163cef3516fe0531ab7a321b64870d4c"

b(6)

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[Redacted]



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-

-----  
**FW: question**

From: Mike Abernathy <[REDACTED]>  
To: DELGADO FRANCISCO J. (FRANK) <[REDACTED]> b(6)  
<[\[REDACTED\]@jsc.nasa.gov](mailto:[REDACTED]@jsc.nasa.gov)>, 'Fein, Edward K. (JSC-AL)' <[REDACTED]>  
'Kennedy, Alan J. (HQ-MC000)' <[REDACTED]>

Date: Sep 25 2006 - 11:44am  
One more FYI.

Mike Abernathy  
Rapid Imaging Software, Inc.

-----  
From: Mike Abernathy [mailto:[REDACTED]] b(6)  
Sent: Monday, September 25, 2006 10:08 AM  
To: 'Robert Adams'  
Subject: question

Robert,

Thanks for your offer to call but I am still getting over throat surgery from 2 weeks ago so my phone is forwarded, but I look forward to email from you and/or your attorneys.

In trying to understand the value of your IP I would like to ask 2 questions regarding USP 5,904,724. Was this system ever built? Was it ever flight tested? Of course you need not answer, but it really would be helpful in understanding what is required to get your technology to market.

Mike Abernathy  
Rapid Imaging Software, Inc.

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

b(6)

Mike,

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Respectfully,

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04657

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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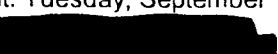

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Sincerely,

Mike Abernathy

Rapid Imaging Software, Inc.

From: Robert Adams [mailto:  
Sent: Tuesday, September 19, 2006 7:53 AM  
To:   
Cc: 

b(6)

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.

b(6)

Sent via US MAIL, FAX & EMAIL

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We are pleased that you recognize the value of using Synthetic Vision to allow UAV's to See-and-Avoid other aircraft; this is covered by our patents as noted above.

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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 "<http://by106fd.bay106.hotmail.msn.com/cgi-bin/compose?mailto=1&msg=0BE8FF07-CD08-47B5-A58D-A825698FD5EB&start=0&len=6480>&src=&type=x&to=[REDACTED]&cc=&bcc=&subject=&body=&curmbox=00000000-0000-0000-0000-000000000001&a=ad17460c4976d4c8a2dcf004b74ca88163cef3516fe0531abada331a64870d4c"[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

RA/cp

-enclosure links-

**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

From: Mike Abernathy [mailto:[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

b(6)

FYI

Mike Abernathy  
Rapid Imaging Software, Inc.

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b(6)

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Robert Adams

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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

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September 19, 2006

Michael F. Abernathy

Rapid Imaging Software, Inc.

[REDACTED]  
[REDACTED]

b(6)

Sent via US MAIL, FAX & EMAIL

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&src=&type=x&to=[redacted]&cc=&bcc=&subject=&body=&curmbox=  
00000000-0000-0000-0000-000000000001  
&a=ad17460c4976d4c8a2dcf004b74ca88163cef3516fe0531abada331a64870d4c  
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b(6)

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Optima Technology Group

RA/cp

-enclosure links-

**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  
Thanks, Mike.

b(6)

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b(6)

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September 19, 2006

Michael F. Abernathy

Rapid Imaging Software, Inc.

[Redacted address lines]

b(6)

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We are pleased that you recognize the value of using Synthetic Vision to allow UAV's to See-and-Avoid other aircraft; this is covered by our patents as noted above.

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 "<http://by106fd.bay106.hotmail.msn.com/cgi-bin/compose?mailto=1&msg=0BE8FF07-CD08-47B5-A58D-A825698FD5EB&start=0&len=6480>

[00000000-0000-0000-0000-000000000001](mailto:00000000-0000-0000-0000-000000000001)

b(6)

[ad17460c4976d4c8a2dcf004b74ca88163cef3516fe0531abada331a64870d4c](mailto:ad17460c4976d4c8a2dcf004b74ca88163cef3516fe0531abada331a64870d4c) to arrange a proper license of said intellectual property. You have 15 days to do so.

Appendix Volume 7 - A44

Sincerely,

Robert Adams, CEO

Optima Technology Group

RA/cp

-enclosure links-

**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]>

b(6)

Date: Sep 25 2006 - 9:59am

Thanks, Mike!

-----

**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]>

b(6)

Date: Sep 25 2006 - 8:55am

I'm including Alan Kennedy, the attorney at NASA Headquarters who handles patent infringement for the agency, on this response. I believe your (Mike's) response to Optima is quite thorough and could very well diffuse this issue. I'm not sure a telecon at this time is warranted. I suggest we wait to see Optima's response.

Alan, do you have any additional thoughts?

-Ed

Edward K. Fein  
Deputy Chief Counsel/  
Intellectual Property Counsel

[redacted]  
[redacted]  
[redacted]

b(6)

Telephone: [redacted]

Fax: [redacted]

E-Mail: [redacted]

04668

---


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 [mailto:] *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 [mailto:] *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,

Appendix Volume 7 - A46

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 departments 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 in the 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.

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.

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 NASA's many publications on X-38 control systems.

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 are 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]  
[REDACTED]

b(6)

Sent via US MAIL, FAX & EMAIL

Mr. Abernathy,

Appendix Volume 7 - A48

04671



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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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b(6)

Sincerely,

Robert Adams, CEO  
Optima Technology Group

RA/cp

-enclosure links-

**RE: Rapid Imaging Software, Inc. patent infringement**  
From: Delgado, Francisco J. (JSC-ER2) <[redacted]>  
To: Mike Abernathy <[redacted]> Fein, Edward K. (JSC-AL) <[redacted]>

b(6)

Date: Sep 25 2006 - 1:13am

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 [mailto: [REDACTED] b(e)  
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To: Fein, Edward K. (JSC-AL); Delgado, Francisco J. (JSC-ER2)  
Subject: Rapid Imaging Software, Inc. patent infringement

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Mike Abernathy

Rapid Imaging Software, Inc.

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Sincerely,

Mike Abernathy

Rapid Imaging Software, Inc.

From: Robert Adams [mailto: [REDACTED] b6)  
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] b6)  
[REDACTED]

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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Sincerely,

Robert Adams, CEO  
Optima Technology Group

RA/cp

-enclosure links-

**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(e)

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 [mailto:[redacted]]  
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

b(e)

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.

b(5)

[Redacted signature block]

[Redacted] b(5)

Take care ...

-Ed

-----Original Message-----

From: Barry V. Gibbens, LaRC [mailto:Barry.V.Gibbens@NASA.GOV]  
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?????

b(5) [Redacted]

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

Hi Alan (and others),

Just to clarify the message below, I spoke with Mike Abernathy this morning, and I've spoken with Dan Baize on a number of occasions concerning this topic. I've also spoken with you (Alan) briefly, and with Linda Blackburn, Patent Counsel here at Langley (not Linda "Blackwell" :-). It seems clear that the technical folks have determined that the Margolin patent on Synthetic Vision creates a substantial problem for many of our partners in the aviation safety industry for a variety of reasons. It also seems clear that there is substantial prior art in existence to make an argument for re-examination of the Margolin patent. Linda has stated that we at Langley are willing to support an analysis of this situation at the Center level. She has, however, also told me that we first need to perform a formal infringement analysis to confirm (from a legal perspective) that we are in fact practicing the ~~Appendix Volume 7, A54~~ claims. If that analysis shows probable

infringement, then we can proceed with a re-examination request, which Dan Baize has indicated he would be willing to fund. It is my understanding that you (again Alan) gave your blessing this morning for us to proceed at the Center level on these activities. If that is the case, I'll go ahead and begin moving on the formal infringement analysis, keeping you apprised of progress as it develops. Please let me know if you are in agreement with the situation as I have described it. If so, I'll begin work here shortly.

Thanks,  
Barry

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 be 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 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]  
[www.rapidimaging.com](http://www.rapidimaging.com)

HYPERLINK "<http://www.visualflight.com/>"[www.visualflight.com](http://www.visualflight.com)

b(6)

Barry V. Gibbens  
NASA Langley Research Center  
Intellectual Property Law Team - Office of Chief Counsel

[REDACTED]

phone: [REDACTED]  
fax: [REDACTED]  
email: [REDACTED]  
wwwwebsite: <http://tech-transfer.larc.nasa.gov/>

b(6)

NEW E-MAIL ADDRESS: Please note that effective immediately, my e-mail address is now [Barry.V.Gibbens@nasa.gov](mailto:Barry.V.Gibbens@nasa.gov). Please update your mail systems accordingly. Thanks.

Barry V. Gibbens  
NASA Langley Research Center  
Intellectual Property Law Team - Office of Chief Counsel

[REDACTED]

phone: (757) 864-7141  
fax: (757) 864-9190  
email: [REDACTED]  
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Barry V. Gibbens  
NASA Langley Research Center  
Intellectual Property Law Team - Office of Chief Counsel

[Redacted]

phone: [Redacted] b(6)  
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Take care ...

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Best regards,

Mike Abernathy  
Rapid Imaging Software, Inc.

[REDACTED] yla

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HYPERLINK "<http://www.visualflight.com/>"[www.visualflight.com](http://www.visualflight.com/)

Appendix Volume 7 - A57

04680

Barry V. Gibbens  
NASA Langley Research Center  
Intellectual Property Law Team - Office of Chief Counsel

[Redacted]

phone: [Redacted]  
fax: [Redacted]  
email: [Redacted]  
wwwwebsite: <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.

b(6)

Barry V. Gibbens  
NASA Langley Research Center  
Intellectual Property Law Team - Office of Chief Counsel  
Mail Stop 212  
Hampton, VA 23681-0001

phone: (757) 864-7141  
fax: (757) 864-9190  
email: [Redacted]  
wwwwebsite: <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]>

b(6)

(NASA) <[Redacted]>  
Date: Sep 01 2004 - 12:51pm

b(5)

[Large redacted block]

-Ed

-----Original Message-----

From: Mike Abernathy [mailto:[Redacted]] Volume 7 - A58

04681

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]

b(6)

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[www.visualflight.com](http://www.visualflight.com)

-----Original Message-----

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

b(6)

Barry Gibbens is a good man, Mike, and no, you haven't sent me the claims analysis. I am pleased to learn that the Agency is moving on this.

-Ed

-----Original Message-----

From: Mike Abernathy [mailto:[Redacted]]  
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,

b(6)

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](http://www.visualflight.com)

-----Original Message-----

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

b(6)

Thanks, Mike, for keeping me in the loop.

-Ed

-----Original Message-----

From: Mike Abernathy [mailto:[Redacted]]  
Sent: Wednesday, September 01, 2004 10:38 AM  
Appendix Volume 7 - A59

04682

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,

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 be 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 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]

**RE: US Patents 5566073 and 5904724** b(6)

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](http://www.visualflight.com)

-----Original Message-----

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

b(6)

thanks!

-----Original Message-----

From: Mike Abernathy [mailto:[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](http://www.visualflight.com)

-----Original Message-----

From: FEIN, EDWARD K. (JSC-HA) (NASA) [mailto:[edward.k.fein@nasa.gov](mailto:edward.k.fein@nasa.gov)]  
Sent: Wednesday, September 01, 2004 11:19 AM  
To: 'Mike Abernathy'  
Subject: RE: US Patents 5566073 and 5904724

(5) [Redacted]

-Ed

-----Original Message-----

From: Mike Abernathy [mailto:[\[Redacted\]](mailto:)] b(b)  
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  
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Have I sent you the claims analysis yet?

Best regards,

Mike Abernathy  
Rapid Imaging Software, Inc.

[Redacted] b(c)  
[www.landform.com](http://www.landform.com)  
[www.visualflight.com](http://www.visualflight.com)

-----Original Message-----

From: FEIN, EDWARD K. (JSC-HA) (NASA) [mailto:[\[Redacted\]](mailto:)]  
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. b(c)

-Ed


-----Original Message-----

From: Mike Abernathy [mailto:[\[Redacted\]](mailto:)]  
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,

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Best regards,

Mike Abernathy  
Rapid Imaging Software, Inc.




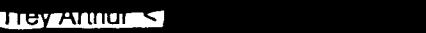
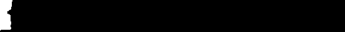
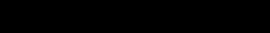

 b(6)  
[www.landform.com](http://www.landform.com)  
[www.visualflight.com](http://www.visualflight.com)



Claims Analysis of  
Patent.doc ...

**Re: US Patents 5566073 and 5904724**

From: Barry V. Gibbens, LaRC   
To: Mike Abernathy , 'Kennedy, Alan' <

CC: Linda B. Blackburn < >, Dan Baize < >, DELGADO  
, Trey Arthur < >, FRANCISCO J. (FRANK) , FEIN, EDWARD  
K. (JSC-HA) (NASA) < >, Eric Boe <

Date: Sep 01 2004 - 11:29am

Hi Alan (and others),

Just to clarify the message below, I spoke with Mike Abernathy this morning, and I've spoken with Dan Baize on a number of occasions concerning this topic. I've also spoken with you (Alan) briefly, and with Linda Blackburn, Patent Counsel here at Langley (not Linda "Blackwell" :-). It seems clear that the technical folks have determined that the Margolin patent on Synthetic Vision creates a substantial problem for many of our partners in the aviation safety industry for a variety of reasons. It also seems clear that there is substantial prior art in existence to make an argument for re-examination of the Margolin patent. Linda has stated that we at Langley are willing to support an analysis of this situation at the Center level. She has, however, also told me that we first need to perform a formal infringement analysis to confirm (from a legal perspective) that we are in fact practicing the patent as described by its claims. If that analysis shows probable infringement, then we can proceed with a re-examination request, which Dan Baize has indicated he would be willing to fund. It is my understanding that you (again Alan) gave your blessing this morning for us to proceed at the Center level on these activities. If that is the case, I'll go ahead and begin moving on the formal infringement analysis, keeping you apprised of progress as it develops. Please let me know if you are in agreement with the situation as I have described it. If so, I'll begin work here shortly.

Thanks,  
Barry

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 be 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)

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HYPERLINK "<http://www.visualflight.com/>"[www.visualflight.com](http://www.visualflight.com)

Barry V. Gibbens  
NASA Langley Research Center  
Intellectual Property Law Team - Office of Chief Counsel

[Redacted]

phone: [Redacted]  
fax: [Redacted]  
email: [Redacted]  
wwwwebsite: <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.

---

**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

Hello Mr. Fein,

I am a new attorney working commercial law and also helping out Gary and Bob. Do you remember working on this infringement claim, and if so, what was the outcome, if any? See attached.

<< File: Kennedy to JSC.pdf >> << File: Margolin FOIA.pdf >> << File: Letter from Optima 20080714.pdf >>

Thank you,

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

Appendix Volume 7 - A63



b(6)



From: "FEIN, EDWARD K. (JSC-HA) (NASA)" <[redacted]>  
 To: "Mike Abernathy" <[redacted]>  
 Cc: "Kennedy, Alan" <[redacted]> b(6)  
 "DELGADO, FRANCISCO J. (FRANK) (JSC-ER2) (NASA)" <[redacted]>  
 Subject: RE:  
 Date: Mon, 28 Jun 2004 14:54:17 -0500  
 X-Mailer: Internet Mail Service (5.5.2657.72)  
 X-imss-version: 2.5  
 X-imss-result: Passed  
 X-imss-approveListMatch: \*@nasa.gov

Very interesting, Mike. Much thanks! I'm cc'ing Alan Kennedy, in the Office of General Counsel, who has been coordinating this matter.

-Ed

-----Original Message-----

From: Mike Abernathy [mailto:[redacted]] b(6)  
 Sent: Monday, June 28, 2004 2:43 PM  
 To: FEIN, EDWARD K. (JSC-HA) (NASA)  
 Subject:

Hi Ed,

Here is a summary plus a few more things that we found.

In patent #5566073 the owner asserts claim on what can be generally described as a method for "Pilot aid using a synthetic environment" which involves using the information about the airplane flight status to drive a synthetic reality display by creating a 3D synthetic scene. This technology is called synthetic vision by other researchers. He also asserts claim for a version of this system to unmanned aerial vehicles in patent 5904724.

I do not understand how the first patent can be valid given that there was widely published research and flight testing being conducted in this field prior to this time. A good example of the prior art is shown in the DELPHIN I synthetic vision developed at the U of Delft in Holland and flown in 1994.

This patent claims in the 1995 application that it developed the method of pilot aid using a 3D synthetic environment. But at this webpage, you can see that a Dutch university had already flown such an environment in 1994:  
<http://www.synthetic-vision.tudelft.nl/>

(See First flight of the DELPHINS Tunnel-in-the-sky display at the bottom of the list of links).

Here is an example of papers published in widely distributed engineering journals describing what seems to me to be a very similar system.

H. Möller, G. Sachs:

Synthetic Vision for Enhancing Poor Visibility Flight Operations.

IEEE Aerospace and Electronic Systems Magazine, Volume 9, No. 3, S. 27-30, 1994

G. Sachs, H. Möller, K. Dobler, G. Schänzer, K. Möhlenkamp:

Bodenrollführung durch synthetische Sicht und Präzisionsnavigation.

Jahrbuch 1994 I der Deutschen Gesellschaft für Luft- und Raumfahrt, Bonn, S. 475-482, 1994

G. Sachs, H. Möller, K. Dobler, G. Schänzer, K. Möhlenkamp:

Computer Generated Vision for Improving On-Board Guidance and Control of Surface Movement.

ECAC/APATSI and EC Workshop on Surface Movement Guidance and Control Systems,

Frankfurt/Main, 6.4.-8.4. 1994, European Civil Aviation Conference, Bretigny-sur-Orge, France,

ECAC/APATSI Paper S. 1-10, 1994  
Appendix Volume 7- A65

04698

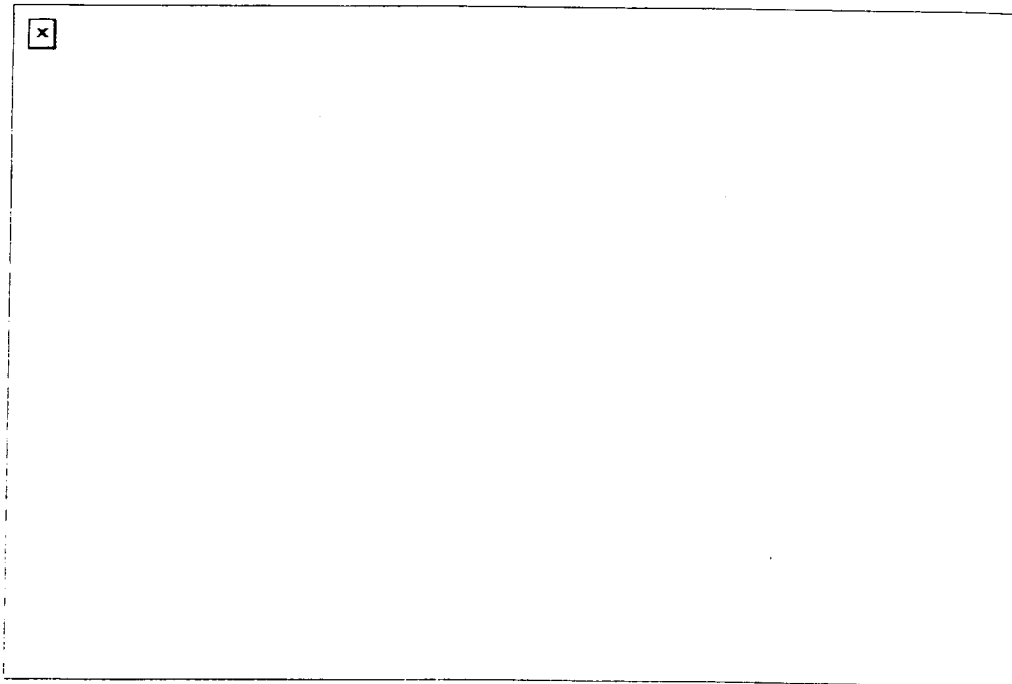
G. Sachs, H. Möller, K. Dobler, G. Schänzer, K. Möhlenkamp:  
Synthetic Vision and Precision Navigation for Aircraft Taxi Guidance in Low Visibility.  
AIAA Guidance, Navigation and Control Conference Proceedings, Scottsdale, AZ, August 1.-3., S. 1202-1211, 1994

Finally, please look at this history of perspective flightpath displays. In light of this I cannot understand the basis for a these two patents.

<http://www.delphins.tudelft.nl/history.html>

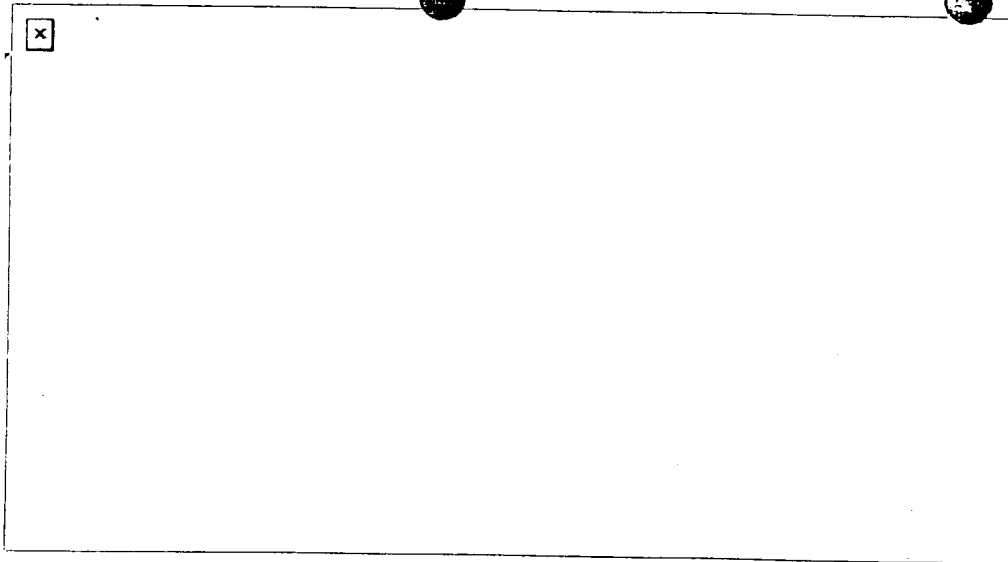
## DELPHINS first flight test

The first flight test of the DELPHINS system took place in december 1994. To achieve this, the Radionavigation group rented the Citation II laboratory aircraft that is jointly owned by Delft University and the National Aerospace Laboratory NLR. All display hardware and software that was used in this flight was developed by the Radionavigation group of the Faculty of Electrical Engineering, nowadays part of Faculty of Information Technology and Systems

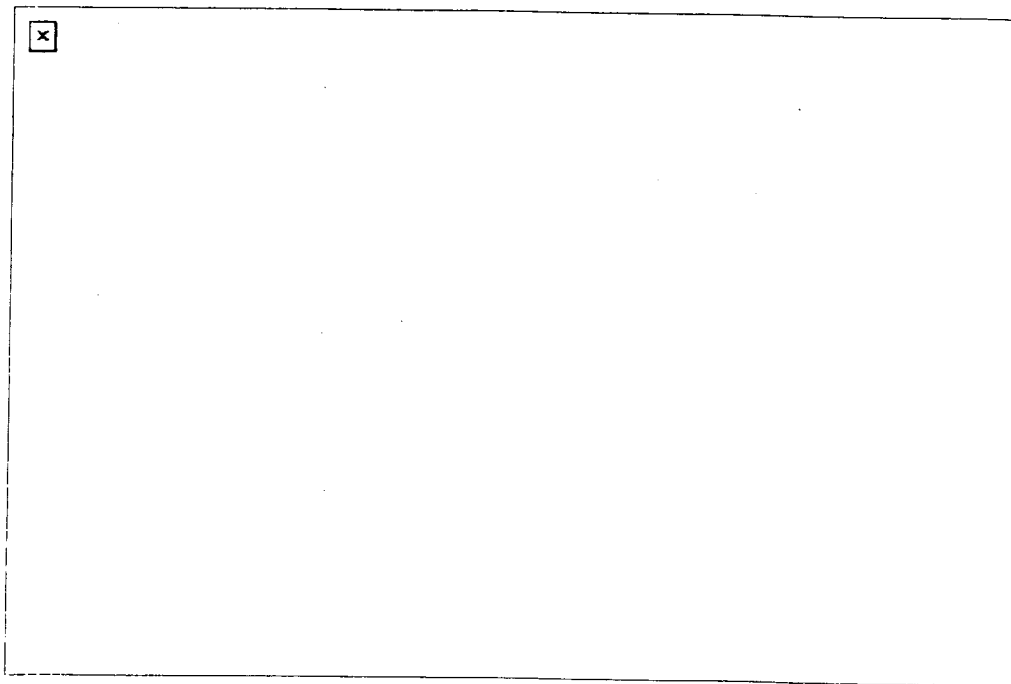


Installation of the experimental display in the cockpit of the Citation II

04699



Erik Theunissen (TU Delft, Faculty of Electrical Engineering) preparing the system the evening before first flight. The yellow marking shows the experimental display in the cockpit




First test flight of the DELPHINS Tunnel-in-the-Sky display (december 19, 1994) from Amsterdam to Aberdeen

I look forward to reading your thoughts.

Best regards,

Mike Abernathy  
Rapid Imaging Software, Inc.

  
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[www.visualflight.com](http://www.visualflight.com)

*b(4)*



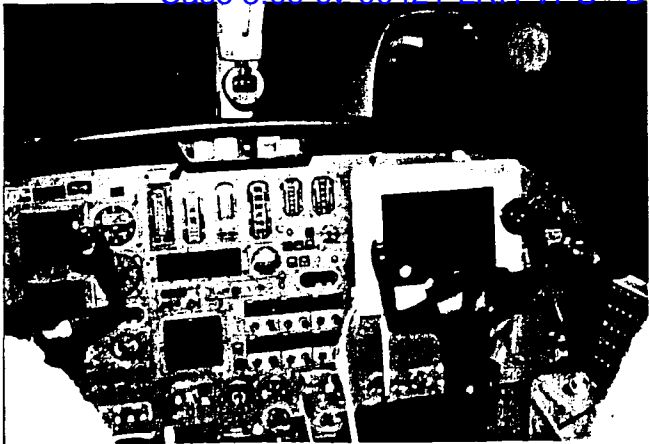
image0011.jpg

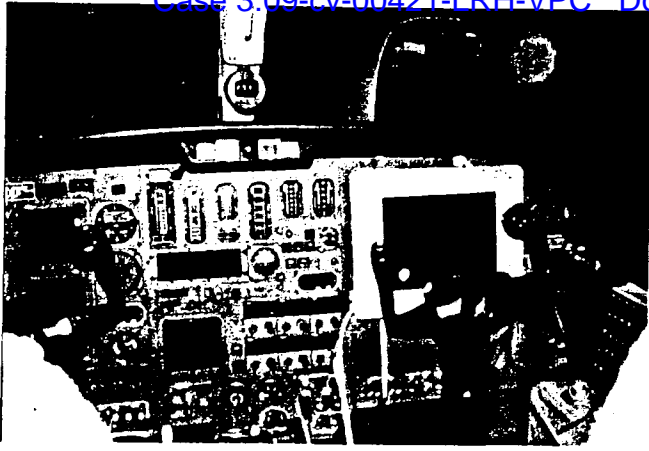


image002.jpg



image003.jpg





04703



04704



04705







# De rust van een fuik

NAVIGATIE  
door MARK TRAA

In een oogopslag zien of je op de juiste koers zit is er voor piloten nu nog niet bij. Een vluchtdiek vol klokjes en meterjes geeft een overdosis informatie. Maar in de toekomst wordt de essentie van het vliegen afgebeeld op een beeldscherm dat de piloot veilig door een kunstmatige tunnel voert.

Het grote verschil tussen een vliegtuig en een auto is dat de laatste zich over de weg begeeft. Het klikt als een open deur (en dat is het ook), maar juist dit gegeven maakt vliegen zo veel moeilijker dan autorijden.

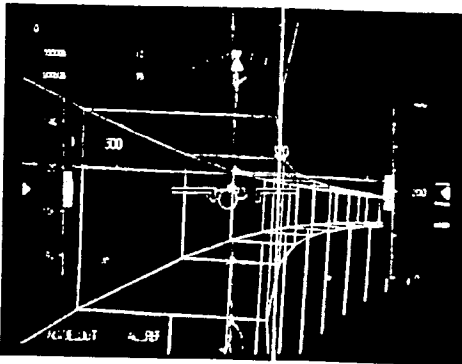
Navigeren op de snelweg is een eufje. Het asfalt strekt zich tientallen, soms honderden meters of nog verder voor de auto uit en dat maakt anticiperen mogelijk. Een piloot heeft het moeilijker. Hij beweegt zich in drie dimensies en heeft amper aanknopingspunten: geen strepen, geen vangrails, geen bordjes. Koers houden doet een piloot door metertjes af te lezen die onder meer de stand van het vliegtuig, de snelheid, de hoogte, de kompasrichting en de stijgsnelheid aangeven. Bij de nadering van een vliegveld zijn er wel kaarten beschikbaar, maar die willen nogal eens afleiden en moeten bovendien door de piloot worden 'vertaald' naar de werkelijke situatie.

Doordat het luchtverkeer steeds drukker wordt, zal de nadering van een vliegveld in de toekomst lastiger worden - dichtger in elk geval. Nu zorgt een piloot dat hij bij het aanvliegen in het vliegveld van de landingsbaan komt en

in de greep raakt van bakens die radiosignalen uitzenden. Dan is het zaak om een paar schuivende naalden op de kunstmatige horizon in de cockpit te volgen: ietsje naar beneden, een tikje naar rechts. Dat lijkt eenvoudig, op een vrijwel rechte weg zo'n naald achterna sturen. Het wordt lastiger als er bochten in het traject komen. Probeer het maar eens in de auto: als je even naar de strepen in het midden van de weg tuurt, er voor zorgend dat je er hooguit een paar van tevoren ziet aankomen, rijd je direct een stuk krampachtiger. Je bent geneigd, een overdreven grote ruk aan het stuur te geven zodra de strepen lijken af te buigen. Komt er een scherpe bocht of een flauwe? Een afrit misschien?

## Vangrail

Het is duidelijk dat er wat verbeterd kan worden aan de situational awareness van de piloot. Hij moet zich bewust zijn van de situatie om hem heen en de plaats van zijn eigen toestel. Dat kan door een weg aan te leggen voor het vliegtuig. Of beter nog - vanwege die drie dimensies - een tunnel. Een tunnel in de sky, daarover ging de lezing die ik Erik Theunissen gisteren held op het luchtvaartsymposium 'Looking Ahead' in de RAI. Theunissen is verbonden aan de faculteit Elektrotechniek van de TU Delft en hoopt te promoveren op een project dat hij in 1990 begon het DELFT Program for Hybridized Instrumentation and Navigation Systems (DELPHINS). Wat hem betreft stuurt de piloot van de toekomst zijn



Vliegen door een tunnel: voor piloten een veel ontspannender manier van oriënteren dan metertjes aflezen in het vrije vliegveld.

toestel als in een videospelletje door een tunnel die is geprojecteerd op een beeldscherm.

„Dat is inderdaad vaak de eerste reactie, het lijkt wel een videospelletje”, zegt Theunissen als hij op een computerscherm een vliegtuigsymbool behendig door een rechthoekige tunnel stuurt. De tunnel is niet dicht, maar is opgebouwd als een draadmodel; daardoor is het verdere verloop ervan tot aan de (kunstmatige) horizon te zien. Over anticiperen gesproken.

„Doordat hij straks steeds meer bochten moet gaan maken, is het mentale plaatje van de vlieger ingewikkelder geworden. Voor hem is het heel belangrijk dat hij een idee heeft waar hij is, waar hij naartoe moet en hoe hij daar komt. Daarvoor dient zo'n tunnel. Als de piloot die op zijn scherm ziet, hoeft hij alleen nog te zorgen dat hij erin komt. In een oogopslag ziet hij vervolgens hoe het traject verder loopt en of hij dreigt af te wijken. Dat hele intensieve getuig naar de instrumenten hoeft dan niet meer. Naar buiten kijken blijft overigens gewoon mogelijk; het tunnelscherm wordt ingebouwd in het vluchtdiek tussen de andere instrumenten.”

Het is niet zo dat de luchtunnel in één klap alle cockpitinstrumenten vervangt. De belangrijkste meters bixen prima onder te brengen in het tunnelplaatje dat de piloot ziet. Dat gold onder meer voor de stand van het vliegtuig en de kompasrichting. Andere gegevens, zoals de snelheid en de hoogte, blijft de piloot aflezen op een cijferschaal. Die kan echter geprojecteerd worden op het tunnelscherm, zodat het exact aflezen mogelijk blijft zonder dat de piloot alsnog zijn aandacht op een meterje eiders in de cockpit hoeft te richten.

## Losse pois

Theunissen: „Als je een bepaalde stuuractie inzet, dan weet je dat je dat niet met onnodige nauwkeurigheid kunt doen. Je bent dus gebaat bij informatie die aangeeft hoe veel je afwijkt. Als je dichtbij de randen van de tunnel komt - in teite de vangrail - is het wel

zaak dat je die informatie gebruikt.” Het is volgens Theunissen niet de bedoeling dat piloten overmoedig gaan worden en met de losse pois door zo'n tunnel gaan sjezen. De tunnel is immers niet breder dan absoluut noodzakelijk; dat bevordert de nauwkeurigheid waarmee wordt gestuurd. Ook blijft het gewoon opletten geboden, hoewel de intensiteit van het sturen wordt vermindert. De schuivende naalden in de 'oude' cockpit zijn vervangen door een vliegtuigsymboolje dat door de tunnel vliegt. In een oogopslag zie je of dat ding de goede kant op gaat, is dat niet het geval, dan kan ingrijpen gewenst zijn. Kan, want dank zij het tunnelzicht zie je meteen of het wel zo'n ramp is als je toestel wat naar links afwijkt, als er straks toch naar links moet worden gegraaid, dan is een correctie misschien helemaal niet nodig.

In een tijd dat vliegtuigtrajecten ingewikkelder worden en cockpits worden volgestopt met allerlei nieuwverwete snuffes, zou de kunstmatige luchtunnel voor enige verlichting kunnen zorgen. Vooral bij de nadering van een landingsbaan kan zo'n visuele 'fuik' - de tunnel wordt immers steeds smaller naarmate er preciezer moet worden gevlogen - een aardig hulpmiddel zijn. De piloten die DELPHINS inmiddels in een simulator zonder uitnoering enthousiast. Als het onderzoekproject aan de TU Delft is afgerond, is het wachten op een fabrikant van vliegtuigapparatuur die in de tunnel wil duiken.

## De rust van een fuik

NAVIGATIE  
door MARK TRAA

In een oogopslag zien of je op de juiste koers zit is er voor piloten nu nog niet bij. Een vluchtdiek vol klokjes en meterijes geeft een overdosis informatie. Maar in de toekomst wordt de essentie van het vliegen afgebeeld op een beeldscherm dat de piloot veilig door een kunstmatige tunnel voert.

Het grote verschil tussen een vliegtuig en een auto is dat de laatste zich over de weg begeeft. Het slinkt als een open deur (en dat is het ook), maar juist dit gegeven maakt vliegen zo veel moeilijker dan autorijden.

Navigeren op de snelweg is een eitje. Het asfalt strekt zich tientallen, soms honderden meters of nog verder voor de auto uit en dat maakt anticiperen mogelijk. Een piloot heeft het moeilijker. Hij beweegt zich in drie dimensies en heeft amper aanknopingspunten: geen strepen, geen vangrails, geen bordes. Koers houden doet een piloot door meterijes al te lezen die onder meer de stand van het vliegtuig, de snelheid, de hoogte, de kompasrichting en de stijgsnelheid aangeven. Bij de nadering van een vliegveld zijn er wel kaarten beschikbaar, maar die willen nogal eens afleiden en moeten bovendien door de piloot worden vertaald naar de werkelijke situatie.

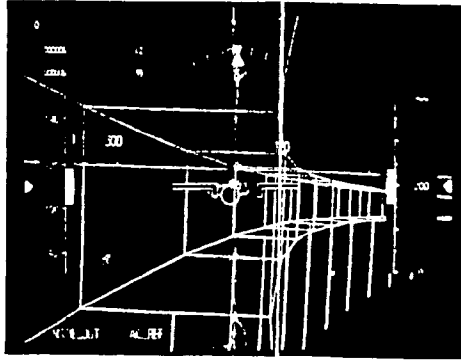
Doordat het luchtverkeer steeds drukker wordt, zal de nadering van een vliegveld in de toekomst lastiger worden. Bochtiger in elk geval. Nu zorgt een piloot dat hij bij het aanvliegen in het verlengde van de landingsbaan komt en

in de greep raakt van bakens die radiosignalen uitzenden. Dan is het zaak om een paar schuivende naalden op de kunstmatige horizon in de cockpit te volgen: ietsje naar beneden, een lijn naar rechts.

Dat lijkt eenvoudig, op een vrijwel rechte weg zo'n naald achterna sturen. Het wordt lastiger als er bochten in het traject komen. Probeer het maar eens in de auto: als je even naar de strepen in het midden van de weg tuurt, er voor zorgt dat je er hooguit een paar van tevoren ziet aankomen, rijdt je direct een stuk krampachtiger. Je bent geneigd, een overdreven grote ruk aan het stuur te geven zodra de strepen lijken af te buigen. Komt er een scherpe bocht of een slauwe? Een afrit misschien?

### Vangrail

Het is duidelijk dat er wat verbeterd kan worden aan de *situational awareness* van de piloot. Hij moet zich bewust zijn van de situatie om hem heen en de plaats van zijn eigen toestel. Dat kan door een weg aan te leggen voor het vliegtuig. Of beter nog - vanwege de drie dimensies - een tunnel. Een tunnel in the sky, daarover ging de lezing die ir. Erik Theunissen gisteren hield op het luchtvaartsymposium 'Looking Ahead' in de RAI. Theunissen is verbonden aan de faculteit Elektrotechniek van de TU Delft en hoopt te promoveren op een project dat hij in 1990 begon: het *DELFT Program for Hybridized Instrumentation and Navigation Systems* (DELPHINS). Wat hem betreft stuurt de piloot van de toekomst zijn



Vliegen door een tunnel: voor piloten een veel ontspannender manier van oriënteren dan meterijes aflezen in het vrije lichtruim. FOTO: IUB

toestel als in een videospelletje door een tunnel die is geprojecteerd op een beeldscherm.

„Dat is inderdaad vaak de eerste reactie: het lijkt wel een videospelletje”, zegt Theunissen als hij op een computerscherm een vliegtuigsymbool behendig door een rechthoekige tunnel stuurt. De tunnel is niet dicht, maar is opgebouwd als een draadmodel, waardoor is het verdere verloop ervan tot aan de (kunstmatige) horizon te zien. Over anticiperen gesproken.

„Doordat hij straks steeds meer bochten moet gaan maken, is het mentale plaatje van de vlieger ingewikkelder geworden. Voor hem is het heel belangrijk dat hij een idee heeft waar hij is, waar hij naartoe moet en hoe hij daar komt. Daarvoor dient zo'n tunnel. Als de piloot die op zijn scherm ziet, hoeft hij alleen nog te zorgen dat hij erin komt. In een oogopslag ziet hij vervolgens hoe het traject verder loopt en of hij dreigt af te wijken. Dat hele intensieve getuig naar de instrumenten hoeft dan niet meer. Naar buiten kijken blijft overigens gewoon mogelijk; het tunnelscherm wordt ingebouwd in het vluchtdiek tussen de andere instrumenten.”

Het is niet zo dat de luchtunnel in een klap alle cockpitinstrumenten vervangt. De belangrijkste meters bleken prima onder te brengen in het tunnelsplaatje dat de piloot ziet. Dat gold onder meer voor de stand van het vliegtuig en de kompasrichting. Andere gegevens, zoals de snelheid en de hoogte, blijft de piloot aflezen op een cijferschaal. Die kan echter geprojecteerd worden op het tunnelscherm, zodat het exact aflezen mogelijk blijft zonder dat de piloot alsnog zijn aandacht op een meterijes elders in de cockpit hoeft te richten.

### Losse pols

Theunissen: „Als je een bepaalde stuuractie inzet, dan weet je dat je dat niet met oneindige nauwkeurigheid kunt doen. Je bent dus gebaat bij informatie die aangeeft hoe veel je afwijkt. Als je dichter bij de randen van de tunnel komt - in te te vanvangrail - is het wel

zaak dat je die informatie gebruikt.” Het is volgens Theunissen niet de bedoeling dat piloten overmoedig gaan worden en met de losse pols door zo'n tunnel gaan sjezen. De tunnel is immers niet breder dan absoluut noodzakelijk; dat bevordert de nauwkeurigheid waarmee wordt gestuurd. Ook blijft het gewoon opletten geboden, hoewel de intensiteit van het sturen wordt vermindert. De schuivende naalden in de 'oude' cockpit zijn vervangen door een vliegtuigsymbooltje dat door de tunnel vliegt. In een oogopslag zie je of dat ding de goede kant op gaat. Is dat niet het geval, dan kan ingrijpen gewenst zijn. Kan, want dank zij het tunnelzicht zie je meteen of het wel zo'n ramp is als je toestel wat naar links afwijkt; als er straks toch naar links moet worden geredraaid, dan is een correctie misschien helemaal niet nodig.

In een tijd dat vliegtrajecten ingewikkelder worden en cockpit worden volgestopt met allerlei nieuwe wetten snuffes, zou de kunstmatige luchtunnel voor enige verlichting kunnen zorgen. Vooral bij de nadering van een landingsbaan kan zo'n visuele 'fuik' - de tunnel wordt immers steeds smaller naarmate er preciezer moet worden gevlogen - een aardig hulpmiddel zijn. De piloten die DELPHINS inmiddels in een simulator hebben getest, zijn volgens Theunissen zonder uitzondering enthousiast. Als het onderzoeksproject aan de TU Delft is afgerond, is het wachten op een fabrikant van vliegtuigapparatuur die in de tunnel wil duiken.



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

January 22, 2009

Reply to Attn of: Office of the General Counsel

Mr. Jed Margolin

[Redacted]

b(6)

Re: FOIA Request No. 10-F-2008-270

Dear Mr. Margolin,


Please contact our Freedom of Information Act (FOIA) Office below concerning the above FOIA request. That office should be providing you with a response to your FOIA request.

NASA Headquarters  
300 E Street, SW

[Redacted]

b(6)

Sincerely,

  
Jan S. McNutt  
Attorney-Advisor

Jed Margolin

Ph: [redacted]

email: [redacted]

January 21, 2009

b(6)

Mr. Jan S. McNutt  
Office of the General Counsel  
National Aeronautics and Space Administration  
Headquarters

Fax: [redacted]

b(6)

Dear Mr. McNutt.

I filed a FOIA Request on June 30, 2008. It was given a designation of HQ 08-270.

On August 5, 2008 you asked me to give NASA a 90-day extension. I agreed, which extended NASA's deadline to around November 5, 2008.

You failed to confirm the terms of my agreement to extend NASA's time to respond and you have failed to respond to the FOIA request.

Please confirm that:

1. NASA has no intention of complying with the FOIA.
2. I have exhausted all of NASA's administrative remedies in this matter.

Sincerely yours,

/Jed Margolin/  
Jed Margolin

Cc: Robert Cobb, NASA Inspector General

[redacted]

b(6)

**Jed Margolin**

**From:** "Jed Margolin" <[REDACTED]>  
**To:** "McNutt, Jan (HQ-MC000)" <[REDACTED]>  
**Sent:** Friday, August 08, 2008 10:18 AM  
**Attach:** jm\_nasa\_foia\_x.pdf  
**Subject:** Re: NASA FOIA HQ 08-270

b(6)

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]  
[REDACTED]

b(6)

----- Original Message -----

**From:** "McNutt, Jan (HQ-MC000)" <[REDACTED]>  
**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)

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b(6)

unintended recipients or in a manner inconsistent with its provision is not authorized and may be unlawful.

-----Original Message-----

From: Jed Margolin [mailto: [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

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[REDACTED]

**From:** Robert Adams-OTG ([REDACTED] b(6))  
**Sent:** Wednesday, August 06, 2008 11:17 AM  
**To:** McNutt, Jan (HQ-MC000)  
**Subject:** RE: Jan, please forward me a copy of the letter that you stated was sent out last Friday.. [REDACTED]  
**Attachments:** jm\_assign.pdf

[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.

[REDACTED]

I look forward to hearing from you shortly.

b(4)

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:** RE: Jan, please forward me a copy of the letter that you stated was sent out last Friday...OFFER TO COMPROMISE, SUBJECT TO RULE 408 FED. R. EVID.

Dr. Adams,

Please see attached.

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

[REDACTED] b(6)

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[REDACTED]

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.

**From:** Robert Adams-OTG [mailto: [REDACTED] b(6)  
**Sent:** Tuesday, August 05, 2008 3:06 PM  
**To:** McNutt, Jan (HQ-MC000)  
**Subject:** FW: Jan, please forward me a copy of the letter that you stated was sent out last Friday.. [REDACTED]

**From:** Robert Adams-OTG [mailto:radams@optimatechnologygroup.com]  
**Sent:** Monday, August 04, 2008 6:21 PM  
**To:** 'mcnuttj@ncr.disa.mil'  
**Cc:** 'M. Lawrence Oliverio'  
**Subject:** Jan, please forward me a copy of the letter that you stated was sent out last Friday.. [REDACTED]

CONFIDENTIAL

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-exclusive) 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] Phone b(6)  
[REDACTED] Fax

Simply Smarter, Encryption & Aerospace Solutions since 1990! The information contained in this e-mail and any attachments are legally privileged and confidential. If you are not an intended recipient, you are hereby notified that any dissemination, any and all distribution or copying of this e-mail is strictly prohibited without the prior consent of Optima Technology Group (sender). If you have received this e-mail in error, please notify the sender and permanently delete the e-mail and any attachments immediately. You should not retain, copy, use this e-mail or any attachment for any purpose, nor disclose all or any part of the contents to any other person. Thank you.

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04775

**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]  
**To:** nasafoia@nasa.gov [REDACTED]  
**Sent:** Sat Jun 28 21:05:56 2008  
**Subject:** FOIA Request

b(6)

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

b(6)

[www.jmargolin.com](http://www.jmargolin.com) <<http://www.jmargolin.com>>

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Appendix Volume 1-181  
08-270  
1

National Aeronautics and  
Space Administration

Headquarters  
[REDACTED] b(e)



June 11, 2003

Reply to Attn of: GP (02-37016)

Mr. Jed Margolin  
[REDACTED] b(c)

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)

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Document