

(b) (6)

M CIV AD

From: (b) (6) M CIV AD
Sent: Friday, December 07, 2018 8:18
To: (b) (6) CIV AD
Cc: (b) (6) M CIV AD
Subject: Patent Issued!! (PAX 205 / Patent #10144532)
Signed By: (b) (6) @navy.mil

Congratulations on your invention becoming patented! Patent # 10144532 was issued on December 4, 2018.

Our mission is to protect the Navy's intellectual property from claims by third parties by patenting Navy inventions and to leverage Navy technology through technology transfer.

Your incentive award is being processed and you should receive your check soon. Thank you so much for your cooperation in the process of this valuable invention!

Should you have any questions or concerns, please feel free to contact me.

Thank you and have a great day!

(b) (6)

Office of Counsel, NAWCAD

47076 Liljencrantz Road, (b) (6)

Patuxent River, MD 20670

Phone: (301) (b) (6)

Fax: (301) (b) (6)

E-mail: (b) (6) @navy.mil

(b) (6)

M CIV AD

From: (b) (6) M CIV AD
Sent: Thursday, December 06, 2018 16:24
To: (b) (6) CIV NAVAIR 7.8.2.1
Cc: (b) (6) M CIV AD
Subject: PAX 205
Attachments: INCENTIVE AWARD.pdf
Signed By: (b) (6) @navy.mil

For processing. Thank you!

~~~~~  
(b) (6)

Office of Counsel, NAWCAD

47076 Liljencrantz Road, Bldg. (b) (6)

Patuxent River, MD 20670

Phone: (301) (b) (6)

Fax: (301)(b) (6)

E-mail: (b) (6) @navy.mil

## INCENTIVE AWARD RECOMMENDATION FORM

|                                                                                                                                                                                       |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| FPOC: (b) (6)                                                                                                                                                                         | Date: 12/6/18                |
| Employee(s) /E-Mail Address/Tele No.:<br><br>(b) (6) @navy.mil (301) (b) (6)                                                                                                          |                              |
| Title of Invention:<br><br>A CRAFT USING AN INERTIAL MASS REDUCTION DEVICE                                                                                                            | Navy Case No.<br><br>PAX 205 |
| The following type (s) of award consideration is recommended for the above identified invention:                                                                                      |                              |
| <input type="checkbox"/> 1. Initial award (\$200) to each inventor.<br>A patent application or Statutory Invention Registration (SIR) was filed on _____.                             |                              |
| <input checked="" type="checkbox"/> 2. Additional award of \$500 to a sole inventor (or \$250 to each of plural inventors).<br>A patent or SIR was issued on <u>12/04/18</u> .        |                              |
| <input type="checkbox"/> 3. Publication Award (\$100) to a sole inventor (or \$200 divided equally to plural inventors).<br>Published in Navy Technical Disclosure Bulletin on _____. |                              |
| <input type="checkbox"/> 4. Further award based on actual or predicted use and value of the invention.<br>Amount \$ _____.                                                            |                              |
| Comments/Forward Address (if applicable):<br><br><br><br><br>                                                                                                                         |                              |
| Office of Counsel<br>NAWCAD Patent Office<br>Patuxent River, MD                                                                                                                       | Requestor / POC:<br>(b) (6)  |

(b) (6)

M CIV AD

**From:** (b) (6) M CIV AD  
**Sent:** Thursday, June 21, 2018 12:46  
**To:** (b) (6) M CIV AD  
**Subject:** PAX 205 - File Appeal THURS 6/21 / BRIEF due 8/20  
**Signed By:** (b) (6) @navy.mil

6/21 - Filed Appeal

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

From: (b) (6) M CIV AD  
Sent: Tuesday, June 12, 2018 10:45 AM  
To: (b) (6) CIV NAVAIR N00019 <(b) (6)>  
Cc: (b) (6) M CIV AD <(b) (6)>  
Subject: RE: PAX 205 - File Appeal THURS 6/21 / BRIEF due 8/20

Got it. Thank you.

<https://www.uspto.gov/web/offices/pac/mpep/mpep-9020-appx-r.html#d0e356411>

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

From: (b) (6) CIV NAVAIR N00019  
Sent: Tuesday, June 12, 2018 10:36 AM  
To: (b) (6) M CIV AD  
Subject: RE: PAX 205 - File Appeal THURS 6/21 / BRIEF due 8/20

You have 2 months to file the brief

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

From: (b) (6) M CIV AD  
Sent: Tuesday, June 12, 2018 10:34 AM  
To: (b) (6) NAVAIR N00019 <(b) (6)>  
Cc: (b) (6) M CIV AD <(b) (6)>  
Subject: PAX 205 - File Appeal THURS 6/21 / BRIEF due 7/20

Just for calendar / deadline purposes - we are filing the notice of appeal on Thursday 6/21 - correct? Will that make the brief due on 7/20? Please let me know if there are any additional deadlines that I need to calendar. Thank you!

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

From: PAIR\_eOfficeAction@uspto.gov [mailto:PAIR\_eOfficeAction@uspto.gov]  
Sent: Friday, March 30, 2018 6:21 AM  
To: (b) (6) CIV NAVAIR N00019; PAXR\_NAWCAD\_PATENTS; (b) (6)  
CIV AD

Cc: PAIR\_eOfficeAction@uspto.gov

Subject: [Non-DoD Source] Private PAIR Correspondence Notification for  
Customer Number 21124

Mar 30, 2018 03:50:17 AM

Dear PAIR Customer:

Department of the Navy (Naval Air Warfare Center -Aircraft Division)  
47076 Lijencreantz Road, (b) (6)  
PATUXENT RIVER, MD 20670  
UNITED STATES

The following USPTO patent application(s) associated with your Customer  
Number, 21124, have new outgoing correspondence.  
This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be  
indicated on the form (e.g., PTOL-90) accompanying the correspondence.

**Disclaimer:**

The list of documents shown below is provided as a courtesy and is not part  
of the official file wrapper. The content of the images shown in PAIR is  
the official record.

Application Document Mailroom Date Attorney Docket No.

(b) (6) CTR 03/30/2018 PAX 205

To view your correspondence online or update your email addresses, please  
visit us anytime at <https://ppair.uspto.gov/epatent/myportal/privatepair>.

If you have any questions, please email the Electronic Business Center (EBC)  
at EBC@uspto.gov with 'e-Office Action' on the subject line or call  
1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE PATENT APPLICATION INFORMATION  
RETRIEVAL SYSTEM

Department of the Navy (Naval Air Warfare Center -Aircraft Division)  
47076 Lijencreantz Road, (b) (6)  
PATUXENT RIVER, MD 20670  
UNITED STATES

The following USPTO patent application(s) associated with your Customer Number (b) (6) have new outgoing correspondence.  
This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form (e.g., PTOL-90) accompanying the correspondence.

**Disclaimer:**

The list of documents shown below is provided as a courtesy and is not part of the official file wrapper. The content of the images shown in PAIR is the official record.

Application Document Mailroom Date Attorney Docket No.

(b) (6) CTAV 07/11/2018 PAX 205

To view your correspondence online or update your email addresses, please visit us anytime at <https://ppair.uspto.gov/epatent/myportal/privatepair>.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov with 'e-Office Action' on the subject line or call 1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

(b) (6)

**From:** (b) (6) CIV NAVAIR N00019  
**Sent:** Wednesday, July 18, 2018 5:53  
**To:** (b) (6) CIV AD  
**Subject:** RE: PAX 205 - USPTO Advisory Action  
**Signed By:** (b) (6) @navy.mil

**Importance:** High

No need to call USPTO. This is an Advisory Action Prior to Filing of an Appeal Brief. We have not filed an appeal brief yet. We only filed a Notice Of Appeal. This Action was in response to our Amendment After Final. This is exactly what is supposed to happen.

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

From: (b) (6) M CIV AD  
Sent: Tuesday, July 17, 2018 11:55 AM  
To: (b) (6) CIV NAVAIR N00019 <(b) (6) @navy.mil>  
Cc: (b) (6) M CIV AD <(b) (6) @navy.mil>  
Subject: PAX 205 - USPTO Advisory Action

I filed the appeal on 6/21. I'll call the USPTO. Thank you

~~~~~  
(b) (6)

Office of Counsel, NAWCAD
47076 Liljencrantz Road, Bldg. (b)
Patuxent River, MD 20670
Phone: (301)(b) (6)
Fax: (301)(b) (6)
E-mail: (b) (6) @navy.mil

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

From: PAIR_eOfficeAction@uspto.gov <PAIR_eOfficeAction@uspto.gov>
Sent: Wednesday, July 11, 2018 7:01 AM
To: (b) (6) D. CIV NAVAIR N00019 <(b) (6) @navy.mil>;
PAXR_NAWCAD_PATENTS <paxr_nawcad_patents@navy.mil>; (b) (6) M CIV AD
(b) (6) @navy.mil>
Cc: PAIR_eOfficeAction@uspto.gov
Subject: [Non-DoD Source] Private PAIR Correspondence Notification for
Customer Number 21124

Jul 11, 2018 04:16:13 AM

Dear PAIR Customer:

(b) (6)

M CIV AD

From: (b) (6) M CIV AD
Sent: Monday, May 02, 2016 11:31
To: (b) (6) M CIV AD; (b) (6) A CIV NAWCAD TTO B2185
Subject: RE: Patent Application Filed! (PAX 205 / Application # 15141270)
Attachments: ! App as Filed 042816.pdf
Signed By: (b) (6) @navy.mil

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

From: (b) (6) M CIV AD
Sent: Monday, May 02, 2016 11:25 AM
To: (b) (6) M CIV AD; (b) (6) CIV NAVAIR (b) (6)
Subject: RE: Patent Application Filed! (PAX 205 / Application (b) (6))

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

From: (b) (6) 1 CIV AD
Sent: Thursday, April 28, 2016 5:12 PM
To: (b) (6) V AD
Cc: (b) (6) A CIV NAWCAD TTO (b) (6) CIV NAVAIR N00019
Subject: Patent Application Filed! (PAX 205 / Application (b) (6))

The patent application relating to your invention has now been filed with the United States Patent & Trademark Office! Application / Serial (b) (6) was filed on April 28, 2016.

Our mission is to protect the Navy's intellectual property from claims by third parties by patenting Navy inventions and to leverage Navy technology through technology transfer.

Your incentive award is being processed and you should receive your payment soon. Thank you so much for your cooperation!

Should you have any questions or concerns, please feel free to contact me.

Thank you and have a great day!

~~~~~  
(b) (6)

Office of Counsel, NAWCAD (b) (6)  
47076 Liljencrantz Road, Bldg (b) (6)  
Patuxent River, MD 20670  
Phone: (b) (6)  
Fax: (b) (6)  
E-mail: (b) (6) @navy.mil

(b) (6)

**From:** (b) (6)  
**Sent:** Monday, May 02, 2016 11:25  
**To:** (b) (6)  
**Subject:** RE: Patent Application Filed! (PAX 205 / Application (b) (6)  
**Attachments:** INCENTIVE AWARD.pdf  
**Signed By:** (b) (6) @navy.mil

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

From: (b) (6) M CIV AD  
Sent: Thursday, April 28, 2016 5:12 PM  
To: (b) (6)  
Cc: (b) (6) IV NAWCAD TTC (b) (6)  
Subject: Patent Application Filed! (PAX 205 / Application (b) (6)

The patent application relating to your invention has now been filed with the United States Patent & Trademark Office! Application / Serial (b) (6) was filed on April 28, 2016.

Our mission is to protect the Navy's intellectual property from claims by third parties by patenting Navy inventions and to leverage Navy technology through technology transfer.

Your incentive award is being processed and you should receive your payment soon. Thank you so much for your cooperation!

Should you have any questions or concerns, please feel free to contact me.

Thank you and have a great day!

~~~~~  
(b) (6)

Office of Counsel, NAWCAD
47076 Liljencrantz Road, Bldg (b) (6)
Patuxent River, MD 20670
Phone: (b) (6)
Fax: (b) (6)
E-mail: (b) (6) @navy.mil

INCENTIVE AWARD RECOMMENDATION FORM

FPOC: (b) (6)	Date: 05/02/16
Employee(s) /E-Mail Address/Tele No.: (b) (6) @navy.mil (301) (b) (6)	
Title of Invention: A CRAFT USING AN INERTIAL MASS REDUCTION DEVICE	Navy Case No. PAX 205
The following type (s) of award consideration is recommended for the above identified invention:	
<input checked="" type="checkbox"/> 1. Initial award (\$200) to each inventor. A patent application or Statutory Invention Registration (SIR) was filed on _____.	
<input type="checkbox"/> 2. Additional award of \$500 to a sole inventor (or \$250 to each of plural inventors). A patent or SIR was issued on _____.	
<input type="checkbox"/> 3. Publication Award (\$100) to a sole inventor (or \$200 divided equally to plural inventors). Published in Navy Technical Disclosure Bulletin on _____.	
<input type="checkbox"/> 4. Further award based on actual or predicted use and value of the invention. Amount \$ _____.	
Comments/Forward Address (if applicable): 	
Office of Counsel NAWCAD Patent Office Patuxent River, MD	Requestor / POC: (b) (6)

(b) (6)

M CIV AD

From: (b) (6) CIV AD
Sent: Tuesday, April 19, 2016 17:30
To: (b) (6) CIV NAVAIR N00019
Cc: (b) (6) CIV AD
Subject: FW: PAX-205, Draft-2
Attachments: PAX-205_Draft-2.pdf; Spec 041916.doc
Signed By: (b) (6) @navy.mil

Attached is the reviewed spec with mostly just spacing edits and IDS questions. Should we put all the papers that (b) (6) provided us at our initial meeting or only the matters that he referenced? Thank you!

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

From: (b) (6) CIV NAVAIR N00019
Sent: Monday, April 18, 2016 2:17 PM
To: (b) (6) CIV AD
Subject: PAX-205, Draft-2

Ready to file.

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

From: (b) (6)
Sent: Monday, April 18, 2016 2:06 PM
To: (b) (6) CIV NAVAIR N00019; (b) (6) CIV AD
Subject: [Non-DoD Source] PAX-205, Draft-2

(b) (6)

Attached for your review are the updated figures for PAX-205.

Thanks

(b) (6)

(b) (6)

~~NOTE: This is a confidential communication and may contain privileged and/or confidential information. If you are not the intended recipient, please delete this message and any attachments, and do not read, copy, retain or disseminate the message or any attachment. Please notify us immediately by e-mail or by calling 330-(b) (6)~~

(b) (6)

M CIV AD

From: (b) (6) M CIV AD
Sent: Monday, November 02, 2015 17:10
To: (b) (6) CIV AD
Cc: (b) (6) M CIV AD
Subject: RE: PAX 205 - INERTIAL MASS REDUCTION DEVICE
Attachments: DTR 110215.pdf
Signed By: (b) (6) @navy.mil

Please review the attached correspondence. Thank you!

~~~~~  
(b) (6)

Office of Counsel, NAWCAD  
47076 Liljencrantz Road, Bldg. (b) (6)  
Patuxent River, MD 20670  
Phone: (b) (6)  
Fax: (b) (6)  
E-mail: (b) (6) @navy.mil

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

From: (b) (6) M CIV AD  
Sent: Wednesday, October 28, 2015 11:36 AM  
To: (b) (6) CIV AD  
Cc: (b) (6) M CIV AD  
Subject: PAX 205 - INERTIAL MASS REDUCTION DEVICE

Thank you for submitting your invention disclosure concerning the "INERTIAL MASS REDUCTION DEVICE". It has been assigned Navy Case Number PAX 205. We have forwarded the invention disclosure to the PAX Technology Transfer Office (TTO) to get the invention evaluation process started. The TTO will arrange for technical and marketing reviews of your invention. It usually takes 30 to 60 days to complete the technical and market reviews. You can expect to be contacted by the marketing reviewer and possibly also by the technical reviewer.

After the technical and marketing reviews have been completed, the invention will be placed on the Invention Evaluation Board's docket. You will be notified of the date. We encourage inventor participation at the meeting. It can be very helpful to have inventors there to explain how their invention works, how it differs from the prior art, and to answer any questions that Board members may have. If you would like to make a presentation at the IEB meeting, either in person or by VTC, please contact (b) (6) @navy.mil to coordinate.

If you have cited technical papers in your Invention Disclosure, please forward pdf's of those papers at your earliest convenience. If pdf copies are not readily available please let us know. You may also wish to ask for assistance from the NAVAIR Scientific and Technical Library at 301-342-1927 (email technical.library.fct@navy.mil) or the Reference/Research Librarian, (b) (6) at 301- (b) (6) @navy.mil.

\*\* At your earliest convenience, please send me all your contact information (home address, cell, etc.).

If you have any questions concerning the IEB process or any questions concerning patent law, please feel free to contact me. We look forward to working with you on this very interesting invention.

Thank you!

~~~~~  
(b) (6)

Office of Counsel, NAWCAD
47076 Liljencrantz Road, Bldg. (b) (6)
Patuxent River, MD 20670
Phone: (b) (6)
Fax: (b) (6)
E-mail: (b) (6) @navy.mil

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

From: (b) (6) CIV AD
Sent: Tuesday, October 27, 2015 9:54 AM
To: (b) (6) CIV NAWCAD TTO
(b) (6) Air 4.0T, (b) (6) CIV AD, 11.0
Cc: (b) (6) AVAIRSYS COM 4.4.B, (b) (6) CIV NAVAIR 4.4T, (b) (6) AIR-4.4.5;
(b) (6) CIV NAVAIR, 4.4
Subject: INTAKE - PAIS - INERTIAL MASS REDUCTION DEVICE
Importance: High

Greetings,

Please see the attached invention disclosure forms (signed) and inventive concept paper (INERTIAL MASS REDUCTION DEVICE).

The attached concept description paper discloses a breakthrough/revolutionary Power and Propulsion technology, which when enabled will give the United States Warfighter the battlefield supremacy.

Please schedule me for the earliest possible Invention Evaluation Board meeting, so that I may properly present my invention.

This intellectual property is sensitive in nature and is for your eyes only, please treat accordingly.

Thank you.

(b) (6)

Ph.D.

Aerospace Engineer
DoD/DoN/NAVAIR/NAWCAD AIR (b) (6)
NAS Patuxent River, MD

(301) (b) (6)

THERE ARE NO UNIVERSAL IMPOSSIBILITIES, ONLY CONDITIONAL POSSIBILITIES.

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

From: (b) (6) M CIV AD

Sent: Friday, October 02, 2015 10:46 AM

To: (b) (6) V AD

Cc: (b) (6) M CIV AD; (b) (6) CIV NAVAIR N00019;

A CIV NAWCAD TTO B2185

Subject: INTAKE - (b) (6)

(b) (6)

Attached for your review, please find a brochure explaining the Patent Process, the Invention Disclosure form (Record and Disclosure of Invention), Patent Rights Questionnaire and Guide to completing the invention disclosure.

Should you have any questions, please feel free to contact myself, (b) (6)

Have a great day!

~~~~~  
(b) (6)

Office of Counsel, NAWCAD

47076 Liljencrantz Road, Bldg (b) (6)

Patuxent River, MD 20670

Phone: (301) (b) (6)

Fax: (301)(b) (6)

E-mail: (b) (6) @navy.mil

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

From: (b) (6) V AD

Sent: Thursday, October 01, 2015 10:47 AM

To: (b) (6) CIV NAVAIR N00019

(b) (6) M CIV AD; (b) (6) D CIV AD, 11.0

(b) (6)

A CIV NAWCAD TTO

Cc: (b) (6) ST, Air 4.0T; (b) (6)

CIV NAVAIRSYSCOM 4.4.B; (b) (6)

CIV NAVAIR 4.4T;

(b) (6) AIR-4.4.5; (b) (6) CIV NAVAIR, 4.4

Subject: INERTIAL MASS REDUCTION DEVICE - PAX 182 Follow-up

Importance: High

Greetings,

It is possible to reduce the inertial mass, and hence the gravitational mass, of a system/object in motion, by an abrupt perturbation of the non-linear background of local Spacetime (equivalent to an accelerated excursion far from thermodynamic equilibrium, analogous with Symmetry-breaking).

The physical mechanism which drives this diminution in inertial mass is based on the negative pressure (hence repulsive gravity) exhibited by the polarized local Vacuum Energy State (local Vacuum polarization being achieved by simultaneous coupling of accelerated high frequency vibration with accelerated high frequency axial rotation of an electrically charged system/object) in the close proximity of the system/object in question.

In other words, inertial mass reduction can be achieved via manipulation of quantum field fluctuations in the local Vacuum Energy State, in the immediate proximity of the object/system. Therefore, it is possible to reduce an air vehicle's/spacecraft's inertia, that is, its resistance to motion/acceleration by polarizing the Vacuum in the close proximity of the moving air vehicle/spacecraft.

Polarization of the local Vacuum is analogous to manipulation/modification of the local Spacetime topological lattice energy density.

As a result, extreme speeds can be achieved (see the attached paper on the nature of such possibilities).

Think of the Vacuum Energy State as a chaotic system comprised of random, highly energetic fluctuations in the collective quantum fields which define it. Considering Ilya Prigogine's Nobel Prize work on far from equilibrium thermodynamics, a chaotic system can self-organize if subjected to three conditions, namely: the system must be non-linear, it must experience an abrupt excursion far from thermodynamic equilibrium, and it must be subjected to an energy flux (Order from Chaos).

An artificially generated high energy / high frequency electromagnetic (EM) field (as described in Navy Case PAX 182) can fulfill all three conditions simultaneously (especially in an accelerated vibration/rotation mode), when strongly interacting with the local Vacuum Energy State. Recall that these interactions are induced by the coupling of hyper-frequency axial rotation (spin) and hyper-frequency vibration (harmonic oscillations/abrupt pulsations) of electrically charged systems (High Energy Electromagnetic Field Generator), placed on the outside of the air vehicle/spaceship in strategic locations. In this manner local Vacuum polarization, namely the coherence of Vacuum fluctuations within the immediate proximity of the air vehicle's/spaceship's surface (outside Vacuum boundary) is achieved, allowing for 'smooth sailing' through the negative pressure (repulsive gravity) of the 'void' (the Void within the Vacuum). Moreover, due to the nature of the 'emergent physics' involved, it is possible to experience spatio-temporal displacement effects, by using this device/system.

In summary, the original inventive concept described herein, is named the Inertial Mass Reduction Device (IMRD) and works in conjunction with the High Energy Electromagnetic Field Generator (HEEMFG) described in Navy case PAX 182. When put in practice, this system can provide the design of energy generation machinery with power output levels much higher than those currently achievable. The utilization of such high power sources for Aerospace Power and Propulsion generation, as it pertains to reduction in an hybrid aerospace/undersea vehicle's inertial (gravitational) mass as a direct result of local Vacuum polarization (coupled with EM field - matter repulsion), is an important application of the described theoretical concept.

Please send me the intake for this new invention disclosure, and also please organize (schedule) an Invention Evaluation Board meeting so that I can properly defend the proposed patent application. A detailed concept descriptive paper will be enclosed as an official document of the intake (work in progress).

This intellectual property is sensitive in nature and is for your eyes only, please treat accordingly.

Thank you.

(b) (6)

(b) (6)

Aerospace Engineer

DoD/DoN/NAVAIR/NAWCAD AIR (b) (6)

NAS Patuxent River, MD

(301) (b) (6)

THERE ARE NO UNIVERSAL IMPOSSIBILITIES, ONLY CONDITIONAL POSSIBILITIES.

'EVERYTHING IS EVERYWHERE AT EVERYTIME' - THE TOTALITY PRINCIPLE OF THE VACUUM ENERGY STATE



DEPARTMENT OF THE NAVY  
NAVAL AIR WARFARE CENTER, AIRCRAFT DIVISION  
OFFICE OF COUNSEL  
47076 LILJENCRANTZ ROAD, (b) (6)  
PATUXENT RIVER, MD 20670-1127

IN REPLY REFER TO  
PAX 205

November 2, 2015

**MEMORANDUM**

From: Office of Counsel, NAWCAD, 11.2, 47076 Liljencrantz Rd, Bldg (b) (6) Patuxent River, MD 20670-1550  
To: (b) (6) Ph.D., (b) (6)

**Subj: NOTICE OF DETERMINATION OF RIGHTS TO INVENTION**

Ref: (a) SECNAVINST 5870.3  
(b) 37 CFR §501.6 - §501.7  
(c) Encl: 37 CFR §501.6 - §501.7

I have reviewed the Patent Rights Questionnaire (PRQ) in accordance with reference (a) and determined that the U.S. Government is entitled to the full right, title, and interest in and to the following invention:

Title: "INERTIAL MASS REDUCTION DEVICE"

Navy Case: PAX 205

Inventor(s): (b) (6)

If you should disagree, you may obtain a review by filing within 30 days from the date of this notice a written appeal, in duplicate, to the Under Secretary for Technology whose address is:

Under Secretary of Technology  
U.S. Department of Commerce  
Herbert C. Hoover Building  
Washington, D.C. 20230

This written appeal should set forth the specific reason why you disagree with the Government and believe you are entitled to the full right, title, and interest in the above invention (see enclosure 1). The period for filing an appeal may be extended for good sufficient reasons. Any request for an extension must be received by that office before expiration of the 30 day period.

(b) (6)

47076 Liljencrantz Rd, (b) (6)  
Patuxent River, MD 20670  
Email: (b) (6) @navy.mil



6 of 11 DOCUMENTS

LEXISNEXIS' CODE OF FEDERAL REGULATIONS  
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\*\*\* This section is current through the December 8, 2011 \*\*\*  
\*\*\* Issue of the Federal Register \*\*\*

TITLE 37 -- PATENTS, TRADEMARKS, AND COPYRIGHTS  
CHAPTER V -- UNDER SECRETARY FOR TECHNOLOGY, DEPARTMENT OF COMMERCE  
PART 501 -- UNIFORM PATENT POLICY FOR RIGHTS IN INVENTIONS MADE BY GOVERNMENT  
EMPLOYEES

[Go to the CFR Archive Directory](#)

37 CFR 501.6

§ 501.6 Criteria for the Determination of rights in and to inventions.

(a) The following rules shall be applied in determining the respective rights of the Government and of the inventor in and to any invention that is subject to the provisions of this part:

(1) The Government shall obtain, except as herein otherwise provided, the entire right, title and interest in and to any invention made by any Government employee:

(i) During working hours, or

(ii) With a contribution by the Government of facilities, equipment, materials, funds or information, or of time or services of other Government employees on official duty, or

(iii) Which bears a direct relation to or is made in consequence of the official duties of the inventor.

(2) In any case where the contribution of the Government, as measured by any one or more of the criteria set forth in paragraph (a)(1) of this section, to the invention is insufficient equitably to justify a requirement of assignment to the Government of the entire right, title and interest in and to such invention, or in any case where the Government has insufficient interest in an invention to obtain the entire right, title and interest therein (although the Government could obtain same under paragraph (a)(1) of this section), the Government agency concerned shall leave title to such invention in the employee, subject however, to the reservation to the Government of a nonexclusive, irrevocable, royalty-free license in the invention with power to grant licenses for all governmental purposes. The terms of such reservation will appear, where practicable, in any patent, domestic or foreign, which may issue on such invention. Reference is made to section 15 of the Federal Technology Transfer Act of 1986 (*15 U.S.C. 3710d*) which requires a Government agency to allow the inventor to retain title to any covered invention when the agency does not intend to file a patent application or otherwise promote commercialization.

(3) In applying the provisions of paragraphs (a)(1) and (2) of this section to the facts and circumstances relating to the making of a particular invention, it shall be presumed that an invention made by an employee who is employed or assigned:

- (i) To invent or improve or perfect any art or process, machine, design, manufacture, or composition of matter;
- (ii) To conduct or perform research, development work, or both,
- (iii) To supervise, direct, coordinate, or review Government financed or conducted research, development work, or both, or
- (iv) To act in a liaison capacity among governmental or non-governmental agencies or individuals engaged in such research or development work,

falls within the provisions of paragraph (a)(1) of this section, and it shall be presumed that any invention made by any other employee falls within the provisions of paragraph (a)(2) of this section. Either presumption may be rebutted by a showing of the facts and circumstances in the case and shall not preclude a determination that these facts and circumstances justify leaving the entire right, title and interest in and to the invention in the Government employee, subject to law.

(4) In any case wherein the Government neither:

- (i) Obtains the entire right, title and interest in and to an invention pursuant to the provisions of paragraph (a)(1) of this section nor
- (ii) Reserves a nonexclusive, irrevocable, royalty-free license in the invention, with power to grant licenses for all governmental purposes, pursuant to the provisions of paragraph (a)(2) of this section,

the Government shall leave the entire right, title and interest in and to the invention in the Government employee, subject to law.

**HISTORY:** [53 FR 39735, Oct. 11, 1988; 61 FR 40997, 40999, Aug. 7, 1996]

**AUTHORITY: AUTHORITY NOTE APPLICABLE TO ENTIRE PART:**

Sec. 4, E.O. 10096, 3 CFR, 1949-1953 *Comp.*, p. 292, as amended by E.O. 10930, 3 CFR, 1959-1963 *Comp.*, p. 456 and by E.O. 10695, 3 CFR, 1954-1958 *Comp.*, p. 355; DOO 10-17, July 15, 1992, and DOO 10-18, March 31, 1994.

**NOTES:** [EFFECTIVE DATE NOTE: 61 FR 40997, 40999, Aug. 7, 1996, which amended this section, became effective Aug. 7, 1996.]

**NOTES TO DECISIONS: COURT AND ADMINISTRATIVE DECISIONS SIGNIFICANTLY DISCUSSING SECTION --**

*Wright v United States* (1999, CA5 Tex) 164 F3d 267, 49 USPQ2d 1542

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\*\*\* This section is current through the December 8, 2011 \*\*\*  
\*\*\* Issue of the Federal Register \*\*\*

TITLE 37 -- PATENTS, TRADEMARKS, AND COPYRIGHTS  
CHAPTER V -- UNDER SECRETARY FOR TECHNOLOGY, DEPARTMENT OF COMMERCE  
PART 501 -- UNIFORM PATENT POLICY FOR RIGHTS IN INVENTIONS MADE BY GOVERNMENT  
EMPLOYEES

[Go to the CFR Archive Directory](#)

*37 CFR 501.7*

§ 501.7 Agency determination.

(a) If the agency determines that the Government is entitled to obtain title pursuant to § 501.6(a)(1) and the employee does not appeal, no further review is required.

(b) In the event that a Government agency determines, pursuant to paragraph (a)(2) or (a)(4) of § 501.6, that title to an invention will be left with the employee, the agency shall notify the employee of this determination. In cases pursuant to § 501.6(a)(2) where the Government's insufficient interest in the invention is evidenced by its decision not to file a patent application, the agency may impose on the employee any one or all of the following conditions or any other conditions that may be necessary in a particular case:

(1) That a patent application be filed in the United States and/or abroad, if the Government has determined that it has or may need to practice the invention;

(2) That the invention not be assigned to any foreign-owned or controlled corporation without the written permission of the agency; and

(3) That any assignment or license of rights to use or sell the invention in the United States shall contain a requirement that any products embodying the invention or produced through the use of the invention be substantially manufactured in the United States. The agency shall notify the employee of any conditions imposed.

(c) In the case of a determination under either paragraph (a) or (b) of this section, the agency shall promptly provide the employee with:

(1) A signed and dated statement of its determination and reasons therefor; and

(2) A copy of 37 CFR part 501.

**HISTORY:** [53 FR 39735, Oct. 11, 1988; 61 FR 40997, 40999, Aug. 7, 1996]

**AUTHORITY: AUTHORITY NOTE APPLICABLE TO ENTIRE PART:**

Sec. 4, E.O. 10096, 3 CFR, 1949-1953 Comp., p. 292, as amended by E.O. 10930, 3 CFR, 1959-1963 Comp., p. 456 and by E.O. 10695, 3 CFR, 1954-1958 Comp., p. 355; DOD 10-17, July 15, 1992, and DOD 10-18, March 31, 1994.

**NOTES:** [EFFECTIVE DATE NOTE: 61 FR 40997, 40999, Aug. 7, 1996, which revised paragraphs (b) and (c), became effective Aug. 7, 1996.]

(b) (6)

## M CIV AD

**From:** (b) (6) M CIV AD  
**Sent:** Wednesday, October 28, 2015 11:39  
**To:** (b) (6) CIV AD; (b) (6) NAVCAD TTO (b) (6)  
**Cc:** (b) (6) CIV NAVAIR NU0019  
**Subject:** RE: PAX 205 - INERTIAL MASS REDUCTION DEVICE  
**Attachments:** RECORD AND DISCLOSURE OF INVENTION - (b) (6).pdf  
**Signed By:** (b) (6) @navy.mil

### New Disclosure

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

**From:** (b) (6) M CIV AD  
**Sent:** Wednesday, October 28, 2015 11:36 AM  
**To:** (b) (6) CIV AD  
**Cc:** (b) (6) CIV AD  
**Subject:** PAX 205 - INERTIAL MASS REDUCTION DEVICE

Thank you for submitting your invention disclosure concerning the "INERTIAL MASS REDUCTION DEVICE". It has been assigned Navy Case Number PAX 205. We have forwarded the invention disclosure to the PAX Technology Transfer Office (TTO) to get the invention evaluation process started. The TTO will arrange for technical and marketing reviews of your invention. It usually takes 30 to 60 days to complete the technical and market reviews. You can expect to be contacted by the marketing reviewer and possibly also by the technical reviewer.

After the technical and marketing reviews have been completed, the invention will be placed on the Invention Evaluation Board's docket. You will be notified of the date. We encourage inventor participation at the meeting. It can be very helpful to have inventors there to explain how their invention works, how it differs from the prior art, and to answer any questions that Board members may have. If you would like to make a presentation at the IEB meeting, either in person or by VTC, please contact (b) (6) @navy.mil to coordinate.

If you have cited technical papers in your Invention Disclosure, please forward pdf's of those papers at your earliest convenience. If pdf copies are not readily available please let us know. You may also wish to ask for assistance from the NAVAIR Scientific and Technical Library at 301-342-1927 (email technical.library.fct@navy.mil) or the Reference/Research Librarian, (b) (6) and (b) (6) @navy.mil.

\*\* At your earliest convenience, please send me all your contact information (home address, cell, etc.).

If you have any questions concerning the IEB process or any questions concerning patent law, please feel free to contact me. We look forward to working with you on this very interesting invention.

Thank you!

~~~~~  
(b) (6)

Office of Counsel, NAVCAD
47076 Liljencrantz Road, Bldg. (b) (6)
Patuxent River, MD 20670 (b) (6)

Phone: (b) (6)
Fax: (b) (6)
E-mail: (b) (6) @navy.mil

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

From: (b) (6) CIV AD
Sent: Tuesday, October 27, 2015 9:54 AM
To: (b) (6) CIV NAVAIR N00019; (b) (6) CIV NAWCAD TTO (b) (6)
(b) (6) ST, Air 4.0T; (b) (6) CIV AD, 11.0
Cc: (b) (6) H. CIV NAVAIRSYSCOM 4.4.B (b) (6) (b) (6) CIV NAVAIR 4.4T; (b) (6) AIR-4.4.5;
(b) (6) CIV NAVAIR, 4.4
Subject: INTAKE - (b) (6) INERTIAL MASS REDUCTION DEVICE
Importance: High

Greetings,

Please see the attached invention disclosure forms (signed) and inventive concept paper (INERTIAL MASS REDUCTION DEVICE).

The attached concept description paper discloses a breakthrough/revolutionary Power and Propulsion technology, which when enabled will give the United States Warfighter the battlefield supremacy.

Please schedule me for the earliest possible Invention Evaluation Board meeting, so that I may properly present my invention.

This intellectual property is sensitive in nature and is for your eyes only, please treat accordingly.

Thank you.

(b) (6)

(b) (6)

DoD/DoN/NAVAIR/NAWCAD AIR (b) (6)

NAS Patuxent River, MD

(301) (b) (6)

THERE ARE NO UNIVERSAL IMPOSSIBILITIES, ONLY CONDITIONAL POSSIBILITIES.

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

From: (b) (6) M CIV AD
Sent: Friday, October 02, 2015 10:46 AM
To: (b) (6) CIV AD
Cc: (b) (6) (b) (6) CIV AD, 11.0 (b) (6)
A CIV NAWCAD TTO (b) (6)
Subject: INTAKE - PAIS

Attached for your review, please find a brochure explaining the Patent Process, the Invention Disclosure form (Record and Disclosure of Invention), Patent Rights Questionnaire and Guide to completing the invention disclosure.

(b) (6)

Should you have any questions, please feel free to contact myself,

Have a great day!

(b) (6)

(b) (6)

Office of Counsel, NAWCAD

47076 Liljencrantz Road, (b) (6)

Patuxent River, MD 20670

Phone: (b) (6)

Fax: (b) (6)

E-mail: (b) (6) n@navy.mil

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

From: (b) (6) CIV AD

Sent: Thursday, October 01, 2015 10:47 AM

To: (b) (6) CIV NAVAIR N00019; (b) (6) V AD; (b) (6)

A CIV NAWCAD TTO (b) (6)

Cc: (b) (6) CIV NAVAIRSYSCOM 4.4.B; (b) (6) CIV NAVAIR 4.4T;

(b) (6) CIV NAVAIR, 4.4

Subject: INERTIAL MASS REDUCTION DEVICE - PAX 182 Follow-up

Importance: High

Greetings,

It is possible to reduce the inertial mass, and hence the gravitational mass, of a system/object in motion, by an abrupt perturbation of the non-linear background of local Spacetime (equivalent to an accelerated excursion far from thermodynamic equilibrium, analogous with Symmetry-breaking).

The physical mechanism which drives this diminution in inertial mass is based on the negative pressure (hence repulsive gravity) exhibited by the polarized local Vacuum Energy State (local Vacuum polarization being achieved by simultaneous coupling of accelerated high frequency vibration with accelerated high frequency axial rotation of an electrically charged system/object) in the close proximity of the system/object in question.

In other words, inertial mass reduction can be achieved via manipulation of quantum field fluctuations in the local Vacuum Energy State, in the immediate proximity of the object/system. Therefore, it is possible to reduce an air vehicle's/spacecraft's inertia, that is, its resistance to motion/acceleration by polarizing the Vacuum in the close proximity of the moving air vehicle/spacecraft.

Polarization of the local Vacuum is analogous to manipulation/modification of the local Spacetime topological lattice energy density.

As a result, extreme speeds can be achieved (see the attached paper on the nature of such possibilities).

Think of the Vacuum Energy State as a chaotic system comprised of random, highly energetic fluctuations in the collective quantum fields which define it. Considering Ilya Prigogine's Nobel Prize work on far from equilibrium thermodynamics, a chaotic system can self-organize if subjected to three conditions, namely: the system must be non-linear, it must experience an abrupt excursion far from thermodynamic equilibrium, and it must be subjected to an energy flux (Order from Chaos).

An artificially generated high energy / high frequency electromagnetic (EM) field (as described in Navy Case PAX 182) can fulfill all three conditions simultaneously (especially in an accelerated vibration/rotation mode), when strongly interacting with the local Vacuum Energy State. Recall that these interactions are induced by the coupling of hyper-frequency axial rotation (spin) and hyper-frequency vibration (harmonic oscillations/abrupt pulsations) of electrically charged systems (High Energy Electromagnetic Field Generator), placed on the outside of the air vehicle/spacecraft in

strategic locations. In this manner local Vacuum polarization, namely the coherence of Vacuum fluctuations within the immediate proximity of the air vehicle's/spacecraft's surface (outside Vacuum boundary) is achieved, allowing for 'smooth sailing' through the negative pressure (repulsive gravity) of the 'void' (the Void within the Vacuum). Moreover, due to the nature of the 'emergent physics' involved, it is possible to experience spatio-temporal displacement effects, by using this device/system.

In summary, the original inventive concept described herein, is named the Inertial Mass Reduction Device (IMRD) and works in conjunction with the High Energy Electromagnetic Field Generator (HEEMFG) described in Navy case PAX 182. When put in practice, this system can provide the design of energy generation machinery with power output levels much higher than those currently achievable. The utilization of such high power sources for Aerospace Power and Propulsion generation, as it pertains to reduction in an hybrid aerospace/undersea vehicle's inertial (gravitational) mass as a direct result of local Vacuum polarization (coupled with EM field - matter repulsion), is an important application of the described theoretical concept.

Please send me the intake for this new invention disclosure, and also please organize (schedule) an Invention Evaluation Board meeting so that I can properly defend the proposed patent application. A detailed concept descriptive paper will be enclosed as an official document of the intake (work in progress).

This intellectual property is sensitive in nature and is for your eyes only, please treat accordingly.

Thank you.

(b) (6)

(b) (6)

Aerospace Engineer

DoD/DoN/NAVAIR/NAWCAD AIR (b) (6)

NAS Patuxent River, MD

(b) (6)

THERE ARE NO UNIVERSAL IMPOSSIBILITIES, ONLY CONDITIONAL POSSIBILITIES.

'EVERYTHING IS EVERYWHERE AT EVERYTIME' - THE TOTALITY PRINCIPLE OF THE VACUUM ENERGY STATE

RECORD AND DISCLOSURE OF INVENTION

FOR USE BY NAVY
INTELLECTUAL PROPERTY OFFICE

DATE DISCLOSURE RECEIVED	NAVY CASE NO.
--------------------------	---------------

INSTRUCTIONS: A Navy employee should use this form when submitting an invention disclosure to the Department of the Navy. Fill each blank with the requested information or enter "NONE" as appropriate. Original and two copies should be printed or typed and forwarded to the intellectual property office responsible for providing services to your activity. Where space on the form is inadequate, enter "see attached page," use plain pages as needed, and identify item by number. When completely executed, this form becomes an important legal document useful in proving priority of invention. This form may also be used by a contractor or grantee for disclosing an invention to the Navy.

PART 1. RECORD OF INVENTION

1. INVENTOR(S)	ADDRESS	POSITION TITLE	EMPLOYER (Activity & Code No., or Company & address)
(b) (6)	(b) (6)	AEROSPACE ENGINEER	NAVAIR / NAWCAD AIR (b) (6)

2. DESCRIPTIVE TITLE OF INVENTION

THE INERTIAL MASS REDUCTION DEVICE

3. CONCEPTION, INITIAL RECORDS AND RESULTS OF FIRST MODEL

a. EARLIEST DATE AND PLACE INVENTION WAS CONCEIVED (*Identify persons and records to support date and place*)

10-01-2015 ~ CONCEPT DISCLOSURE TO THE OFFICE OF PATENT COUNSEL NAS PATUXENT RIVER AND TO (b) (6)

b. DATE AND PRESENT LOCATION OF FIRST SKETCH, DRAWING OR PHOTO AND FIRST WRITTEN DESCRIPTION (*Such as notebook entries, etc.*)

10-01-2015 ~ SAME AS ABOVE.

c. DATE AND PLACE OF COMPLETION OF FIRST MODEL, PROTOTYPE, PRELIMINARY SYNTHESIS, FORMULATION, ETC., AND ITS PRESENT LOCATION
NOT APPLICABLE - THIS IS ONLY A THEORETICAL CONCEPT, FOR NOW.

d. DATE AND PLACE OF FIRST TEST OR OPERATION AND THE RESULTS (*Give name and address of witnesses, and present location of records*)

NOT APPLICABLE - THIS IS ONLY A THEORETICAL CONCEPT, FOR NOW.

4. OTHER RECORDS (*Notebook entries, descriptions, reports, drawings, etc.*)

IDENTIFICATION	DATE OF DOCUMENT	PRESENT LOCATION
THE INERTIAL MASS REDUCTION DEVICE – Concept Description Paper	10-01-2015	TO BE ATTACHED TO THIS OFFICIAL DISCLOSURE.

5. OTHER INDIVIDUALS TO WHOM INVENTION WAS DISCLOSED

NAME	ACTIVITY OR COMPANY INDIVIDUAL REPRESENTS	DATE DISCLOSED	TYPE (<i>oral or written disclosures</i>)
(b) (6)	(b) (6)	10-01-2015	WRITTEN
(b) (6)	(b) (6)	10-01-2015	WRITTEN AND ORAL
	(b) (6)	10-01-2015	WRITTEN
	NAVAIR / Air 4.4	10-01-2015	WRITTEN
	NAVAIR / Air 4.4.5	10-01-2015	WRITTEN
	NAVAIR / Air 4.4.5.1	10-01-2015	ORAL

6. DATE AND PLACE OF OTHER TESTS OR OPERATIONS, AND THE RESULTS (List name and address of witnesses and identify present location of records)
For now this is only a theoretical concept, however a simple laboratory experiment is proposed in the concept description paper submitted with this intake.

7. IDENTIFY ANY PAST, PRESENT OR CONTEMPLATED USE, SALE, OR PUBLICATION OF THE INVENTION

Theoretical Concept only (no concept enablement) was submitted for publication to the SAE International Journal of Aerospace (Abstract has been accepted – awaiting finalized peer review).

8. LIST ANY CLOSELY RELATED PATENTS, PATENT APPLICATIONS AND PUBLICATIONS OF YOURS OR OTHER PERSONS

Navy Case PAX 182 – Patent Application (b) (6) patent application titled: 'Electromagnetic Field Generator and Method to Generate an Electromagnetic Field'.

Recent paper discusses the possibility of achieving extreme speeds – (b) (6) (2015) 'Conditional Possibility of Spacecraft Propulsion at Superluminal Speeds' – Int. J. Space Science and Engineering, Vol. 3, No.1, pp 89-92.

PART II. DISCLOSURE OF INVENTION

Attach on separate sheets of paper a full and complete description of the invention, using the outline given below.

a. PURPOSE. State the purpose of the invention.

The original inventive concept described herein, is named the Inertial Mass Reduction Device (IMRD) and works in conjunction with the physics of the High Energy Electromagnetic Field Generator (HEEMFG) described in Navy case PAX 182. When put in practice, this system can provide the design of energy generation machinery with power output levels much higher than those currently achievable. The utilization of such high power sources for Aerospace Power and Propulsion generation, as it pertains to reduction in an hybrid aerospace/undersea vehicle's inertial (gravitational) mass as a direct result of local Vacuum polarization (coupled with EM field - matter repulsion), is an important application of the described theoretical concept. As a result, extreme hybrid aerospace/undersea craft speeds can be achieved.

b. BACKGROUND. Describe the old methods, materials or apparatus used to perform the purpose of the invention and give their limitations and disadvantages.

This is a revolutionary / breakthrough concept – there are no limitations or disadvantages to this technology.

c. DESCRIPTION AND OPERATION. Describe clearly and completely the best mode of the invention and give a detailed description of its operation and use. Sketches, prints, photos, or other illustrations should be attached. In the description, use reference characters to refer to components in attached illustrations.

Please see detailed concept description paper titled – 'The Inertial Mass Reduction Device' submitted with this intake (invention disclosure forms).

d. ADVANTAGES AND NEW FEATURES. State the advantages of the invention over the old methods, materials or apparatus described in paragraph b. above, and the features believed to be new.

Please see detailed concept description paper titled – 'The Inertial Mass Reduction Device' submitted with this intake.

e. ALTERNATIVES. Indicate any alternative methods, materials, or apparatus of the invention. – THERE ARE NO ALTERNATIVES.

f. CONTRIBUTIONS BY INVENTORS. If this is a joint invention, indicate what contribution was made by each inventor. – N/A – I am the sole inventor.

PART III. CERTIFICATION OF INVENTORS

I certify that the invention disclosed herein and in the attached documents is the sole joint invention of the undersigned and that the statements and answers are true to my best knowledge and belief.

Date: 10/26/2015	Signature: (b) (6)
Date:	Signature
Date:	Signature

PART IV. CERTIFICATION OF WITNESSES

I certify that the invention described herein and in the attached documents has been disclosed to and understood by me.

Date: 26 Oct 2015	Signature: (b) (6)	Business Address: NAVAIR 4.4-5.1
Date:	Signature	Business Address

PATENT RIGHTS QUESTIONNAIRE

PRIVACY ACT STATEMENT - Under the authority of Executive order 10096, information regarding the making of your invention is requested in order to make a patent rights determination. The information provided by you will become a permanent part of the Navy patent case file on your invention. The information provided will not be divulged without your written authorization to anyone other than agencies of the U.S. Government with a proper interest in Government rights in inventions. You are required to provide this information and failure to do so could conceivably result in adverse performance evaluation or disciplinary action.

INVENTOR (Last name, first, middle)
(b) (6)

COGNIZANT PATENT COUNSEL
(b) (6)

DESCRIPTIVE TITLE OF INVENTION

THE INERTIAL MASS REDUCTION DEVICE

CONCISE DESCRIPTION OF INVENTION

The original inventive concept described herein, is named the Inertial Mass Reduction Device (IMRD) and works in conjunction with the physics of the High Energy Electromagnetic Field Generator (HEEMFG) described in Navy Case PAX 182. When put in practice, this system can provide the design of energy generation machinery with power output levels much higher than those currently achievable. The utilization of such high power sources for Aerospace Power and Propulsion generation, as it pertains to reduction in an hybrid aerospace/undersea vehicle's inertial (gravitational) mass as a direct result of local Vacuum polarization (coupled with EM field - matter repulsion), is an important application of the described theoretical concept. As a result, extreme hybrid aerospace/ undersea craft speeds can be achieved. It is possible to reduce the inertial mass, and hence the gravitational mass, of a system/object in motion, by an abrupt perturbation of the non-linear background of local Spacetime (equivalent to an accelerated excursion far from thermodynamic equilibrium, analogous with Symmetry-breaking). The physical mechanism which drives this diminution in inertial mass is based on the negative pressure (hence repulsive gravity) exhibited by the polarized local Vacuum Energy State (local Vacuum polarization being achieved by simultaneous coupling of accelerated high frequency vibration with accelerated high frequency axial rotation of an electrically charged system/object) in the close proximity of the system/object in question. In other words, inertial mass reduction can be achieved via manipulation of quantum field fluctuations in the local Vacuum Energy State, in the immediate proximity of the object/system. Therefore, it is possible to reduce an air vehicle/spacecraft's inertia, that is, its resistance to motion/acceleration by polarizing the Vacuum in the close proximity of the moving air vehicle/spacecraft. Polarization of the local Vacuum (Fermion coupling) is analogous to manipulation/modification of the local Spacetime topological lattice energy density. A detailed concept description paper will be attached as an official document of this invention disclosure.

INSTRUCTIONS

Under Executive order 10096 of 23 January 1950, as amended, and SECNAV Instruction 5870.3, it is necessary to determine the relative rights of the inventor and the Government to the invention described above. This determination depends on the circumstances under which the invention was made. The making of an invention generally requires its conception or discovery and also work on it in the form of writings, sketches or drawings or a model of full size device (or a combination of these) from which it can be established that the invention is considered "made" depends upon the circumstances surrounding each invention, for the purpose of this questionnaire, this date may be considered the earliest or first time the essential elements of the invention were fully and clearly disclosed in writings,

sketches or drawings, or in a model or full size device in such a manner that it was clear the invention was sound in principle and could be reduced to practice therefrom by one skilled in the field of the invention.

The inventor should CAREFULLY READ THE ENTIRE QUESTIONNAIRE. He should then answer the questions as completely as possible, using the above definition of the date invention was "made" and the above description as the definition of the invention. Completion of questionnaire includes signatures at the end of the form by inventor and his supervisor. Original and one completed copies are to be returned to the cognizant Patent representative.

I. INVENTOR'S EMPLOYMENT AT THE TIME INVENTION WAS MADE

1. JOB TITLE AEROSPACE ENGINEER	2. GRADE DP-04		3. ACTIVITY (Name and Location) NAWCAD (HQA) (b) (6)		
4. LABORATORY OR DEPARTMENT	5. DIVISION OR BRANCH 4.4.5		6. SECTION OR UNIT 4.4.5.1		
7. OFFICIAL WORK ASSIGNMENT	YES	NO	OFFICIAL WORK ASSIGNMENT	YES	NO
a. TO INVENT OR IMPROVE OR PERFECT ANY PROCESS, MACHINE, MANUFACTURE, OR COMPOSITION OF MATTER		X	b. TO CONDUCT OR PERFORM RESEARCH OR DEVELOPMENT WORK	X	
c. TO SUPERVISE, DIRECT, COORDINATE OR REVIEW GOVERNMENT FINANCED OR CONDUCTED RESEARCH OR DEVELOPMENT WORK.		X	d. TO ACT IN LIAISON CAPACITY AMONG GOVERNMENTAL OR NON-GOVERNMENTAL AGENCIES OR PERSONS DOING SUCH RESEARCH OR DEVELOPMENT WORK	X	

II. ASSIGNMENT OF INVENTION

Executive Order 10096 provides that Government employees who are employed or assigned to perform any of the duties listed in Section I, items 7a through 7d above, and who make inventions as a direct result of, or make inventions having a direct relation to their assigned duties, may be required to assign the entire right, title and interest in the invention to the Government. Therefore, if any of the question 7a through 7d above were answered in the affirmative, and the inventor believes that the invention was made as a direct result of, or related directly to his assigned duties, and in the inventor may sign the statement below and omit Sections III and IV of this questionnaire. In case of doubt, assistance should be requested from a Navy Patent representative.

AS THE INVENTION DESCRIBED HEREIN WAS MADE AS A DIRECT RESULT OF THE PERFORMANCE OF MY ASSIGNED DUTIES, I HEREBY AGREE TO ASSIGN THE ENTIRE RIGHT, TITLE AND INTEREST IN THE INVENTION TO THE GOVERNMENT AND I UNDERSTAND THAT I WILL RETAIN NO RIGHTS IN THE INVENTION.

(b) (6)

INVENTOR'S SIGNATURE

10/26/2015
DATE

III. RELATIONSHIP BETWEEN INVENTION AND INVENTOR'S ASSIGNED DUTIES

ITEM	YES	NO	ITEM	YES	NO
1. DID INVENTOR HAVE THE IDEA FOR THE INVENTION BEFORE WORK WAS DONE ON IT BY ANYONE ON GOVERNMENT TIME?	X		3. WAS THIS TASK ASSIGNED TO INVENTOR BEFORE HE "MADE" THE INVENTION?		X
2. WAS THE INVENTION A SET GOAL OF A SPECIFIC OR DETAILED TASK ASSIGNED TO THE INVENTOR?		X	4. COULD THIS TASK HAVE BEEN SUCCESSFULLY COMPLETED WITHOUT "MAKING" AN INVENTION?	X	
5. INVENTOR'S OFFICIAL DUTIES AT THE TIME THE INVENTION WAS "MADE" (specify in detail those duties or assigned tasks or projects which were related or closely connected to the invention. If in doubt, attach a copy of applicable position description or as much of it as sets forth pertinent duties. If no related duties, tasks or projects were assigned to the inventor, state any related or closely connected tasks or projects assigned to the inventor's Branch or Section, if known. If the invention did not closely relate to either the inventor's duties or those of his Branch or Section, give a general statement of duties assigned).					

There is no relationship whatsoever between my assigned duties and the invention. This invention was made independently of any job performance or assigned tasks by the Branch or Section.

My job duties in AIR 4.4.5.1 entail working in support of the Warfighter in the capacity of Aerospace Engineer in the area of Fuel Thermal Management Systems design and analysis, on such Navy programs as VCAT, F-18, F-35 and NPATH, as well as in support of the P-8A and UCLASS.

6. DESCRIBE THE RELATIONSHIP BETWEEN THE INVENTOR AND THE INVENTOR'S OFFICIAL DUTIES, ASSIGNED TASKS OR PROJECTS AS STATED IN ITEM #5 ABOVE.

There is no relationship whatsoever between my assigned duties and the invention. This invention was made independently of any job performance or assigned tasks by the Branch or Section.

IV. MAKING OF THE INVENTION

1. CIRCUMSTANCES SURROUNDING THE "MAKING" OF THE INVENTION (State when, where and how)

The theoretical inventive concept described herein is not 'made' per se; it is a theoretical concept only (at least for now). However, the following laboratory experiment is proposed - In view of the inventive concept's described physics, it is suggested that the Hayasaka and Takeuchi experiment (PRL, December 1989 – see concept description paper) be repeated under the following conditions: a pressure of 10^{-4} to 10^{-2} Pa in the evacuated chamber, a gyro-rotation frequency range of 1.3×10^4 to 10^5 rpm, and most importantly, under high rates of rotational and possibly vibrational acceleration (to ensure abrupt departure from thermodynamic equilibrium). It is further suggested, that the gyro-rotor be electrically charged, with a unit order surface charge density.

2a. WAS THE INVENTION DESCRIBED IN DRAWINGS, SKETCHES AND WRITINGS FROM WHICH INVENTION COULD BE CONSIDERED "MADE"; IF "NO" OMIT 2b.	YES NO	3a. WAS A MODEL OR FULL SIZE DEVICE MADE OF THE INVENTION OR ITS PROCESS TRIED OUT? IF "NO", OMIT 3a AND 3c.	YES NO
2b. HOURS SPENT BY INVENTOR IN MAKING THESE DRAWINGS, SKETCHES AND WRITINGS OWN TIME <u>X</u> GOV'T TIME _____	XXX	b. WAS THE MODEL OR DEVICE MADE AND TESTED OR THE PROCESS TRIED OUT BECAUSE IT WAS (1) DOUBTFUL WHETHER IT WOULD WORK AT ALL (2) DESIRED TO DETERMINE ITS USEFULNESS TO NAVY	
4. WAS THE INVENTION DEVELOPED FROM A CRUDE FORM TO A PRACTICAL FORM USING GOVERNMENT TIME, FACILITIES, EQUIPMENT, MATERIALS, FUNDS, SPECIAL INFORMATION OR TIME OR SERVICES OF OTHER GOVERNMENT EMPLOYEES?	NO	c. HOURS SPENT BY INVENTOR IN MAKING THE MODEL OR DEVICE OR TRYING OUT THE PROCESS OWN TIME _____ GOV'T TIME _____	XXX
5. IN THE MAKING OF THE DRAWINGS, SKETCHES AND WRITINGS AND ANY MODEL OR FULL SIZE DEVICE OF THE INVENTION AND IN THE OPERATING, TESTING, TRYING OUT AND DEVELOPMENT OF THE INVENTION, WHAT WERE THE CONTRIBUTIONS OF THE GOVERNMENT AND THE INVENTOR OF FACILITIES, EQUIPMENT, MATERIALS, FUNDS, SPECIAL INFORMATION OR TIME OR SERVICES OF OTHER GOVERNMENT EMPLOYEES?			

a. GOVERNMENT CONTRIBUTION

NONE

b. INVENTOR'S CONTRIBUTION

The entire Inventive Concept (invention) and anything else that pertains to it, was the inventor's own work, with no government contribution whatsoever.

INVENTOR (Signature) (b) (6)

(b) (6)

26 Oct 2015
DATE

RECORD AND DISCLOSURE OF INVENTION

FOR USE BY NAVY
INTELLECTUAL PROPERTY OFFICE

DATE DISCLOSURE RECEIVED 10/28/15 NAVY CASE NO. PAX 205

INSTRUCTIONS: A Navy employee should use this form when submitting an invention disclosure to the Department of the Navy. Fill each blank with the requested information or enter "NONE" as appropriate. Original and two copies should be printed or typed and forwarded to the intellectual property office responsible for providing services to your activity. Where space on the form is inadequate, enter "see attached page," use plain pages as needed, and identify item by number. When completely executed, this form becomes an important legal document useful in proving priority of invention. This form may also be used by a contractor or grantee for disclosing an invention to the Navy.

PART 1. RECORD OF INVENTION

1. INVENTOR(S)	ADDRESS	POSITION TITLE	EMPLOYER (Activity & Code No., or Company & address)
(b) (6)	(b) (6)	AEROSPACE ENGINEER	NAVAIR / NAWCAD AIR (b) (6)

2. DESCRIPTIVE TITLE OF INVENTION

THE INERTIAL MASS REDUCTION DEVICE

3. CONCEPTION, INITIAL RECORDS AND RESULTS OF FIRST MODEL

a. EARLIEST DATE AND PLACE INVENTION WAS CONCEIVED (Identify persons and records to support date and place)
 10-01-2015 - CONCEPT DISCLOSURE TO THE OFFICE OF PATENT COUNSEL, NAS PATUXENT RIVER AND TO (b) (6) (b) (6) NAVAIR (b) (6)

b. DATE AND PRESENT LOCATION OF FIRST SKETCH, DRAWING OR PHOTO AND FIRST WRITTEN DESCRIPTION (Such as notebook entries, etc.)
 10-01-2015 - SAME AS ABOVE

c. DATE AND PLACE OF COMPLETION OF FIRST MODEL, PROTOTYPE, PRELIMINARY SYNTHESIS, FORMULATION, ETC., AND ITS PRESENT LOCATION
 NOT APPLICABLE - THIS IS ONLY A THEORETICAL CONCEPT, FOR NOW.

d. DATE AND PLACE OF FIRST TEST OR OPERATION AND THE RESULTS (Give name and address of witness, and present location of records)
 NOT APPLICABLE - THIS IS ONLY A THEORETICAL CONCEPT, FOR NOW.

4. OTHER RECORDS (Notebook entries, descriptions, reports, drawings, etc.)

IDENTIFICATION	DATE OF DOCUMENT	PRESENT LOCATION
THE INERTIAL MASS REDUCTION DEVICE - Concept Description Paper	10-01-2015	TO BE ATTACHED TO THIS OFFICIAL DISCLOSURE

5. OTHER INDIVIDUALS TO WHOM INVENTION WAS DISCLOSED

NAME	ACTIVITY OR COMPANY INDIVIDUAL REPRESENTS	DATE DISCLOSED	TYPE (oral or written disclosures)
(b) (6)	(b) (6)	10-01-2015	WRITTEN
	(b) (6)	10-01-2015	WRITTEN AND ORAL
	(b) (6)	10-01-2015	WRITTEN
	NAVAIR / Air 4.4	10-01-2015	WRITTEN
	NAVAIR / Air 4.4.5	10-01-2015	WRITTEN
	NAVAIR / Air 4.4.5.1	10-01-2015	ORAL

6. DATE AND PLACE OF OTHER TESTS OR OPERATIONS, AND THE RESULTS (List name and address of witnesses and identify present location of records)
 For now this is only a theoretical concept, however a simple laboratory experiment is proposed in the concept description paper submitted with this Intake.

7. IDENTIFY ANY PAST, PRESENT OR CONTEMPLATED USE, SALE, OR PUBLICATION OF THE INVENTION

Theoretical Concept only (no concept enablement) was submitted for publication to the SAE International Journal of Aerospace (Abstract has been accepted – awaiting finalized peer review).

8. LIST ANY CLOSELY RELATED PATENTS, PATENT APPLICATIONS AND PUBLICATIONS OF YOURS OR OTHER PERSONS

Navy Case PAX 182 – Patent Application (b) (6) – patent application titled: 'Electromagnetic Field Generator and Method to Generate an Electromagnetic Field'.

Recent paper discusses the possibility of achieving extreme speeds – (b) (6) 2015 'Conditional Possibility of Spacecraft Propulsion at Superluminal Speeds' – Int. J. Space Science and Engineering, Vol. 3, No.1, pp 89-92.

PART II. DISCLOSURE OF INVENTION

Attach on separate sheets of paper a full and complete description of the invention, using the outline given below.

a. PURPOSE. State the purpose of the invention.

The original inventive concept described herein, is named the Inertial Mass Reduction Device (IMRD) and works in conjunction with the physics of the High Energy Electromagnetic Field Generator (HEEMFG) described in Navy case PAX 182. When put in practice, this system can provide the design of energy generation machinery with power output levels much higher than those currently achievable. The utilization of such high power sources for Aerospace Power and Propulsion generation, as it pertains to reduction in an hybrid aerospace/undersea vehicle's inertia (gravitational) mass as a direct result of local Vacuum polarization (coupled with EM field - matter repulsion), is an important application of the described theoretical concept. As a result, extreme hybrid aerospace/undersea craft speeds can be achieved.

b. BACKGROUND. Describe the old methods, materials or apparatus used to perform the purpose of the invention and give their limitations and disadvantages.

This is a revolutionary / breakthrough concept – there are no limitations or disadvantages to this technology.

c. DESCRIPTION AND OPERATION. Describe clearly and completely the best mode of the invention and give a detailed description of its operation and use. Sketches, prints, photos, or other illustrations should be attached. In the description, use reference characters to refer to components in attached illustrations.

Please see detailed concept description paper titled – 'The Inertial Mass Reduction Device' submitted with this Intake (Invention disclosure forms).

d. ADVANTAGES AND NEW FEATURES. State the advantages of the invention over the old methods, materials or apparatus described in paragraph b. above, and the features believed to be new.

Please see detailed concept description paper titled – 'The Inertial Mass Reduction Device' submitted with this Intake.

e. ALTERNATIVES. Indicate any alternative methods, materials, or apparatus of the invention. – THERE ARE NO ALTERNATIVES.

f. CONTRIBUTIONS BY INVENTORS. If this is a joint invention, indicate what contribution was made by each inventor. – N/A – I am the sole inventor.

PART III. CERTIFICATION OF INVENTORS

I certify that the invention disclosed herein and in the attached documents is the sole joint invention of the undersigned and that the statements and answers are true to my best knowledge and belief.

Date	10/26/2015	(b) (6)
Date	Signature	
Date	Signature	

PART IV. CERTIFICATION OF WITNESSES

I certify that the invention described herein and in the attached documents has been disclosed to and understood by me.

Date	26 Oct 2015	(b) (6)	Business Address
Date	Signature		NAVAFIR 4.4-5.1
			Business Address

DEPARTMENT OF THE NAVY
OFFICE OF NAVAL RESEARCH
ARLINGTON VA 22217

DIRECTIVE: ONR 5870.1
NAVY CASE NO.

PATENT RIGHTS QUESTIONNAIRE

PRIVACY ACT STATEMENT - Under the authority of Executive order 10096, information regarding the making of your invention is requested in order to make a patent rights determination. The information provided by you will become a permanent part of the Navy patent case file on your invention. The information provided will not be divulged without your written authorization to anyone other than agencies of the U.S. Government with a proper interest in Government rights in inventions. You are required to provide this information and failure to do so could conceivably result in adverse performance evaluation or disciplinary action.

INVENTOR (Last name, first, middle)

COGNIZANT PATENT COUNSEL

(b) (6)

DESCRIPTIVE TITLE OF INVENTION

THE INERTIAL MASS REDUCTION DEVICE

CONCISE DESCRIPTION OF INVENTION

The original inventive concept described herein, is named the Inertial Mass Reduction Device (IMRD), and works in conjunction with the physics of the High Energy Electromagnetic Field Generator (HEEMFG) described in Navy Case PAX 182. When put in practice, this system can provide the design of energy generation machinery with power output levels much higher than those currently achievable. The utilization of such high power sources for Aerospace Power and Propulsion generation, as it pertains to reduction in an hybrid aerospace/undersea vehicle's inertial (gravitational) mass as a direct result of local Vacuum polarization (coupled with EM field - matter repulsion), is an important application of the described theoretical concept. As a result, extreme hybrid aerospace / undersea craft speeds can be achieved. It is possible to reduce the inertial mass, and hence the gravitational mass, of a system/object in motion, by an abrupt perturbation of the non-linear background of local Spacetime (equivalent to an accelerated excursion far from thermodynamic equilibrium, analogue with Symmetry-breaking). The physical mechanism which drives this diminution in inertial mass is based on the negative pressure (hence repulsive gravity) exhibited by the polarized local Vacuum Energy State (local Vacuum polarization being achieved by simultaneous coupling of accelerated high frequency vibration with accelerated high frequency axial rotation of an electrically charged system/object) in the close proximity of the system/object in question. In other words, inertial mass reduction can be achieved via manipulation of quantum field fluctuations in the local Vacuum Energy State, in the immediate proximity of the object/system. Therefore, it is possible to reduce an air vehicle's/spacecraft's inertia, that is, its resistance to motion/acceleration by polarizing the Vacuum in the close proximity of the moving air vehicle/spacecraft. Polarization of the local Vacuum (Fermion coupling) is analogous to manipulation/modification of the local Spacetime topological lattice energy density. A detailed concept description paper will be attached as an official document of this invention disclosure.

INSTRUCTIONS

Under Executive order 10096 of 23 January 1950, as amended, and SECNAV Instruction 5870.3, it is necessary to determine the relative rights of the inventor and the Government to the invention described above. This determination depends on the circumstances under which the invention was made. The making of an invention generally requires its conception or discovery and also work on it in the form of writings, sketches or drawings or a model of full size device (or a combination of these) from which it can be established that the invention is considered "made" depends upon the circumstances surrounding each invention. For the purpose of this questionnaire, this date may be considered the earliest or first time the essential elements of the invention were fully and clearly disclosed in writings.

sketches or drawings, or in a model or full size device in such a manner that it was clear the invention was sound in principle and could be reduced to practice therefrom by one skilled in the field of the invention.

The inventor should CAREFULLY READ THE ENTIRE QUESTIONNAIRE. He should then answer the questions as completely as possible, using the above definition of the date invention was "made" and the above description as the definition of the invention. Completion of questionnaire includes signatures at the end of the form by inventor and his supervisor. Original and one completed copies are to be returned to the cognizant Patent representative.

I. INVENTOR'S EMPLOYMENT AT THE TIME INVENTION WAS MADE

1. JOB TITLE	AEROSPACE ENGINEER		2. GRADE	DP-04		3. ACTIVITY (Name and Location)	NAWCAD / Fuel Systems Air (b) (6)	
4. LABORATORY OR DEPARTMENT			5. DIVISION OR BRANCH	4.4.5		6. SECTION OR UNIT	4.4.5.1	
7. OFFICIAL WORK ASSIGNMENT	YES	NO	OFFICIAL WORK ASSIGNMENT				YES	NO
a. TO INVENT OR IMPROVE OR PERFECT ANY PROCESS, MACHINE, MANUFACTURE, OR COMPOSITION OF MATTER		X	b. TO CONDUCT OR PERFORM RESEARCH OR DEVELOPMENT WORK					X
c. TO SUPERVISE, DIRECT, COORDINATE OR REVIEW GOVERNMENT FINANCED OR CONDUCTED RESEARCH OR DEVELOPMENT WORK.		X	d. TO ACT IN LIAISON CAPACITY AMONG GOVERNMENTAL OR NON-GOVERNMENTAL AGENCIES OR PERSONS DOING SUCH RESEARCH OR DEVELOPMENT WORK					X

II. ASSIGNMENT OF INVENTION

Executive Order 10096 provides that Government employees who are employed or assigned to perform any of the duties listed in Section I, items 7a through 7d above, and who make inventions as a direct result of, or make inventions having a direct relation to their assigned duties, may be required to assign the entire right, title and interest in the invention to the Government. Therefore, if any of the question 7a through 7d above were answered in the affirmative, and the inventor believes that the invention was made as a direct result of, or related directly to his assigned duties, and in the Inventor may sign the statement below and omit Sections III and IV of this questionnaire. In case of doubt, assistance should be requested from a Navy Patent representative.

AS THE INVENTION DESCRIBED HEREIN WAS MADE AS A DIRECT RESULT OF THE PERFORMANCE OF MY ASSIGNED DUTIES, I HEREBY AGREE TO ASSIGN THE ENTIRE RIGHT, TITLE AND INTEREST IN THE INVENTION TO THE GOVERNMENT AND I UNDERSTAND THAT I WILL RETAIN NO RIGHTS IN THE INVENTION.

(b) (6)

INVENTOR'S SIGNATURE

7/26/2015
DATE

III. RELATIONSHIP BETWEEN INVENTION AND INVENTOR'S ASSIGNED DUTIES

ITEM	YES	NO	ITEM	YES	NO
1. DID INVENTOR HAVE THE IDEA FOR THE INVENTION BEFORE WORK WAS DONE ON IT BY ANYONE ON GOVERNMENT TIME?	X		3. WAS THIS TASK ASSIGNED TO INVENTOR BEFORE HE "MADE" THE INVENTION?		X
2. WAS THE INVENTION A SET GOAL OF A SPECIFIC OR DETAILED TASK ASSIGNED TO THE INVENTOR?		X	4. COULD THIS TASK HAVE BEEN SUCCESSFULLY COMPLETED WITHOUT "MAKING" AN INVENTION?	X	

5. INVENTOR'S OFFICIAL DUTIES AT THE TIME THE INVENTION WAS "MADE" (specify in detail those duties or assigned tasks or projects which were related or closely connected to the invention. If in doubt, attach a copy of applicable position description or as much of it as sets forth pertinent duties. If no related duties, tasks or projects were assigned to the Inventor, state any related or closely connected tasks or projects assigned to the Inventor's Branch or Section, if known. If the invention did not closely relate to either the inventor's duties or those of his Branch or Section, give a general statement of duties assigned).

--There is no relationship whatsoever between my assigned duties and the invention. This invention was made independently of any job performance or assigned tasks by the Branch or Section.

My job duties in AIR 4.4.5.1 entail working in support of the Warfighter in the capacity of Aerospace Engineer in the area of Fuel Thermal Management Systems design and analysis, on such Navy programs as VCAT, F-18, F-35 and NPATH, as well as in support of the P-8A and UCLASS.

6. DESCRIBE THE RELATIONSHIP BETWEEN THE INVENTOR AND THE INVENTOR'S OFFICIAL DUTIES, ASSIGNED TASKS OR PROJECTS AS STATED IN ITEM #5 ABOVE.

There is no relationship whatsoever between my assigned duties and the invention. This invention was made independently of any job performance or assigned tasks by the Branch or Section.

IV. MAKING OF THE INVENTION**1. CIRCUMSTANCES SURROUNDING THE "MAKING" OF THE INVENTION (State when, where and how)**

The theoretical inventive concept described herein is not 'made' per se; it is a theoretical concept only (at least for now). However, the following laboratory experiment is proposed - In view of the inventive concept's described physics, it is suggested that the Hayasaka and Takeuchi experiment (PRL, December 1989 - see concept description paper) be repeated under the following conditions: a pressure of 10^{-4} to 10^{-2} Pa in the evacuated chamber, a gyro-rotation frequency range of 1.3×10^4 to 10^5 rpm, and most importantly, under high rates of rotational and possibly vibrational acceleration (to ensure abrupt departure from thermodynamic equilibrium). It is further suggested, that the gyro-rotor be electrically charged, with a unit order surface charge density.

2a. WAS THE INVENTION DESCRIBED IN DRAWINGS, SKETCHES AND WRITINGS FROM WHICH INVENTION COULD BE CONSIDERED "MADE"; IF "NO" OMIT 2b.	<input type="checkbox"/> YES	<input type="checkbox"/> NO	3a. WAS A MODEL OR FULL SIZE DEVICE MADE OF THE INVENTION OR ITS PROCESS TRIED OUT? IF "NO", OMIT 3a AND 3c.	<input type="checkbox"/> YES	<input type="checkbox"/> NO
2b. HOURS SPENT BY INVENTOR IN MAKING THESE DRAWINGS, SKETCHES AND WRITINGS	<input type="checkbox"/> XXX	<input type="checkbox"/> XXX	b. WAS THE MODEL OR DEVICE MADE AND TESTED OR THE PROCESS TRIED OUT BECAUSE IT WAS	<input type="checkbox"/>	<input type="checkbox"/>
OWN TIME <input checked="" type="checkbox"/> X GOV'T TIME _____			(1) DOUBTFUL WHETHER IT WOULD WORK AT ALL	<input type="checkbox"/>	<input type="checkbox"/>
4. WAS THE INVENTION DEVELOPED FROM A CRUDE FORM TO A PRACTICAL FORM USING GOVERNMENT TIME, FACILITIES, EQUIPMENT, MATERIALS, FUNDS, SPECIAL INFORMATION OR TIME OR SERVICES OF OTHER GOVERNMENT EMPLOYEES?	<input type="checkbox"/>	<input type="checkbox"/> NO	(2) DESIRED TO DETERMINE ITS USEFULNESS TO NAVY	<input type="checkbox"/>	<input type="checkbox"/>
5. IN THE MAKING OF THE DRAWINGS, SKETCHES AND WRITINGS AND ANY MODEL OR FULL SIZE DEVICE OF THE INVENTION AND IN THE OPERATING, TESTING, TRYING OUT AND DEVELOPMENT OF THE INVENTION, WHAT WERE THE CONTRIBUTIONS OF THE GOVERNMENT AND THE INVENTOR OF FACILITIES, EQUIPMENT, MATERIALS, FUNDS SPECIAL INFORMATION OR TIME OR SERVICES OF OTHER GOVERNMENT EMPLOYEES?			c. HOURS SPENT BY INVENTOR IN MAKING THE MODEL OR DEVICE OR TRYING OUT THE PROCESS	<input type="checkbox"/> XXX	<input type="checkbox"/> XXX
a. GOVERNMENT CONTRIBUTION			OWN TIME _____ GOV'T TIME _____		

NONE

b. INVENTOR'S CONTRIBUTION

The entire Inventive Concept (invention) and anything else that pertains to it, was the inventor's own work, with no government contribution whatsoever.

INVENTOR (Sign)

(b) (6)

(b) (6)

26 Oct 2015

DATE

(b) (6)

M CIV AD

From: (b) (6) CIV AD
Sent: Tuesday, October 27, 2015 9:54
To: (b) (6) AIR N00019; (b) (6)
Cc: (b) (6) CIV NAWCAD TTO (b) (6) Air 4.0T; (b) (6) D CIV AD, 11.0
CIV NAVAIRSYSCOM 4.4.B; (b) (6) CIV NAVAIR 4.4T;
(b) (6) AIR-4.4.5; (b) (6) CIV NAVAIR, 4.4
Subject: INTAKE - (b) (6) INERTIAL MASS REDUCTION DEVICE
Attachments: PATENT RIGHTS QUESTIONNAIRE - (b) (6) F; RECORD AND DISCLOSURE OF
INVENTION - (b) (6) DF; The Inertial Mass Reduction Device.pdf
Signed By: (b) (6) @navy.mil
Importance: High

Greetings,

Please see the attached invention disclosure forms (signed) and inventive concept paper (INERTIAL MASS REDUCTION DEVICE).

The attached concept description paper discloses a breakthrough/revolutionary Power and Propulsion technology, which when enabled will give the United States Warfighter the battlefield supremacy.

Please schedule me for the earliest possible Invention Evaluation Board meeting, so that I may properly present my invention.

This intellectual property is sensitive in nature and is for your eyes only, please treat accordingly.

Thank you.

Sal

(b) (6)

Aerospace Engineer
DoD/DoN/NAVAIR/NAWCAD AIR 4 (b) (6)
NAS Patuxent River, MD
(301)(b) (6)

THERE ARE NO UNIVERSAL IMPOSSIBILITIES, ONLY CONDITIONAL POSSIBILITIES.

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

From: (b) (6) CIV AD
Sent: Friday, October 02, 2015 10:46 AM
To: (b) (6) / AD
Cc: (b) (6)
A CIV NAWCAD TTO (b) (6)
Subject: INTAKE - (b) (6)

Attached for your review, please find a brochure explaining the Patent Process, the Invention Disclosure form (Record and Disclosure of Invention), Patent Rights Questionnaire and Guide to completing the invention disclosure.

Should you have any questions, please feel free to contact myself, (b) (6)

Have a great day!

~~~~~  
(b) (6)

Office of Counsel, NAWCAD  
47076 Liljencrantz Road, Bldg. (b) (6)  
Patuxent River, MD 20670  
Phone: (b) (6)  
Fax: (b) (6)  
E-mail: (b) (6) @navy.mil.

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

From: (b) (6) CIV AD  
Sent: Thursday, October 01, 2015 10:47 AM  
To: (b) (6) CIV NAVAIR N00019; (b) (6) (b) (6) CIV AD; (b) (6)  
A CIV NAWCAD TTO (b) (6)  
Cc: (b) (6) ST, Air 4.0T; (b) (6) IV NAVAIRSYSCOM 4.4.B; (b) (6) CIV NAVAIR 4.4T;  
(b) (6) AIR-4.4.5; (b) (6) IV NAVAIR, 4.4  
Subject: INERTIAL MASS REDUCTION DEVICE - PAX 182 Follow-up  
Importance: High

Greetings,

It is possible to reduce the inertial mass, and hence the gravitational mass, of a system/object in motion, by an abrupt perturbation of the non-linear background of local Spacetime (equivalent to an accelerated excursion far from thermodynamic equilibrium, analogous with Symmetry-breaking).

The physical mechanism which drives this diminution in inertial mass is based on the negative pressure (hence repulsive gravity) exhibited by the polarized local Vacuum Energy State (local Vacuum polarization being achieved by simultaneous coupling of accelerated high frequency vibration with accelerated high frequency axial rotation of an electrically charged system/object) in the close proximity of the system/object in question.

In other words, inertial mass reduction can be achieved via manipulation of quantum field fluctuations in the local Vacuum Energy State, in the immediate proximity of the object/system. Therefore, it is possible to reduce an air vehicle's/spacecraft's inertia, that is, its resistance to motion/acceleration by polarizing the Vacuum in the close proximity of the moving air vehicle/spacecraft.

Polarization of the local Vacuum is analogous to manipulation/modification of the local Spacetime topological lattice energy density.

As a result, extreme speeds can be achieved (see the attached paper on the nature of such possibilities).

Think of the Vacuum Energy State as a chaotic system comprised of random, highly energetic fluctuations in the collective quantum fields which define it. Considering Ilya Prigogine's Nobel Prize work on far from equilibrium thermodynamics, a chaotic system can self-organize if subjected to three conditions, namely: the system must be non-linear, it must experience an abrupt excursion far from thermodynamic equilibrium, and it must be subjected to an energy flux (Order from Chaos).

An artificially generated high energy / high frequency electromagnetic (EM) field (as described in Navy Case PAX 182) can fulfill all three conditions simultaneously (especially in an accelerated vibration/rotation mode), when strongly interacting with the local Vacuum Energy State. Recall that these interactions are induced by the coupling of hyper-

frequency axial rotation (spin) and hyper-frequency vibration (harmonic oscillations/abrupt pulsations) of electrically charged systems (High Energy Electromagnetic Field Generator), placed on the outside of the air vehicle/spacecraft in strategic locations. In this manner local Vacuum polarization, namely the coherence of Vacuum fluctuations within the immediate proximity of the air vehicle's/spacecraft's surface (outside Vacuum boundary) is achieved, allowing for 'smooth sailing' through the negative pressure (repulsive gravity) of the 'void' (the Void within the Vacuum). Moreover, due to the nature of the 'emergent physics' involved, it is possible to experience spatio-temporal displacement effects, by using this device/system.

In summary, the original inventive concept described herein, is named the Inertial Mass Reduction Device (IMRD) and works in conjunction with the High Energy Electromagnetic Field Generator (HEEMFG) described in Navy case PAX 182. When put in practice, this system can provide the design of energy generation machinery with power output levels much higher than those currently achievable. The utilization of such high power sources for Aerospace Power and Propulsion generation, as it pertains to reduction in an hybrid aerospace/undersea vehicle's inertial (gravitational) mass as a direct result of local Vacuum polarization (coupled with EM field - matter repulsion), is an important application of the described theoretical concept.

Please send me the intake for this new invention disclosure, and also please organize (schedule) an Invention Evaluation Board meeting so that I can properly defend the proposed patent application. A detailed concept descriptive paper will be enclosed as an official document of the intake (work in progress).

This intellectual property is sensitive in nature and is for your eyes only, please treat accordingly.

Thank you.

(b) (6)

Aerospace Engineer

DoD/DoN/NAVAIR/NAWCAD AIR 4

(b) (6)

NAS Patuxent River, MD

(301) (b) (6)

THERE ARE NO UNIVERSAL IMPOSSIBILITIES, ONLY CONDITIONAL POSSIBILITIES.

'EVERYTHING IS EVERYWHERE AT EVERYTIME' - THE TOTALITY PRINCIPLE OF THE VACUUM ENERGY STATE

(b) (6)

CIV AD

**From:** (b) (6) CIV AD  
**Sent:** Friday, April 15, 2016 10:48  
**To:** (b) (6) AVAIR N00019  
**Cc:** (b) (6) CIV AD  
**Subject:** PAX-205, Draft-1  
**Attachments:** PAX-205 Draft-1.pdf  
**Signed By:** (b) (6) @navy.mil

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

From: (b) (6) [mailto:(b) (6)]  
Sent: Friday, April 15, 2016 10:34 AM  
To: (b) (6) CIV AD  
Subject: [Non-DOD Source] PAX-205, Draft-1

(b) (6)

Attached for your review are the figures for PAX-205.

Thanks

(b) (6)

(b) (6)

NOTE: This email is for official communication and may contain privileged and/or confidential information. If you are not the intended recipient, please do not read, copy, forward or disseminate the message or any attachments. Please notify us immediately by e-mail or by calling (b) (6).

1 / 1

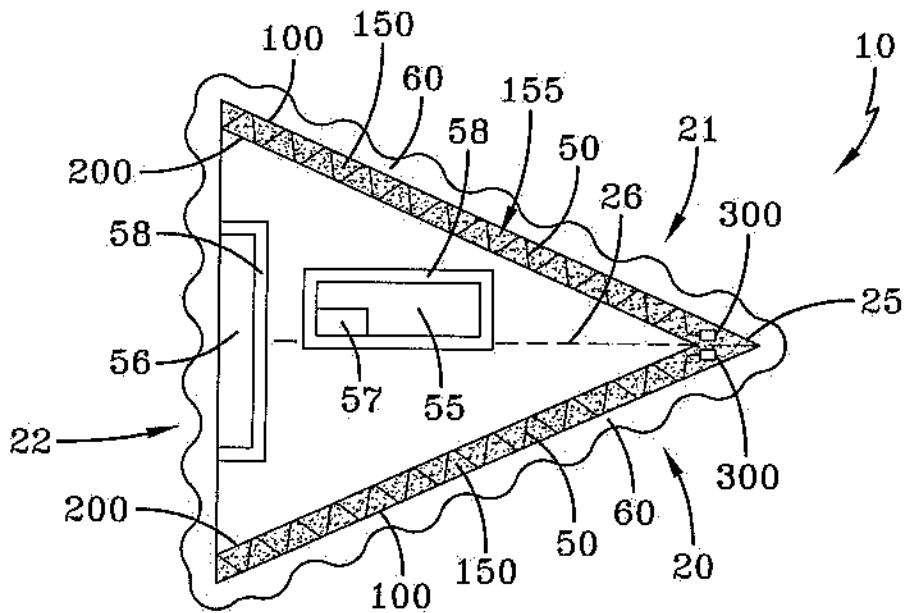
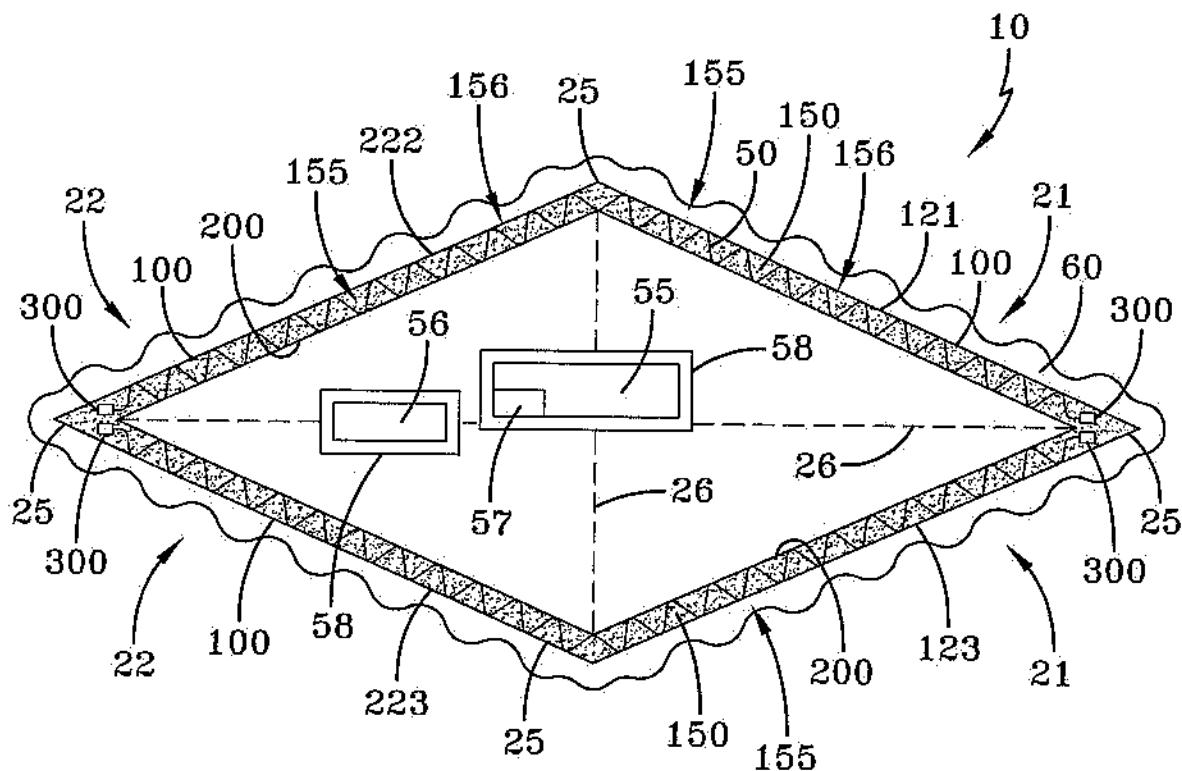


FIG-1



**FIG-2**

## The high energy electromagnetic field generator

Salvatore Cezar Pais

Department of Defense/Department of the Navy,  
Naval Air Systems Command/NAWCAD,  
NAS Patuxent River Maryland 20670, USA  
Email: salvatore.pais@navy.mil  
Email: scpdraconis@yahoo.com

**Abstract:** The original concept described is named the high energy electromagnetic field generator. This concept's governing physics entail the coupling of gyration (high frequency spin), vibration (high frequency abrupt pulsations/harmonic oscillations) and possible curvilinear translation, of electrically charged systems. If we couple the system's high frequency of rotation (30,000 to 100,000 RPM, and higher) with high vibration (abrupt pulsations/harmonic oscillations) frequencies in the range of  $10^9$  to  $10^{18}$  Hertz (and above) we can obtain electromagnetic field intensity values in the range  $10^{24}$  to  $10^{28}$  Watts/m<sup>2</sup> (and beyond). These extremely high electromagnetic field intensity values emphasise the novelty of this concept, especially suited for the design of energy generation machinery with power output levels much higher than those currently achievable. The utilisation of such high power sources for space power and propulsion generation, as it pertains to reduction in a spacecraft's inertial mass as a direct result of local vacuum polarisation, is an important application of the described theoretical concept. In this manner, extreme spacecraft speeds can be achieved.

**Keywords:** faster than light travel; superluminal propulsion; quantum vacuum plasma; QVP; vacuum energy fluctuations; vacuum polarisation; spacetime manipulation; quantum vacuum engineering; quantum field theory; far from equilibrium thermodynamics; spatio-temporal excursion.

Reference to this paper should be made as follows: Pais, S.C. (2015) 'The high energy electromagnetic field generator', *Int. J. Space Science and Engineering*, Vol. 3, No. 4, pp.312–317.

**Biographical notes:** Salvatore Cezar Pais obtained his Doctorate in Mechanical and Aerospace Engineering from Case Western Reserve University, while working as a NASA Graduate Student Research Fellow at NASA Glen (Lewis) Research Center. His research studies deal primarily with defence-oriented work, performed as a General Engineer/Advanced Concepts Analyst at Northrop Grumman Aerospace Systems. At the present time, he works for the Department of Defense, Department of the Navy/Naval Air Systems Command at NAS Patuxent River in Maryland.

## 1 Introduction

The original concept described herein, is named the high energy electromagnetic field generator (HEEMFG). When put in practice, this system can provide the design of energy generation machinery with power output levels much higher than those currently achievable. The utilisation of such high power sources for space power and propulsion generation, as it pertains to reduction in the spacecraft's inertial mass as a direct result of local vacuum polarisation, is an important application of the described theoretical concept.

This concept's governing physics entail the coupling of gyration (high frequency spin), vibration (high frequency abrupt pulsations/harmonic oscillations) and possible curvilinear translation (thus three modes of motion) of electrically charged systems.

There are four known fundamental forces which control matter and therefore control energy, namely the strong and weak nuclear forces, the electromagnetic (EM) force and the gravitational force. In this hierarchy of forces, the EM force is perfectly positioned to be able to manipulate the other three. A stationary electric charge gives rise to an electric (electrostatic) field, while a moving charge generates both an electric and a magnetic field (hence, the EM field); additionally an accelerating charge induces EM radiation in the form of transverse waves, namely light. Mathematically as well as physically, EM field intensity can be represented as the product of electric field strength and magnetic field strength. EM fields act as carriers for both energy and momentum, thus interacting with physical entities at the most fundamental level.

Artificially generated, high energy, EM fields interact strongly with the vacuum energy state (an aggregate/collective state comprised of the superposition of all quantum fields' fluctuations permeating the entire fabric of spacetime), thereby giving rise to emergent physical phenomena (in other words revolutionary/new physics), such as force and matter fields unification. According to quantum field theory, this strong interaction between the fields is based on the mechanism of transfer of vibrational energy between the fields, further inducing local fluctuations in adjacent quantum fields which permeate spacetime (these fields may or may not be EM in nature). Matter, energy, and spacetime are all emergent constructs which arise out of the fundamental framework that is the vacuum, energy state.

Everything that surrounds us, ourselves included, can be described as macroscopic collections of fluctuations, vibrations, oscillations in quantum mechanical fields. Matter is confined energy, 'frozen' in a quantum of time. Therefore, under certain conditions (such as the coupling of hyper-frequency axial spin with hyper-frequency vibrations of electrically charged systems) the rules and special effects of quantum field behaviour also apply to macroscopic physical entities (O'Connell et al., 2010).

Moreover, coupling of hyper-frequency gyration (axial rotation) and hyper-frequency vibrational electrodynamics (as used in the concept herein disclosed) is conducive to a possible physical breakthrough (force field unification is feasible with the concept at hand) in the utilisation of the macroscopic quantum fluctuations vacuum plasma field (quantum vacuum plasma – QVP, in short) as an energy source (or sink), an induced physical phenomenon, for which the technology readiness level has been considerably advanced by a team of research engineers from NASA JSC (Brady et al., 2014). This research involves the use of high radio frequency/microwave driven resonant cavity Q-thruster technology within the context of QVP physics.

The QVP is the electric glue of our plasma universe. The Casimir effect, the Lamb shift, and spontaneous emission, are specific confirmations of the existence of QVP (Milonni, 1994).

It is important to note that in region(s) where the EM fields are strongest, the more potent are the interactions with the QVP, therefore, the higher the induced energy density of the QVP particles which spring into existence (the Dirac Sea of electrons and positrons). These QVP 'particles' may augment the obtained energy levels of the HEEMFG system (even though they are short-lived, these 'virtual' particles have a real effect).

To be more precise, the EM fields created by the HEEMFG system, interact with the vacuum energy state, which is an aggregate state composed of the superposition of all quantum fields' fluctuations filling the entire fabric of spacetime. Contributions to this vacuum state energy density are made by the quantum vacuum-zero point fluctuations, the quantum chromo-dynamics gluon and quark condensates and the newly discovered Higgs field (exhibiting massive 126 GeV particles), among other yet undiscovered fields (super-symmetry). In other words, major contributions to the vacuum energy state are made by collectives of quantum fluctuations in fermionic fields (fields of matter), quantum fluctuations in bosonic fields (fields of force) and quantum fluctuations in scalar fields (Higgs field).

## 2 Concept novelty

The physical equation which describes the maximum intensity achieved by the HEEMFG system is described by the magnitude of the Poynting vector, which in non-relativistic form (accounting for all three modes of motion) can be written as:

$$S_{\max} = f_G (\sigma^2 / \epsilon_0) [R_r \omega + R_v v + v_R] \quad (1)$$

where  $f_G$  is the HEEMFG system geometric shape factor (equal to 1 for a disc configuration),  $\sigma$  is the surface charge density (total electric charge divided by surface area of the HEEMFG system),  $\epsilon_0$  is the electrical permittivity of free space,  $R_r$  is the radius of rotation (disc radius),  $\omega$  is the angular frequency of rotation in rad/s,  $R_v$  is the vibration (harmonic oscillation) amplitude,  $v$  is the angular frequency of vibration in Hertz, and the term  $v_R$  is the curvilinear translation speed (acquired via a propulsive unit of either chemical, nuclear or magneto-plasma-dynamic (VASIMR) type attached to the HEEMFG system – the integrated unit being the spacecraft).

Therefore, if we consider only rotation, given a disc configuration, with  $\sigma = 50,000$  Coulombs/m<sup>2</sup>, a disc (spinning/axially rotating) radius of 2 m and an angular speed of 30,000 RPM, we can generate an EM field intensity ( $S_{\max}$  = rate of energy flow per unit area, or energy flux) value on the order of 10<sup>24</sup> Watts/m<sup>2</sup> (this value does not account for any QVP interactions).

Furthermore, if we couple the high frequency of rotation with high vibration (harmonic oscillation) frequencies in the range of 10<sup>9</sup> to 10<sup>18</sup> Hertz (and above) we can obtain  $S_{\max}$  intensity values in the range 10<sup>24</sup> to 10<sup>28</sup> Watts/m<sup>2</sup> (and beyond). These extremely high EM field intensity values emphasise the novelty of this concept, especially suited for the design of energy generation machinery with power output levels much higher than those currently achievable.

For the case of an accelerating angular frequency of vibration ( $a_{\max} = R_v v^2$ ), neglecting rotation and curvilinear translation, equation (1) becomes (note intrinsic significance of acceleration):

$$S_{\max} = f_G (\sigma^2 / \epsilon_0) [(R_v v^2) t_{op}] \quad (2)$$

where  $t_{op}$  is the operational time for which the charged electrical system is accelerating.

Close inspection of equation (2) results in an important realisation, namely: strong local interaction with the high energetics of the quantum vacuum fields' fluctuations superposition (macroscopic vacuum energy state) is possible in a laboratory environment, by application of high frequency gyration and/or high frequency vibration of minimally charged objects (order of unity), in an acceleration mode. In this manner, a high degree of vacuum energy polarisation can be achieved.

Local polarisation of the vacuum in the close proximity of a spacecraft equipped with an HEEMFG system would have the effect of cohering the highly energetic and random quantum vacuum fields' fluctuations, which virtually block the path of an accelerating spacecraft, in such a manner that the resulting negative pressure of the polarised vacuum allows less laboured motion through it (Froning, 2009).

Spontaneous electron-positron pair production out of the vacuum (Schwinger, 1951; Kim, 2015) is a strong indicator of vacuum polarisation being achieved. Schwinger gives a value of the electric field ( $E$ ) on the order of  $10^{18}$  V/m for this phenomenon to take place. The mass production rate  $(dm/dt)_{pp}$  of particle/anti-particle pairs can be expressed in terms of  $S_{\max}$  (energy flux), namely:

$$2\gamma (dm/dt)_{pp} c^2 = S_{\max} A_S \quad (3)$$

where  $A_S$  is the surface area from which the energy flux emanates,  $c$  is the speed of light in free space, and  $(\gamma)$  is the relativistic stretch factor  $[1 - (v^2/c^2)]^{-1/2}$ . Note that the pair production rate increases with increasing energy flux from the spacecraft's generated EM field. Therefore, the level, to which the vacuum is polarised, thus allowing less laboured motion through it, strictly depends on the artificially generated EM energy flux.

If we consider the boundary condition in the close proximity of the spacecraft where the energy density of the artificially generated EM field equals the local energy density of the polarised vacuum (caused in part by the local zero-point vacuum fluctuations on the order of  $10^{-15}$  Joules/cm<sup>3</sup> and in part by the artificial EM field interacting with the local vacuum energy state) we can write the approximate equivalence:

$$S_{\max} (t_{op} / R_S) = [(h^* v_v^4) / 8\pi^2 c^3] \quad (4)$$

where  $R_S$  is the electromagnetic (EM) field radius at EM wave propagating time  $t_{op}$ , such that  $R_S / t_{op} = c$  (where  $c$  is the light speed in free space),  $(h^*)$  is Planck's constant divided by  $(2\pi)$  and  $(v_v)$  is the frequency of quantum fluctuations in the vacuum (modelled as harmonic oscillators).

Furthermore, given that the left side of equation (4) is on the order of  $(\epsilon_0 E^2)$  where  $E$  is the artificially generated electric field (strength), considering the Schwinger value of  $(E)$  for the onset of spontaneous pair production, we obtain a  $(v_v)$  value on the order of  $10^{22}$  Hertz, which matches our expectations, since the Dirac virtual pair production, results in total annihilation, yielding gamma rays, which occupy the EM frequency spectrum of  $10^{19}$  Hertz and above.

A recent paper (Pais, 2015) considers the possibility of superluminal spacecraft propulsion in a special relativity framework. It is observed that under certain physical conditions, the singularity expressed by the relativistic stretch factor ‘gamma’ as the spacecraft’s speed ( $v$ ) approaches the speed of light ( $c$ ), is no longer present in the physical picture. This involves the instantaneous removal of energy-mass from the system (spacecraft) when the spacecraft’s speed reaches ( $v = c / 2$ ). The author discusses the possibility of using exotic matter (negative mass/negative energy density) to bring about this effect. This may not have to be the only alternative. The artificial generation of gravity waves in the locality of the spacecraft, can result in energy-mass removal (gravity waves are propagating fluctuations in gravitational fields, whose amplitude and frequency are a function of the motion of the masses involved).

Moreover, it is feasible to remove energy-mass from the system by enabling vacuum polarisation, as discussed by Puthoff (Puthoff, 2002; Haisch et al., 1994); in that diminution of inertial (and thus gravitational) mass can be achieved via manipulation of quantum field fluctuations in the vacuum. In other words, it is possible to reduce a spacecraft’s inertia, that is, its resistance to motion/acceleration by polarising the vacuum in the close proximity of the moving spacecraft. As a result, extreme speeds can be achieved.

Think of the vacuum energy state as a chaotic system comprised of random, highly energetic fluctuations in the collective quantum fields which define it. Considering Prigogine’s (1977) work on far from equilibrium thermodynamics, a chaotic system can self-organise if subjected to three conditions, namely: the system must be nonlinear, it must experience an abrupt excursion far from thermodynamic equilibrium, and it must be subjected to an energy flux (order from chaos).

An artificially generated high energy EM field can fulfil all three conditions simultaneously, when strongly interacting (especially in an accelerated vibration/rotation mode) with the local vacuum energy state. Recall that these interactions are induced by the coupling of hyper-frequency axial rotation (spin) and hyper-frequency vibration (harmonic oscillations/abrupt pulsations) of electrically charged systems (HEEMFG), placed on the outside of the spacecraft in strategic locations. In this manner, local vacuum polarisation, namely the coherence of vacuum fluctuations within the immediate proximity of the spacecraft’s surface (outside vacuum boundary) is achieved, allowing for ‘smooth sailing’ through the negative pressure (repulsive gravity) of the void.

As an aside, force and matter fields unification (Gross, 2007) is feasible with the concept at hand, due to the extremely strong interactions (EM in nature) between ordinary matter and the QVP/vacuum energy state (interactions which exhibit extremely high energies on Planck length scales in the immediate proximity of the disc/spacecraft surface).

### 3 Conclusions

This original concept, which may represent a breakthrough technology, does reveal a novel approach to the design of energy generation machinery with power output levels much higher than those currently achievable by conventional means.

The utilisation of such high power sources for space power and propulsion generation, as it pertains to reduction in the spacecraft’s inertial mass as a direct result of

local vacuum polarisation, is an important application of the described theoretical concept. In this manner, extreme spacecraft speeds can be achieved.

To be more exact, the concept at hand can be utilised in the design of a device to manipulate/modify the local spacetime lattice (topology) energy density, which can be achieved via local vacuum energy polarisation. Moreover, due to the nature of the 'emergent physics' involved, it is possible to experience spatio-temporal displacement (excursion) effects.

### Disclaimer

The views espoused and conclusions reached in this technical paper are the author's own, and do not necessarily reflect the views or beliefs of the US Government and the Department of the Navy.

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(b) (6)

CIV USN NAVAIRWARCENACDIV MD (USA)

**From:** (b) (6) @navy.mil>  
**Sent:** Friday, April 27, 2018 9:02 AM  
**To:** (b) (6) CIV NAVAIR, 4.3T; (b) (6) CIV NASPATUXENTRIVERMD  
4.3.5.1 Aircraft Fire Protection; (b) (6) CIV Air Vehicle Engineering Department,  
4.3.5.1; (b) (6) CIV Air Vehicle Engineering, 4.3.5.1; (b) (6) NAVAIR;  
(b) (6) CIV NAVAIR 4.4T  
**Cc:** (b) (6) CIV NAVAIR N00019; (b) (6) CIV AIR, 4.0T; (b) (6) CIV  
NAVAIR, 4.0 M.1.5  
**Subject:** Engineering Macroscopic Quantum Coherence  
**Attachments:** AIAA 2017-5343\_(b) (.PDF)  
**Importance:** High

April 27, 2018

Gentlemen, please recall that in my recently published AIAA paper (AIAA 2017-5343; attached), I stated on page 3:

"It is a well-known facet of quantum field theory that everything can be described in quantum mechanical terms. The complex interactions between a physical system and its surroundings (environment), disrupt the quantum mechanical nature of a system and render it classical under ordinary observation. This process is known as decoherence [3]. However, it is argued that we can retard (delay) decoherence (and possibly even suppress it - namely decouple a physical system from the environment) by accelerated spin and/or accelerated vibration of electrically charged matter under rapid acceleration transients.

This may be the very condition to achieve a state of macroscopic quantum coherence, the idea being that we never let the system achieve thermodynamic equilibrium, by constantly delaying the onset of relaxation to equilibrium (hence the production of maximal entropy is delayed). The system may "violently" react by generating "anomalous" emergent phenomena, such as, but not limited to, inertial mass reduction."

It looks like the following paper, just published in the prestigious Nature Letters, experimentally confirms the importance of high frequency vibrations in achieving "Macroscopic Quantum Coherence"... please see articles on it:

<https://www.mnn.com/green-tech/research-innovations/stories/quantum-entanglement-demonstrated-level-visible-naked-eye>

<https://theconversation.com/experiment-shows-einstiens-quantum-spooky-action-approaches-the-human-scale-95372>

<https://www.nature.com/articles/s41586-018-0038-x>

The implications are incredibly important to the future of NAVAIR S&T, and especially to the affirmative validity of my 'theories'...

Please recall that my Section 219 HEEMFG work considers that by coupling an electrically charged system's high frequency of axial spin (with accelerated vibration), operated in a rapidly accelerated transient mode, we can achieve extremely high electromagnetic field-intensity (EM energy flux) values. Controlled Motion of electrically charged matter (from solid to plasma) via Accelerated Spin and/or Accelerated Vibration under Rapid Acceleration Transients , can result in high intensity electromagnetic energy flux, thereby resulting in novel energy harvesting and generation techniques and devices. These devices can greatly enhance NAVAIR/NAWCAD's electronic warfare technologies arsenal.

Furthermore, this work can result in the enablement of Macroscopic Quantum Coherence, that is the engineering of macroscopic states to behave as if quantum mechanical in nature (superposition, entanglement, tunneling, teleportation) - this is revolutionary for the Emerging field of Quantum Technologies, with applications in Quantum Computing, Spintronics, AI., Crypto., etc...

Thank you for your consideration.

Respectfully,

(b) [REDACTED]

(b) (6) [REDACTED]

(b) (6) Engineer

DoD/DoN/NAVAIR/NAWCAD/AIR 4 (b) (6) [REDACTED]

NAS Patuxent River, MD, 20670

301 (b) (6) [REDACTED]

(b) (6)

CIV USN NAVAIRWARCENACDIV MD (USA)

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**From:** (b) (6) CIV NAVAIR N00019 <(b) (6) @navy.mil>  
**Sent:** Monday, January 8, 2018 8:13 AM  
**To:** (b) (6) @uspto.gov  
**Cc:** (b) (6) @gmail.com  
**Subject:** webex meeting for 15/141270 (PAX 205)  
**Attachments:** PAX 205 - EXAMINER DEFENSE BRIEF - PHYSICS.pdf; PAX205 - (b) (6) letter of support 11 Dec 2017.pdf; PAX205 -A IAA 2017-5343\_(b) (6) paper.pdf; PAX205-AIAA 2017 SPACE Forum - (b) (6).pdf; PAX205-SAE 2017-01-2040 \_ (b) (6) - paper.pdf; PAX205 - 2017-01-2040\_(b) (6).pdf

**Importance:** High

Dear Examiner:

In regard to the upcoming Examiner Interview for 15/141,270, scheduled for January 17, 2018 at 10:00 AM, please see attached documents, which we plan to go over during the Interview.

Thank you in advance for your time and consideration.

(b) (6)

(b) (6)

Naval Air Warfare Center Aircraft Division Office of Counsel

(b) (6)

Patuxent River, MD 20670

Tel.: (301) (b) (6)

Fax: (301) (b) (6)

(b) (6)

CIV USN NAVAIRWARCENACDIV MD (USA)

**From:** (b) (6) CIV AD <(b) (6) @navy.mil>  
**Sent:** Thursday, May 17, 2018 6:41 AM  
**To:** (b) (6) CIV NASPATUXENTRIVERMD 4.3.5.1 Aircraft Fire Protection;  
(b) (6) CIV Air Vehicle Engineering Department, 4.3.5.1; (b) (6) CIV  
NAVAIR, 4.0 M.1.5  
**Cc:** (b) (6), Air 4.0T; (b) (6) CIV AIR, 4.0T; (b) (6) CIV NAVAIR  
N00019  
**Subject:** ENERGY DENSITY INSIDE PROTON IS HIGHER THAN THAT INSIDE NEUTRON STAR  
**Importance:** High

May 17, 2018

Greetings Gentlemen - if this new finding is correct we are on the verge of a true revolution in Physics...and everything else that emerges.

The "Impossible" becomes Conditionally Possible.

"The pressure inside the particles that make up every atom in the universe could be greater than the pressure inside the densest stars, according to a new measurement.

Scientists at Jefferson Lab in Virginia calculated the pressure using the lab's Continuous Electron Beam Accelerator Facility, or CEBAF, and some tricky mathematics. The measurement will mainly be useful for fundamentally understanding these particles' nature. The calculation is pretty mind-boggling."

"Neutron stars are some of the densest objects we know of in the universe,"

(b) (6), Jefferson Lab Hall B leader, told Gizmodo. "It's an order of magnitude bigger than that. It could be the record observation of a pressure on Earth."

The researchers calculated the pressure faced by the quarks that make up protons at  $10^{35}$  pascals, equalling  $10^{30}$  times the pressure at sea level, according to the paper published in Nature."

See Article at:

<https://gizmodo.com/scientists-calculate-the-pressure-inside-a-proton-and-i-1826080338>

THIS SHOWS HOW TRULY SIGNIFICANT THE NOTION OF THE VACUUM ENERGY STATE (VES) IS, IN GOVERNING ALL UNIVERSAL PHYSICS.

The VES is the fundamental structure of everything and all, all of physics and physical mechanisms pay homage to its existence.

(b)

(b) (6)

(b) (6) Engineer

DOD/DoN/NAVAIR/NAWCAD/AIR (b) (6)

NAS Patuxent River, MD. 20670

301-(b) (6)

(b) (6)

CIV USN NAVAIRWARCENACDIV MD (USA)

**From:** (b) (6) CIV AD <(b) (6)>@navy.mil>  
**Sent:** Wednesday, April 20, 2016 9:41 AM  
**To:** (b) (6) Air 4.0T; (b) (6) NAWCAD, NAVAIR; (b) (6)  
**Cc:** SES COMNAVAIRSYSCOMPATUXENTRIVERMD  
(b) (6) CIV NAVAIR N00019; (b) (6) CIV NAVAIR 4.4T; (b) (6)  
(b) (6) CIV NAVAIRSYSCOM 4.4.B; (b) (6) NAVAIR; (b) (6)  
AIR-4.4.5; (b) (6) CIV NAVAIR, 4.4; (b) (6) CIV NAWCAD TTO  
(b) (6)  
**Subject:** Advanced Power and Propulsion Concepts accepted by Top Experts  
**Attachments:** IJSPACSE030402(b).pdf  
**Importance:** High

Greetings,

I wish to bring to your attention a just published paper - herein attached (b) (6) (2015) 'The High Energy Electromagnetic Field Generator', Int. J. Space Science and Engineering, Vol.3, No.4. pp. 312-317}, which has great implications as to the feasibility of gravitational (and thus inertial) mass reduction by accelerated Spin and accelerated Vibration of electrically charged systems.

The enablement of extreme craft speeds, and thus the feasibility of intergalactic travel using current engineering materials and methods, is made possible with this publication.

It is my belief that the experimental investigations which this technical paper can initiate may prove fundamental to eventually generating the high electromagnetic energy flux values necessary to locally polarize the Vacuum Energy State, thereby manipulating the local Spacetime topological lattice energy density.

If we can engineer the metastructure of the local quantum vacuum state (comprised of multiple structures), then we can engineer the fabric of our reality at the most fundamental level (thus affecting a physical system's inertial and gravitational properties). This realization would greatly advance the fields of Aerospace Propulsion and Power Generation, eventually making possible our dream of Intergalactic Flight.

What is most unique about this paper is that it has already won the approval of (b) (6) one of the world's top authorities in Advanced Power and Propulsion / Quantum Vacuum Engineering, who has given (b) (6) unreserved approval of this paper, calling it "a very good paper". (b) (6) has also forwarded the paper to several of (b) (6) colleagues, including (b) (6), another top subject matter expert.

This paper espouses a theoretical concept only, and in no way, shape or form reads on any of claims (no engineering enablement is discussed) of Navy Case PAX 182 'Electromagnetic Field Generator and Method to create Electromagnetic Field' (U.S. Patent Application (b) (6)) or Navy Case PAX 205 'The Inertial Mass Reduction Device', recommended for patent application (now titled 'Craft using an Inertial Mass Reduction Device').

One thing is for sure, the existence of this technical paper and its current acceptance by foremost authorities in the field will greatly facilitate the patent examination process, hopefully culminating in two essential patents for the technologically advanced future of the Navy.

Thank you for all your continued support and consideration.

(b) (6)

(b) (6)

(b) (6) Engineer

DoD/DoN/NAVAIR/NAWCAD AIR 4.4.5.1

NAS Patuxent River, MD

(301)(b) (6)

(b) (6)

CIV USN NAVAIRWARCENACDIV MD (USA)

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**From:** (b) (6), Air 4.0T <(b) (6)@navy.mil>  
**Sent:** Tuesday, December 19, 2017 12:37 AM  
**To:** (b) (6) CIV AD; (b) (6) CIV NAVAIR N00019; (b) (6) M CIV AD  
**Subject:** (b) (6) letter of support 11 Dec 2017.pdf  
**Attachments:** (b) (6) letter of support 11 Dec 2017.pdf

(b) ,

This is the correct letter. Let me know if you want me to send it to (b) (6)

r/ (b)  
(b)

(b) (6)

CIV USN NAVAIRWARCENACDIV MD (USA)

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**From:** (b) (6) CIV NAVAIR N00019 <(b) (6) @navy.mil>  
**Sent:** Monday, April 18, 2016 2:17 PM  
**To:** (b) (6) M CIV AD  
**Subject:** FW: [Non-DoD Source] PAX-205, Draft-2  
**Attachments:** PAX-205\_Draft-2.pdf; Pax 205 - REVISED.doc

Ready to file.

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

From: (b) (6) [mailto: (b) (6) @ (b) (6).net]  
Sent: Monday, April 18, 2016 2:06 PM  
To: (b) (6) CIV NAVAIR N00019; (b) (6) M CIV AD  
Subject: [Non-DoD Source] PAX-205, Draft-2

(b) (6)

Attached for your review are the updated figures for PAX-205.

Thanks

(b) (6)

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~~NOTE: This is a confidential communication and may contain privileged and/or confidential information. If you are not the intended recipient, please delete this message and any attachments, and do not read, copy, retain or disseminate the message or any attachment. Please notify us immediately by e-mail or by calling (b) (6).~~

(b) (6)

CIV USN NAVAIRWARCENACDIV MD (USA)

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**From:** (b) (6) CIV AD - (b) (6) @navy.mil>  
**Sent:** Monday, February 22, 2016 9:01 AM  
**To:** (b) (6)  
**Cc:** (b) (6) CIV NAVAIR N00019; (b) (6) M CIV AD; (b) (6) D CIV  
**Subject:** NSWCCD, West Bethesda, OOL  
**Attachments:** Navy Case PAX 205 - IEB Briefing attached  
PAX 205 - INERTIAL MASS REDUCTION DEVICE.ppt

**Importance:** High

Good morning (b) (6),

Please see the attached IEB briefing on the subject of Navy Case PAX 205 - The Inertial Mass Reduction Device.

Please forward this document to all members of the Invention Evaluation Board who will be in attendance at my presentation on February 29, 2016.

If possible , please focus their attention at the concept description paper, imbedded on Slide 2 of the attached presentation.

It is truly important that the IEB members understand the physical concept (original and revolutionary in nature) that this invention is based on, namely:

[It is possible to reduce the inertial mass and hence the gravitational mass, of a system/object in motion, by an abrupt perturbation of the non-linear background of local Spacetime, equivalent to an accelerated excursion far from thermodynamic equilibrium (analogous with Symmetry-breaking induced by abrupt changes of state/phase transitions)].

Thank you for all your assistance, I look forward to seeing you there.

(b) (6)

(b) (6)

Engineer

DoD/DoN/NAVAIR/NAWCAD AIR 4.4.5,1

NAS Patuxent River, MD

(301)(b) (6)

THERE ARE NO UNIVERSAL IMPOSSIBILITIES, ONLY CONDITIONAL POSSIBILITIES.

(b) (6)

CIV USN NAVAIRWARCENACDIV MD (USA)

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**From:** (b) (6) @USPTO.GOV  
**Sent:** Thursday, December 7, 2017 8:21 AM  
**To:** (b) (6) CIV NAVAIR N00019  
**Cc:** (b) (6) @USPTO.GOV  
**Subject:** [Non-DoD Source] USPTO Automated Interview Request (AIR): Successfully forwarded request to Examiner for US Application Number 15141270

Your Automated Interview Request for application number 15141270 for 1-17-2018 10:00 AM ET has been processed and forwarded to the Examiner. You will receive a communication from the Examiner within 2 business days from this email via either (b) (6) or (b) (6) @navy.mil.

By submitting this interview request, you have certified:

This submission is requested to be accepted as an authorization for this interview to communicate via the internet. Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned concerning scheduling of the interview via video conference, instant messaging, or electronic mail, and to conduct the interview in accordance with office practice including video conferencing.

If you do not receive a communication from the Examiner within 2 business days, please contact the Examiner, the Examiner's supervisor or an Interview Specialist (<http://www.uspto.gov/patent/laws-and-regulations/interview-practice/interview-specialist>).

Additional interview policy information may be found on our website at: <http://www.uspto.gov/patent/laws-and-regulations/interview-practice>

If an interview is conducted, both you and the Examiner will be receiving an Interview Satisfaction Survey in order to get your opinions on the conducted interview. By filling out the survey, you will be helping to improve both Applicant's and Examiner's interview experiences in the future.

Thank you for using the USPTO AIR.

Please do not reply to this message; it was sent from an unmonitored e-mail address.

(b) (6)

CIV USN NAVAIRWARCENACDIV MD (USA)

**From:** (b) (6) M CIV AD <(b) (6)@navy.mil>  
**Sent:** Thursday, April 28, 2016 5:12 PM  
**To:** (b) (6) CIV AD  
**Cc:** (b) (6) (b) (6) M CIV AD; (b) (6)  
**Subject:** CIV NAVAIR N00019  
Patent Application Filed! (PAX 205 / Application # (b) (6))

The patent application relating to your invention has now been filed with the United States Patent & Trademark Office! Application / Serial (b) (6) was filed on April 28, 2016.

Our mission is to protect the Navy's intellectual property from claims by third parties by patenting Navy inventions and to leverage Navy technology through technology transfer.

Your incentive award is being processed and you should receive your payment soon. Thank you so much for your cooperation!

Should you have any questions or concerns, please feel free to contact me.

Thank you and have a great day!

~~~~~

(b) (6)

(b) (6)

Office of Counsel, NAWCAD

(b) (6)

Patuxent River, MD 20670

Phone: (301) (b) (6)

Fax: (301) (b) (6)

E-mail: (b) (6) @navy.mil

(b) (6)

CIV USN NAVAIRWARCENACDIV MD (USA)

From: (b) (6) CIV NAVAIR N00019 <(b) (6) @navy.mil>
Sent: Monday, May 9, 2016 1:20 PM
To: (b) (6) M CIV AD
Subject: RE: PAX 205 - Invoice
Attachments: Purchase order FORM to IDI PAX 205.pdf

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

From: (b) (6) M CIV AD
Sent: Monday, May 09, 2016 1:13 PM
To: (b) (6) CIV NAVAIR N00019
Cc: (b) (6) M CIV AD
Subject: FW: PAX 205 - Invoice

Please sign

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

From: (b) (6) CIV NAVAIR 7.8.2.1
Sent: Monday, May 09, 2016 10:43 AM
To: (b) (6) M CIV AD
Subject: RE: PAX 205 - Invoice

Can't think of a better reason than that! (b) (6)

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

From: (b) (6) M CIV AD
Sent: Monday, May 09, 2016 10:34 AM
To: (b) (6) CIV NAVAIR 7.8.2.1
Cc: (b) (6) M CIV AD
Subject: FW: PAX 205 - Invoice

Blaming it on t (b) (6) I'm sorry for the confusion ...

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

From: (b) (6) M CIV AD
Sent: Monday, May 09, 2016 9:48 AM
To: (b) (6) CIV NAVAIR 7.8.2.1
Cc: (b) (6) M CIV AD
Subject: PAX 205 - Invoice

Please sign. Thank you!

~~~~~  
(b) (6)

(b) (6)

Office of Counsel, NAWCAD

(b) (6)

Patuxent River, MD 20670

Phone: (301)(b) (6)

Fax: (301)(b) (6)

E-mail: (b) (6) @navy.mil

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

From: (b) (6) [mailto: (b) (6)@s (b) (6).net]

Sent: Wednesday, April 20, 2016 1:06 PM

To: (b) (6) M CIV AD

Subject: [Non-DoD Source] IDI Invoices

(b) (6),

Attached is a pdf of the invoices for PAX-170 and PAX-205.

Thanks

(b) (6)

(b) (6)

NOTE: This is a confidential communication and may contain privileged and/or sensitive information. If you are not the intended recipient, please delete this message and any attachments, and do not read, copy, retain or disseminate the message or any attachments. Please notify us immediately by e-mail or by calling 22d(b) (6)

(b) (6)

**CIV USN NAVAIRWARCENACDIV MD (USA)**

(b)  
(6)

Congratulations!! Now to build a small demo to put the theory into a demo. The sec 219 BAR/TT call is out - could be the genesis of a BAR/TT project.

(b)

(b) (6) [REDACTED], ST  
(b) (6) [REDACTED]

301-(b) (6)

~~Privacy Act Notice. This e-mail communication may contain information subject to the provisions of the Privacy Act (P.L. 93-573), or may be business sensitive. This data is intended only for the use of the individual(s) addressed above and is to be treated in a confidential manner. If you have received this e-mail in error, please immediately notify me by return e-mail and delete this message from your system.~~

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

From: (b) (6) CIV AD  
Sent: Friday, April 29, 2016 9:01 AM  
To: (b) (6), Air 4.0T  
Cc: (b) (6) NAWCAD, NAVAIR; (b) (6) CIV NAVAIR N00019; (b) (6) CIV NAVAIR 4.4T;  
(b) (6) CIV NAVAIRSYSCOM 4.4.B; (b) (6) NAVAIR; (b) (6) AIR-4.4.5; (b) (6) CIV  
NAVAIR, 4.4. (b) (6) COMNAVAIRSYSCOMPATUXENTRIVERMD  
Subject: PAX 205 - A Craft Using an Inertial Mass Reduction Device  
Importance: High

(b) (6)

Per our latest conversation, I am writing to inform you that Navy Case PAX 205 - 'A Craft Using an Inertial Mass Reduction Device' is now US Patent Application Serial No. (b) (6), filed with the United States Patent & Trademark Office on April 28, 2016.

(b) (6) [REDACTED] has done an admirable job and produced an exceptional patent application, (b) [REDACTED] work is highly commendable.

The inventive concept due to its simplicity and minimalism, despite its advanced quantum vacuum physics, pays homage to Occam's Razor.

Thank you Sir for your recommendation and your continued support.

(b) (6)

(b) (6)

(b) (6) Engineer

DoD/DoN/NAVAIR/NAWCAD AIR 4.4.5.1

NAS Patuxent River, MD

(301)(b) (6)

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

From: (b) (6) M CIV AD

Sent: Thursday, April 28, 2016 5:12 PM

To: (b) (6) CIV AD

Cc: (b) (6)

(b) (6)

CIV AD (b) (6)

CIV NAVAIR N00019

Subject: Patent Application Filed! (PAX 205 / Application # 15141270)

The patent application relating to your invention has now been filed with the United States Patent & Trademark Office! Application / Serial (b) (6) was filed on April 28, 2016.

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Should you have any questions or concerns, please feel free to contact me.

Thank you and have a great day!

(b) (6)

(b) (6) \_\_\_\_\_

Office of Counsel, NAWCAD

(b) (6)

Patuxent River, MD 20670

Phone: (301)(b) (6)

Fax: (301)(b) (6)

E-mail: (b) (6) @navy.mil