PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
George Morgan MATHEWS	07/19/2013
Markus DEITTERT	02/26/2013
Arthur George RICHARDS	05/20/2013

RECEIVING PARTY DATA

Name:	BAE SYSTEMS PLC
Street Address:	6 Carlton Gardens
City:	London
State/Country:	UNITED KINGDOM
Postal Code:	SW1Y 5AD

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13980321

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent via US Mail when the fax attempt is unsuccessful.

Phone: 7038366620

Email: albina.torres-price@bipc.com

Correspondent Name: Buchanan Ingersoll & Rooney

Address Line 1: P.O. Box 1404

Address Line 4: Alexandria, VIRGINIA 22314-1404

ATTORNEY DOCKET NUMBER:	1033963-000286
NAME OF SUBMITTER:	Patrick C. Keane
Signature:	/PCKeane/
Date:	07/30/2013
	PAIENI

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Total Attachments: 6
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PATENT REEL: 030905 FRAME: 0502

ASSIGNMENT

(JOINT)

THIS ASSIGNMENT, by George Morgan MATHEWS residing at 7 Park Avenue, Bexley, NSW 2207, Australia, Markus DEITTERT residing at BAE SYSTEMS, ATC Sowerby, PO Box 5, Filton, Bristol, South Gloucestershire, BS34 7QW, United Kingdom, and Arthur George RICHARDS residing at University of Bristol, Senate House, Tyndall Avenue, Bristol, BS8 1TR, United Kingdom (hereinafter referred to as "the Assignors"), respectively, witnesseth:

WHEF TRAJEC	REAS,	the As Y PLAI	ssignors have invented certain new and useful improvements in NNINGset forth in an application for Letters Patent of the Ur	nited	
States, which					
(1)		provisional application			
	(a)		bearing Application No and filed on		
	(b)		to be filed herewith; or		
(2)	\boxtimes	non-p	provisional application		
	(a)	\boxtimes	bearing Application No. PCT/GB2012/050038, and filed on 10 January 2012;	агу	
	(b)		having an oath or declaration executed on even date herewith prior filing of application;	to	
	(c)		having an oath or declaration executed on a different date than this Assignment; and		

WHEREAS, BAE SYSTEMS plc, a corporation duly organized under and pursuant to the laws of England & Wales, and having a principal place of business at 6 Carlton Gardens, London, SW1Y 5AD, United Kingdom (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including

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(7/06) Page 1 of 2 provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns;

AND the Assignors hereby authorize and request the attorneys of Buchanan Ingersoll & Rooney PC to insert in the spaces provided above the title of the invention, filing date, application number, and attorney's docket number of said application when known.

AND the Assignors hereby request the Commissioner of Patents to issue any and all said Letters Patent of the United States to the Assignee as the Assignee of said inventions, the Letters Patent to be issued for the sole use and behoof of the Assignee, its successors, legal representatives, and assigns.

DATE 19/7/2013	George Morgan MATHEWS
	George Worgan W. C. T. E. C.
DATE	
	Markus DEITTERT
DATE	
D/114	Arthur George RICHARDS

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ASSIGNMENT

(JOINT)

THIS ASSIGNMENT, by George Morgan MATHEWS residing at 7 Park Avenue, Bexley, NSW 2207, Australia, Markus DEITTERT residing at BAE SYSTEMS, ATC Sowerby, PO Box 5, Filton, Bristol, South Gloucestershire, BS34 7QW, United Kingdom, and Arthur George RICHARDS residing at University of Bristol, Senate House, Tyndall Avenue, Bristol, BS8 1TR, United Kingdom (hereinafter referred to as "the Assignors"), respectively, witnesseth:

				signors have invented certain new and useful imp	
States, wh					
(1)		provis	ional application	
	ł	(a)		bearing Application No.	and filed on
		(b)		to be filed herewith; or	
(2	2)	\boxtimes	non-p	rovisional application	
	!	(a)	\boxtimes	bearing Application No. PCT/GB2012/050038, a 2012;	nd filed on 10 January
		(b)		having an oath or declaration executed on even filing of application;	date herewith prior to
		(c)		having an oath or declaration executed on a difference Assignment; and	erent date than this

WHEREAS, BAE SYSTEMS plc, a corporation duly organized under and pursuant to the laws of England & Wales, and having a principal place of business at 6 Carlton Gardens, London, SW1Y 5AD, United Kingdom (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and sald applications, including

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Application No. <u>13/980,321</u> Attorney Docket No. <u>1033963–000286</u>

provisional applications, above-mentioned, and that the same are unencumbered, and that the Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns;

AND the Assignors hereby authorize and request the attorneys of Buchanan Ingersoll & Rooney PC to insert in the spaces provided above the title of the invention, filing date, application number, and attorney's docket number of said application when known.

AND the Assignors hereby request the Commissioner of Patents to issue any and all said Letters Patent of the United States to the Assignee as the Assignee of said inventions, the Letters Patent to be issued for the sole use and behoof of the Assignee, its successors, legal representatives, and assigns.

DATE	
	George Morgan MATHEWS
DATE_ <u>76/02/2013</u>	Markus DEITTERT
DATE	
	Arthur George RICHARDS

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ASSIGNIMENT

(JOINT)

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			ssignors have invented certain new and useful improvements in NNINGset forth in an application for Letters Patent of the United
States, which	is a		
(1)		provis	sional application
	(a)		bearing Application No and filed on
	(b)		to be filed herewith; or
(2,)	\boxtimes	non-p	provisional application
	(a)	\boxtimes	bearing Application No. PCT/GB2012/050038, and filed on 10 January 2012;
	(b)		having an oath or declaration executed on even date herewith prior to filing of application;
	(c)		having an oath or declaration executed on a different date than this Assignment; and

WHEREAS, BAE SYSTEMS plc, a corporation duly organized under and pursuant to the laws of England & Wales, and having a principal place of business at 6 Carlton Gardens, London, SW1Y 5AD, United Kingdom (hereinafter referred to as "the Assignee"), is desirous of acquiring the entire right, title, and interest in and to said inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications, including provisional applications for Letters Patent of the United States or other countries claiming priority to said application, and in and to any Letters Patent or Patents, United States or foreign, to be obtained therefor and thereon.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Assignors have sold, assigned, transferred, and set over, and by these presents do sell, assign, transfer, and set over, unto the Assignee, its successors, legal representatives, and assigns the entire right, title, and interest in and to the above-mentioned inventions, the right to file applications on said inventions and the entire right, title and interest in and to any applications for Letters Patent of the United States or other countries claiming priority to said applications, and any and all Letters Patent or Patents of the United States of America and all foreign countries that may be granted therefor and thereon, and in and to any and all applications claiming priority to said applications, divisions, continuations, and continuations-in-part of said applications, and reissues and extensions of said Letters Patent or Patents, and all rights under the International Convention for the Protection of Industrial Properly, the same to be held and enjoyed by the Assignee, for its own use and behoof and the use and behoof of its successors, legal representatives, and assigns, to the full end of the term or terms for which Letters Patent or Patents may be granted as fully and entirely as the same would have been held and enjoyed by the Assignors had this sale and assignment not been made;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns, that, at the time of execution and delivery of these presents, the Assignors are the sole and lawful owners of the entire right, title, and interest in and to the inventions set forth in said applications and said applications, including provisional applications, above-mentioned, and that the same are unencumbered, and that the

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Buchanan Ingersoll & Rooney PC

(7/06) Page 1 of 2

Application No. <u>13/980,321</u> Attorney Docket No. <u>1033963–000286</u>

Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth;

AND for the same consideration, the Assignors hereby covenant and agree to and with the Assignee, its successors, legal representatives, and assigns that the Assignors will, whenever counsel of the Assignee, or the counsel of its successors, legal representatives, and assigns, shall advise that any proceeding in connection with said inventions or said applications for Letters Patent or Patents, or any proceeding in connection with Letters Patent or Patents for said inventions in any country, including interference proceedings, is lawful and desirable, or that any application claiming priority to said application, division, continuation, or continuation-in-part of any applications for Letters Patent or Patents, or any reissue or extension of any Letters Patent or Patents to be obtained thereon, is lawful and desirable, sign all papers and documents, take all lawful oaths, and do all acts necessary or required to be done for the procurement, maintenance, enforcement, and defense of Letters Patent or Patents for said inventions, without charge to the Assignee, its successors, legal representatives, and assigns, but at the cost and expense of the Assignee, its successors, legal representatives, and assigns;

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DATE		
,	George Morgan MATHEWS	***************************************
DATE		1000
	Markus DEITTERT	
201	A.G. Richard	
DATE 20 Aug 2013		100 Mars of the Association of the State of
	Arthur George RICHARDS	

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Buchanan Ingersoll & Rooney PC

RECORDED: 07/30/2013

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PATENT REEL: 030905 FRAME: 0508