

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3686230

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
ANTTI A. PULKKINEN	01/04/2016
TODD M. BONALSKY	01/06/2015
TROY J. AMES	12/29/2015
CARL F. HOSTETTER	12/02/2015
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	UNITED STATES OF AMERICA AS REPRESENTED BY THE ADMINISTRATOR OF THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
<b>Street Address:</b>	300 E STREET SW
<b>City:</b>	WASHINGTON
<b>State/Country:</b>	D.C.
<b>Postal Code:</b>	20546
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	14856090
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(301)286-9502
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	3012862385
<b>Email:</b>	Milelene.Gunyon-1@nasa.gov
<b>Correspondent Name:</b>	MILELENE GUNYON
<b>Address Line 1:</b>	NASA GODDARD SPACE FLIGHT CENTER
<b>Address Line 2:</b>	OFFICE OF PATENT COUNSEL M/S 140.1
<b>Address Line 4:</b>	GREENBELT, MARYLAND 20771
<b>ATTORNEY DOCKET NUMBER:</b>	GSC-17256-1
<b>NAME OF SUBMITTER:</b>	MILELENE GUNYON
<b>SIGNATURE:</b>	/MILELENE GUNYON/
<b>DATE SIGNED:</b>	01/07/2016
<b>Total Attachments: 5</b>	

source=Assignment-Final#page1.tif  
source=Assignment-Final#page3.tif  
source=Assignment-Final#page4.tif  
source=GSC-17256-1 Assignment-2-hostetter copy#page1.tif  
source=assignment-bonalsky-final#page1.tif



National  
Aeronautics and  
Space  
Administration

Patent Application

## Assignment to the Government (by Government Employee)

Title of Invention: METHOD OF USING POWER GRID AS LARGE  
ANTENNA FOR GEOPHYSICAL IMAGING

Inventor(s): Antti Pulkkinen, Todd Bonalsky, Troy Ames, Carl Hostetter

NASA Case No.: GSC-17256-1 Application No.: 14/856090 Filing Date\*: 9/16/2015

WHEREAS, the parties to this Assignment and Agreement are the undersigned inventor(s) and the United States Government (hereafter Government), as represented by the Administrator of the National Aeronautics and Space Administration;

WHEREAS, the making of this Assignment and Agreement is in accordance with 37 CFR Part 501, and

WHEREAS, the undersigned inventor(s) has (have) executed, on the date(s) indicated below, an application for United States Patent on the above-entitled invention.

NOW THEREFORE, in consideration of employment by the Government, the undersigned hereby:

1. Assign to the Government my (our) full and exclusive right in and to said invention within the United States of America, its territories and possessions, and my (our) entire right, title and interest in and to said application, and any corresponding continuation or divisional application(s) and any right(s) that may issue therefrom.

2. Agree to grant to the Government my (our) full and exclusive foreign rights in and to said invention, in accordance with 37 CFR 501.9(d), including rights of priority under the International Convention of Paris (1883), as amended. If the Government chooses not to file an application in any foreign country, I (we) may request rights in that country, in accordance with 37 CFR 501.9(d), and such rights will be subject 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 foreign patent which may issue on such invention.

3. Agree, at the expense of the Government, (a) to execute any document for, (b) to deliver any requested information to, and (c) to cooperate in any manner with the Government in order to allow the Government to protect any interest transferred by this Assignment and Agreement.

\*4. Authorize and request the attorneys of record in the application to insert the application number and filing date above/when required

[Signature]  
(Signature of Inventor)

Antti A. Pulkkinen  
(Inventor's Typed Name)

1/4/2016  
(Date Assignment Executed)

4221 S. 5th Ave. #100  
(Mailing Address - Including Country)

1/4/2016  
(Date Application Executed)

37, W. IV. AVE.  
MO 63102

[Signature]  
(Signature of Inventor)

Todd M. Bonalsky  
(Inventor's Typed Name)

[Signature]  
(Date Assignment Executed)

[Mailing Address]  
(Mailing Address - Including Country)

[Signature]  
(Date Application Executed)

[Signature]  
(Signature of Inventor)

Troy J. Ames  
(Inventor's Typed Name)

[Signature]  
(Date Assignment Executed)

[Mailing Address]  
(Mailing Address - Including Country)

[Signature]  
(Date Application Executed)



National  
Aeronautics and  
Space  
Administration

Patent Application

## Assignment to the Government (by Government Employee)

Title of Invention: METHOD OF USING POWER GRID AS LARGE  
ANTENNA FOR GEOPHYSICAL IMAGING

Inventor(s): Antti Pulkkinen, Todd Bonalsky, Troy Ames, Carl Hostetter

NASA Case No.: GSC-17256-1 Application No.\*: 14/856090 Filing Date\*: 9/16/2015

WHEREAS, the parties to this Assignment and Agreement are the undersigned inventor(s) and the United States Government (hereafter Government), as represented by the Administrator of the National Aeronautics and Space Administration;

WHEREAS, the making of this Assignment and Agreement is in accordance with 37 CFR Part 501; and

WHEREAS, the undersigned inventor(s) has (have) executed, on the date(s) indicated below, an application for United States Patent on the above-entitled invention.

NOW THEREFORE, in consideration of employment by the Government, the undersigned hereby:

1. Assign to the Government my (our) full and exclusive right in and to said invention within the United States of America, its territories and possessions, and my (our) entire right, title and interest in and to said application, and any corresponding continuation or divisional application(s) and any patent(s) that may issue therefrom.

2. Agree to grant to the Government my (our) full and exclusive foreign rights in and to said invention, in accordance with 37 CFR 501.9(d), including rights of priority under the International Convention of Paris (1883), as amended. If the Government chooses not to file an application in any foreign country, I (we) may request rights in that country, in accordance with 37 CFR 501.9(d), and such rights will be subject 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 foreign patent which may issue on such invention.

3. Agree, at the expense of the Government, (a) to execute any document for, (b) to deliver any requested information to, and (c) to cooperate in any manner with the Government in order to allow the Government to protect any interest transferred by this Assignment and Agreement.

\*4. Authorize and request the attorneys of record in the application to insert the application number and filing date above when required.

\_\_\_\_\_  
(Signature of Inventor) (Date Assignment Executed) (Date Application Executed)

Antti A. Pulkkinen

\_\_\_\_\_  
(Inventor's Typed Name)

\_\_\_\_\_  
(Mailing Address - Including Country)

\_\_\_\_\_  
(Signature of Inventor)

\_\_\_\_\_  
(Date Assignment Executed)

\_\_\_\_\_  
(Date Application Executed)

Todd M. Bonalsky

\_\_\_\_\_  
(Inventor's Typed Name)

\_\_\_\_\_  
(Mailing Address - Including Country)

Troy Ames

\_\_\_\_\_  
(Signature of Inventor)

12/29/2015

\_\_\_\_\_  
(Date Assignment Executed)

\_\_\_\_\_  
(Date Application Executed)

Troy J. Ames

\_\_\_\_\_  
(Inventor's Typed Name)

7955 Helmart Drive, Laurel, MD, 20723 USA

\_\_\_\_\_  
(Mailing Address - Including Country)



National  
Aeronautics and  
Space  
Administration

Patent Application

## Assignment to the Government (by Government Employee)

Title of Invention: METHOD OF USING POWER GRID AS LARGE  
ANTENNA FOR GEOPHYSICAL IMAGING

Inventor(s): Antti Pulkkinen, Todd Bonalsky, Troy Ames, Carl Hostetter

NASA Case No.: GSC-17256-1 Application No.\*: 14/856090 Filing Date\*: 9/16/15

WHEREAS, the parties to this Assignment and Agreement are the undersigned inventor(s) and the United States Government (hereafter Government), as represented by the Administrator of the National Aeronautics and Space Administration;

WHEREAS, the making of this Assignment and Agreement is in accordance with 37 CFR Part 501; and

WHEREAS, the undersigned inventor(s) has (have) executed, on the date(s) indicated below, an application for United States Patent on the above-entitled invention.

NOW THEREFORE, in consideration of employment by the Government, the undersigned hereby:

1. Assign to the Government my (our) full and exclusive right in and to said invention within the United States of America, its territories and possessions, and my (our) entire right, title and interest in and to said application, and any corresponding continuation or divisional application(s) and any patent(s) that may issue therefrom.

2. Agree to grant to the Government my (our) full and exclusive foreign rights in and to said invention, in accordance with 37 CFR 501.9(d), including rights of priority under the International Convention of Paris (1883), as amended. If the Government chooses not to file an application in any foreign country, I (we) may request rights in that country, in accordance with 37 CFR 501.9(d), and such rights will be subject 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 foreign patent which may issue on such invention.

3. Agree, at the expense of the Government, (a) to execute any document for, (b) to deliver any requested information to, and (c) to cooperate in any manner with the Government in order to allow the Government to protect any interest transferred by this Assignment and Agreement.

\*4. Authorize and request the attorneys of record in the application to insert the application number and filing date above when required.

Carl F. Hostetter  
(Signature of Inventor)

\_\_\_\_\_  
(Date Assignment Executed)

\_\_\_\_\_  
(Date Application Executed)

Carl F. Hostetter  
(Inventor's Typed Name)

2509 Ambling Circle Crofton, MD 21114  
(Mailing Address - Including Country)

\_\_\_\_\_  
(Signature of Inventor)

\_\_\_\_\_  
(Date Assignment Executed)

\_\_\_\_\_  
(Date Application Executed)

\_\_\_\_\_  
(Inventor's Typed Name)

\_\_\_\_\_  
(Mailing Address - Including Country)

\_\_\_\_\_  
(Signature of Inventor)

\_\_\_\_\_  
(Date Assignment Executed)

\_\_\_\_\_  
(Date Application Executed)

\_\_\_\_\_  
(Inventor's Typed Name)

\_\_\_\_\_  
(Mailing Address - Including Country)

NASA FORM 430 DEC 2000 PREVIOUS EDITIONS ARE OBSOLETE.

**PATENT**  
**REEL: 037433 FRAME: 0812**



## Assignment to the Government (by Government Employee)

Title of Invention: METHOD OF USING POWER GRID AS LARGE  
ANTENNA FOR GEOPHYSICAL IMAGING

Inventor(s): Antti Pulkkinen, Todd Bonalsky, Troy Ames, Carl Hostetter

NASA Case No.: GSC-17256-1 Application No.\*: 14/856090 Filing Date\*: 9/16/15

WHEREAS, the parties to this Assignment and Agreement are the undersigned inventor(s) and the United States Government (hereafter Government), as represented by the Administrator of the National Aeronautics and Space Administration;

WHEREAS, the making of this Assignment and Agreement is in accordance with 37 CFR Part 501; and

WHEREAS, the undersigned inventor(s) has (have) executed, on the date(s) indicated below, an application for United States Patent on the above-entitled invention.

NOW THEREFORE, in consideration of employment by the Government, the undersigned hereby:

1. Assign to the Government my (our) full and exclusive right in and to said invention within the United States of America, its territories and possessions, and my (our) entire right, title and interest in and to said application, and any corresponding continuation or divisional application(s) and any patent(s) that may issue therefrom.

2. Agree to grant to the Government my (our) full and exclusive foreign rights in and to said invention, in accordance with 37 CFR 501.9(d), including rights of priority under the International Convention of Paris (1883), as amended. If the Government chooses not to file an application in any foreign country, I (we) may request rights in that country, in accordance with 37 CFR 501.9(d), and such rights will be subject 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 foreign patent which may issue on such invention.

3. Agree, at the expense of the Government, (a) to execute any document for, (b) to deliver any requested information to, and (c) to cooperate in any manner with the Government in order to allow the Government to protect any interest transferred by this Assignment and Agreement.

\*4. Authorize and request the attorneys of record in the application to insert the application number and filing date above when required.

Carl F. Hostetter 12/2/2015  
(Signature of Inventor) (Date Assignment Executed) (Date Application Executed)  
Carl F. Hostetter 2509 Ambling Circle Crofton, MD 21114  
(Inventor's Typed Name) (Mailing Address - Including Country)

\_\_\_\_\_  
(Signature of Inventor) (Date Assignment Executed) (Date Application Executed)

\_\_\_\_\_  
(Inventor's Typed Name) (Mailing Address - Including Country)

\_\_\_\_\_  
(Signature of Inventor) (Date Assignment Executed) (Date Application Executed)

\_\_\_\_\_  
(Inventor's Typed Name) (Mailing Address - Including Country)



National  
Aeronautics and  
Space  
Administration

Patent Application

## Assignment to the Government (by Government Employee)

Title of Invention: METHOD OF USING POWER GRID AS LARGE  
ANTENNA FOR GEOPHYSICAL IMAGING

Inventor(s): Antti Pulkkinen, Todd Bonalsky, Troy Ames, Carl Hostetter

NASA Case No.: GSC-17256-1 Application No.: 14/856090 Filing Date\*: 9/16/2015

WHEREAS, the parties to this Assignment and Agreement are the undersigned inventor(s) and the United States Government (hereafter Government), as represented by the Administrator of the National Aeronautics and Space Administration;

WHEREAS, the making of this Assignment and Agreement is in accordance with 37 CFR Part 501; and

WHEREAS, the undersigned inventor(s) has (have) executed, on the date(s) indicated below, an application for United States Patent on the above-entitled invention.

NOW THEREFORE, in consideration of employment by the Government, the undersigned hereby:

1. Assign to the Government my (our) full and exclusive right in and to said invention within the United States of America, its territories and possessions, and my (our) entire right, title and interest in and to said application, and any corresponding continuation or divisional application(s) and any patent(s) that may issue therefrom.

2. Agree to grant to the Government my (our) full and exclusive foreign rights in and to said invention, in accordance with 37 CFR 501.9(d), including rights of priority under the International Convention of Paris (1883), as amended. If the Government chooses not to file an application in any foreign country, I (we) may request rights in that country, in accordance with 37 CFR 501.9(d), and such rights will be subject 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 foreign patent which may issue on such invention.

3. Agree, at the expense of the Government, (a) to execute any document for, (b) to deliver any requested information to, and (c) to cooperate in any manner with the Government in order to allow the Government to protect any interest transferred by this Assignment and Agreement.

\*4. Authorize and request the attorneys of record in the application to insert the application number and filing date above when required.

\_\_\_\_\_  
(Signature of Inventor) (Date Assignment Executed) (Date Application Executed)

Antti A. Pulkkinen

\_\_\_\_\_  
(Inventor's Typed Name)

\_\_\_\_\_  
(Mailing Address - Including Country)

Todd M. Bonalsky

\_\_\_\_\_  
(Signature of Inventor)

1/16/16

\_\_\_\_\_  
(Date Assignment Executed)

\_\_\_\_\_  
(Date Application Executed)

Todd M. Bonalsky

\_\_\_\_\_  
(Inventor's Typed Name)

61 Hamilton Ave. Fords, NJ

\_\_\_\_\_  
(Mailing Address - Including Country)

\_\_\_\_\_  
(Signature of Inventor)

\_\_\_\_\_  
(Date Assignment Executed)

\_\_\_\_\_  
(Date Application Executed)

Troy J. Ames

\_\_\_\_\_  
(Inventor's Typed Name)

\_\_\_\_\_  
(Mailing Address - Including Country)

NASA FORM 430 DEC 2000 PREVIOUS EDITIONS ARE OBSOLETE.

RECORDED: 01/07/2016

PATENT  
REEL: 037433 FRAME: 0814