PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT2869106

THE I	ctive Assignment to correct the THE SPELLING OF THE NAME OF FIRST INVENTOR previously recorded on Reel 028029 Frame 0740. nor(s) hereby confirms the CORRECT NAME OF THE FIRST NTOR SHOULD BE AMBAI, MITSURU.

CONVEYING PARTY DATA

Name	Execution Date
MITSURU AMBAI	04/23/2014
YUICHI YOSHIDA	03/28/2012

RECEIVING PARTY DATA

Name: DENSO IT LABORATORY, INC.	
Street Address: SHIBUYA CROSS TOWER 28TH FLOOR	
Internal Address: 2-15-1, SHIBUYA, SHIBUYA-KU	
City: TOKYO	
State/Country: JAPAN	
Postal Code:	150-0002

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	13405723

CORRESPONDENCE DATA

Fax Number: (703)205-8050

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.

Phone: 703-205-8000

Email: david.o.amanfo@bskb.com, mailroom@bskb.com **Correspondent Name:** BIRCH, STEWART, KOLASCH & BIRCH, LLP

Address Line 1: P.O. BOX 747

Address Line 4: FALLS CHURCH, VIRGINIA 22040-0747

ATTORNEY DOCKET NUMBER:	3691-0149PUS1
NAME OF SUBMITTER:	DAVID OFORI-AMANFO
SIGNATURE:	/David Ofori-Amanfo/
DATE SIGNED:	05/22/2014

Total Attachments: 6

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> PATENT REEL: 033007 FRAME: 0516

OP \$40.00 134057

PATENT ASSIGNMENT

Electronic Version v1.1 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Mitsuru ANBAI	03/28/2012
Yuichi YOSHIDA	03/28/2012

RECEIVING PARTY DATA

Name:	DENSO IT LABORATORY, INC.
Street Address:	Shibuya Cross Tower 28th Floor, 2-15-1, Shibuya, Shibuya-ku
City:	Tokyo
State/Country:	JAPAN
Postal Code:	150-0002

PROPERTY NUMBERS Total: 1

Property Type	Number	
Application Number:	13405723	

CORRESPONDENCE DATA

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Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent

via US Mail.

Correspondent Name:

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Falls Church, VIRGINIA 22040-0747

ATTORNEY DOCKET NUMBER:	3691-0149PUS1	
NAME OF SUBMITTER:	Michael R. Cammarata	

Total Attachments: 2

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PATENT REEL: 033007 FRAME: 0517

BIRCH, STEWART, KOLASCH & BIRCH, LLP

UNITED STATES PATENT RIGHTS, OR UNITED STATES PLUS ALL FOREIGN PATENT RIGHTS

ASSIGNMENT

Application No	o. <u>13/405,723</u> Filed <u>Fe</u>	ebruary 27, 2012
Insert Name(s) of Inventor(s)	***(Given Name FAMILY NAME (ALL CAPS)))***
	WHEREAS, Mitsuru ANBAI, Yuichi YOSHIDA (her invented certain new and useful improvements in:	einafter designated as the undersigned) has (have)
Insert Title of Invention	LOCAL FEATURE AMOUNT CALCULATING DIFEATURE AMOUNT, CORRESPONDING POINT SEARCHING CORRESPONDING POINT	•
	for which an application for Letters Patent of the Unundersigned (except in the case of a provisional applic	
Insert Date of Signing of	On March 28, 2012	; and
Application Insert Name of Assignee	WHEREAS, DENSO IT LABORATORY, INC.	
Insert Address of Assignee	of Shibuya Cross Tower 28th Floor, 2-15-1, Shibuya, S	Shibuya-ku Tokyo 150-0002, Japan
CHECK BOX	its heirs, successors, legal representatives and assigns of acquiring the entire right, title and interest in and to that may be granted therefor in the United States of Ar in any foreign countries.	o said invention and in and to any Letters Patent(s)
IF APPROPRIATE		otion the receipt of rubish is breaker relevanted as I
	NOW, THEREFORE, for good and valuable considers the undersigned has (have) sold, assigned and transfer transfer unto said Assignee the full and exclusive reference, its territories, dependencies and possessions and all Letters Patent(s) which may be granted there dependencies and possessions, and if the box above is any and all divisions, reissues, continuations, conve	terred, and by these presents does sell, assign and ight to the said invention in the United States of and the entire right, title and interest in and to any for in the United States of America, its territories, designated, in any and all foreign countries; and to

terms for which the same may be granted.

The undersigned agree(s) to execute all papers necessary in connection with this application and any continuing, divisional, conversion or reissue applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation, division, conversion or reissue thereof or Letter Patent(s) or reissue patent issued thereon and to cooperate with the Assignee in every way possible in obtaining and producing evidence and proceeding with such interference.

The undersigned agree(s) to execute all papers and documents and to perform any act which may be necessary in connection with claims or provisions of the International Convention for the Protection of Industrial Property or similar agreements.

The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States of America and any foreign patent(s) to the Assignee and to vest all rights therein hereby conveyed to said Assignee as fully and entirely as the same would have been held by the undersigned if this Assignment and sale had not been made.

The undersigned hereby authorize(s) and request(s) the Patent and Trademark Office Officials in the United States of America and in any foreign countries to issue any and all Letters Patents resulting from said application or any continuing, divisional conversion or reissue applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has (they have) the full right to convey the entire interest herein assigned, and that he has (they have) not executed, and will not execute, any agreement in conflict herewith.

The undersigned hereby grant(s) the law firm of Birch, Stewart, Kolasch & Birch, LLP the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

The undersigned hereby covenant(s) that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this assignment.

In witness whereof, executed by the undersigned on the date(s) opposite the undersigned name(s).

Date _	March 28, 2012	Name of Inventor	
Date	March 28, 2012		(signature) Mitsuru ANBAI Yuichi YoShida. (signature) Yuichi YOSHIDA
Date _		Name of Inventor	(signature)
Date _	<u> </u>	Name of Inventor	(signature)
Date _		Name of Inventor	(signature)
Date		Name of Inventor	(signature)

Page 2 of 2

MRC/MRC/smt

BIRCH, STEWART, KOLASCH & BIRCH, LLP

UNITED STATES PATENT RIGHTS, OR UNITED STATES PLUS ALL FOREIGN PATENT RIGHTS

ASSIGNMENT

Application	13/405,723 Filed: February 27, 2012				
Insert Name(s of Inventor(s)	***(Given Name FAMILY NAME (ALL CAPS))*** WHEREAS, Mitsuru ANBAI, Yuichi YOSHIDA (hereinafter designated as the undersigned) has (have) invented certain new and useful improvements in:				
Insert Title of Invention	LOCAL FEATURE AMOUNT CALCULATING DEVICE, METHOD OF CALCULATING LOCAL FEATURE AMOUNT, CORRESPONDING POINT SEARCHING APPARATUS, AND METHOD OF SEARCHING CORRESPONDING POINT				
	for which an application for Letters Patent of the United States of America has been executed by the undersigned (except in the case of a provisional application)				
Insert Date of Signing of Appln.	on; and				
Insert Name of Assignee	WHEREAS, DENSO IT LABORATORY, INC.				
Insert Address of Assignee	of Shibuya Cross Tower 28th Floor, 2-15-1, Shibuya, Shibuya-ku Tokyo 150-0002, Japan,				
	its heirs, successors, legal representatives and assigns (hereinafter designated as the Assignee) is desirous acquiring the entire right, title and interest in and to said invention and in and to any Letters Patent(s) that no be granted therefor in the United States of America and				
Check Box if Appropriate	in any foreign countries.				
	NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the undersigned has (have) sold, assigned and transferred, and by these presents does (do) sell, assign and transfer unto said Assignee the full and exclusive right to the said invention in the United States of America, its territories, dependencies and possessions and the entire right, title and interest in and to any and all Letters Patent(s) which may be granted therefor in the United States of America, its territories, dependencies and possessions, and if the box above is designated, in any and all foreign countries; and to any and all divisions, reissues, continuations, conversions and extensions thereof for the full term or terms for which the same may be granted.				

Attorney Docket No.: 3691-0149PUS1

The undersigned agree(s) to execute all papers necessary in connection with this application and any continuing, divisional, conversion or reissue applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation, division, conversion or reissue thereof or Letters Patent(s) or reissue patent issued thereon and to cooperate with the Assignee in every way possible in obtaining and producing evidence and proceeding with such interference.

The undersigned agree(s) to execute all papers and documents and to perform any act which may be necessary in connection with claims or provisions of the International Convention for the Protection of Industrial Property or similar agreements.

The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of (a) valid United States of America patent(s) or a grant of (a) valid United States of America and any foreign patent(s) to the Assignee and to vest all rights therein hereby conveyed to said Assignee as fully and entirely as the same would have been held by the undersigned if this Assignment and sale had not been made.

The undersigned hereby authorize(s) and request(s) the Patent and Trademark Office Officials in the United States of America and in any foreign countries to issue any and all Letters Patent(s) resulting from said application or any continuing, divisional conversion or reissue applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has (they have) the full right to convey the entire interest herein assigned, and that he has (they have) not executed, and will not execute, any agreement in conflict herewith.

The undersigned hereby grant(s) the law firm of Birch, Stewart, Kolasch & Birch, LLP the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

The undersigned hereby covenant(s) that no assignment, sale, agreement or encumbrance has been or will be made or entered into which would conflict with this Assignment.

In witness whereof, executed by the undersigned on the date(s) opposite the undersigned name(s).

Date April 23, 2018	Name of Inventor	(Signature) Mitsuru AMBAI	Ambai	
Date	Name of Inventor	(Signature) Yuichi YOSHIDA		· · · · · · · · · · · · · · · · · · ·
Date	Name of Inventor	(Signature)		
Date	Name of Inventor	(Signature)		
Date	Name of Inventor	(Signature)		
BIRCH, STEWART, KOLASCH	& BIRCH, LLP	Page 2	·	BSKB-ASSIGN-SINGLE (09-12) MRC/MRC/doa

PATENT REEL: 033007 FRAME: 0521