Form PTO-1595 (Rev. 03-11) DMB No. 0651-0027 (exp. 03/31/2015)			U.S. DEPARTMENT OF COMMER United States Patent and Trademark Of
RECORI	ATION FOR	M CO	/ER SHEET
	ATENTS		
To the Director of the U.S. Patent and Trademai	(Office: Please)		ne attached documents or the new address(es) below.
1. Name of conveying party(les):		2. Na	ne and address of receiving party(les)
Nathaniel Fairfield (06/15/2010), Christ Urmson (06/15/2010), and Sebastian T (06/16/2010)			: Google Inc
•	Yes X No		Address:
3. Nature of conveyance/Execution Date(s):			
Execution Date(s): in parentheses after inventy	r na <u>me</u>	160) Amphitheatre Parkway
X Assignment Merger Change	of Name		
Security Agreement Joint Research A	preement	City:	Mountain View
Government Interest Assignment		State	California
Executive Order 9424, Confirmatory License		1	ry: United States of America Zlp: 94043
Other	A	1	onal name(s) & address(es) Yes X No
Additional nu	mbers attached?		Yes X No
5. Name and address to whom correspondence concerning document should be mailed:			il number of applications and 1 note involved:
Name: Noelle L. Cacclabev LERNER, DAVID, LITTEN KRUMHOLZ & MENTLII	BERG,	7. Tol	al fee (37 CFR 1.21(h) & 3.41) \$ 40.00
Internal Address: Atty. Dkt.: GOOGLE 3.0-151 C Street Address: 600 South Avenue West	ON .		Authorized to be charged to deposit account Enclosed None required (government interest not affecting lit
City: Westfield		8. Pa	ment information
State: NJ Zlp:	07090		
Phone Number: 908-654-5000			40 4005
Fax Number: 908-654-7866	 	,	psit Account Number 12-1095 uthorized User Name Noelle L. Cacciabeve
Email Address: mcormier@ldlkm	com	<u></u>	HUGHEL. Cacciabeve
9. Signature:	grieel	pew	2 September 20, 2013 Date
Noelle L. Cacciabeve	Marie Control of the		Total number of pages including cover sheet, attachments, and documents:
Name of Person Sign	uğ		extended meaning thank dift man proceedings and

PATENT REEL: 031335 FRAME: 0829

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ASSIGNMENT OF PATENT APPLICATION GOOGLE 3.0-151 WHEREAS, I, Nathanlel Fairfield of 1, 58 Burgoyne Street Mountain View, California, 94043, have invented or discovered inventions or discoveries, the subject matter of which is described in the patent application entitled "TRAFFIC SIGNAL MAPPING AND DI TECTION" (hereafte "Patent Application"), WHEREAS (If the left box is checked, the Patent Application was filed with the U.S. Patent and Trademark Office on ______, Appli ation Number _____, and WHEREAS (if the left box is checked, the Patent Application names the following Inventors: Nathaniel Fairfield, Christopher Urmson, and St bastlan Thrun (and v hereas I hereby authorize Lerner, David, Littenberg, Knimholz & Mentlik, LLP, to insert in here in brackets [Application No. 12/819,575 , filed on June 21, 2010 I the application number and filing date of the application when known), and WHEREAS, <u>Google Inc.,</u> incorporate, or otherwise formed in <u>Delaware</u> and having a place of business at 1600 Amphittieatre Parkway, Mountain View, California 94043 (her lafter, the "assignee") is desirous of acquiring. or has acquired and is desirous of memorializing its acquisition further herein, the entire right, title and interest in NOW, THEREFORE, for good and valuable consideration, he receipt of which is hereby acknowledged, I agree as follows. I agree to assign, and hereb / do assign, to the as signee my entire right, title and interest in and to the Assigned Applications in the United States of America and all other countries, where "Assigned Applications" means the Patent Application, including any aird all Inventions, disc iveries and other subject matter described therein, any divisional, continuation, continuation-in-part, substitute, reissue, re-examination or other application claiming priority or benefit to the Patent Applic tilon pursuant to any aw or treaty, and any patent issuing from the foregoing. I agree to assign, and hereby do as sign, to assignee the right to claim such priority or benefit. I have not previously conveyed, nor am I aware of an obligation to convey, my rights in the Assigned Applications to a third party. I hereby authorize the U.S. Patent and `rademark Office, an I any other governmental agency in the world, to issue to assignee all patents resulting from the Assigned Applications and to record assignee's ownership thereof. At assignee streasonable request I agree, with out further remuneral on, to execute and deliver documents prepared at assignee's expense and to provide other conperation, such as tertimony, as may be reasonably required to evidence or protect assignee's rights in the Assigned Applications. Assignee may assign or transfer all or part of its rights set forth herein in its sole discretion. I acree that the assignee may affix its signature to this document as well as any other indicia of its acceptance of the privisions hereof. If any provision herein is unenforceable, the requirements of the provision shall remain to the full extent permissible by law and the offending portions thereof shall be deemed replaced, to the extent possil le, with a provision in ost closely reflecting the purpose of the offending provision.

Signature of Witness

rajun

Printed Name of Witness

ASSIGNMENT	OF PATENT	APPLICATION
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Docket Number (Optional)

Additional Or PATERIAL AL		GOOGLE 3.0-151
WHEREAS, I, Christopher Urmson of invented or discovered inventions or discovering entitled "TRAFFIC SIGNAL MAPPING AND DISCOVERED INVENTION OF TRAFFIC SIGNAL MAPPING SIGN	s, the subject matter o	Mountain View, California 94043, have of which is described in the patent application "Patent Application"),
WHEREAS (If the left box is checked Trademark Office on, Appli:	, the Patent Applicated at a cation Number	n was filed with the U.S. Patent and, and
X WHEREAS (if the left box is checked Nathaniel Fairlield, Christopher Umpson, and Statittenberg, Krumholz & Mentlik, LLP, to insert in June 21, 2010 if the application number a	<u>bastlan Thrun</u> (and v t here in brackets [Ap)!	nereas I hereby authorize Leiner, David, lication No. <u>12/819,575</u> , filed on
WHEREAS, <u>Google Inc.</u> , incorporate Inc. 1600 Amphitheatre Parkway; Mountain View. (1900 has acquired and is desirous of memorializations).	alifornia, 94043 (her a	n <u>Delaware</u> and having a place of business at after, the "assignee") is desirous of acquiring, or herein, the entire right, title and interest in
agree as follows. I agree to assign, and hereby the Assigned Applications in the United States of means the Patent Application, including any au- therein, any divisional, continuation, continuation claiming priority or benefit to the Patent Applic of foregoing. I agree to assign, and hereby do as previously conveyed, nor am I aware of an objective.	of do assign, to the assign of America and all of a did all inventions, disc ward-n-part, substitute, notion pursuant to any a sign, to assignee the rigation to convey, my rigademark Office, and Assigned Applications of the full extent peration, such as testing and Applications. A signed Applications. A signed Applications of the full extent permissions of the full extent permissions of the full extent permissions.	veries and other subject matter described elssue, re-examination or other application aw or treaty, and any patent Issuing from the light to claim such priority or benefit. I have not lights in the Assigned Applications to a third any other governmental agency in the world, to and to record assignee's ownership thereof, on, to execute and deliver documents prepared imony, as may be reasonably required to assignee may assign or transfer all or part of its may affix its signature to this document as well provision herein is unenforceable, the
T 15 2010	,	
June 15, 2010		(Signature)
Signature of Witness		. 4
Printed Name of Witness	A-1	· ·
	•	

Docket Number (Optional) ASSIGNMENT OF PATENT APPLICATION GOOGLE 3.0-151 WHEREAS, I, Sebastian Thrun of 84 3 Pine Hill Rd.: Palo / lito, California 94305, have invented or discovered inventions or discoveries, the subject matter of which is described in the patent application entitled "TRAFFIC SIGNAL MAPPING AND DETECTION" (hereafter "Pater & Application"), WHEREAS (if the left box is checket), the Patent Application was filed with the U.S. Patent and Trademark Office on _____, Appl cation Number _____ Х WHEREAS (if the left box is checket), the Patent Application names the following inventors: Nathaniel Falffield, Christopher Urmson, and Sabastian Thrun (and whereas I hereby authorize Lerner, David, Littenberg, Krumholz & Mentlik, LLP, to insert in here in brackets [Ar plication No. 12/819, 575 June 21, 2010 the application number and filing date of the application when known), and WHEREAS, Google Inc., incorporate tor otherwise former in Delaware and having a place of business at 1600 Amphitheatre Parkway: Mountain View. California 94043 (he eafter, the "assignee") is desirous of acquiring, or has acquired and is desirous of memorializing its acquisition further herein, the entire right, title and interest in NOW, THEREFORE, for good and vuluable consideration the receipt of which is hereby acknowledged, i agree as follows. I agree to assign, and herely do assign, to the a signee my entire right, title and interest in and to the Assigned Applications in the United States of America and all other countries, where "Assigned Applications" means the Patent Application, Including any and all inventions, discoveries and other subject matter described therein, any divisional, continuation, continuation-in-part, substitute reissue, re-examination or other application claiming priority or benefit to the Patent Application pursuant to any law or treaty, and any patent issuing from the foregoing. I agree to assign, and hereby do a sign, to assignee the right to claim such priority or benefit. I have not previously edniveyed, nor am I aware of an obligation to convey, my rights in the Assigned Applications to a third party. Thereby authorize the U.S. Patent and Trademark Office, at 1 any other governmental agency in the world, to issue to assignee all patents resulting from the Assigned Applicatio is and to record assignee's ownership thereof. At assignee's reasonable request I agree, with out further remuneration, to execute and deliver documents prepared at assignee's expense and to provide other oc operation, such as testimony, as may be reasonably required to evidence or protect assignee's rights in the Assigned Applications. Assignee may assign or transfer all or part of its rights set forth herein in its sole discretion. I agree that the assigner may affix its signature to this document as well as any other lindicia of its acceptance of the provisions hereof. If an / provision herein is unenforceable, the requirements of the provision shall remain to the full extent permissible by law and the offending portions thereof shall be deemed replaced. Lo the extent possible, with a provision roost closely reflecting the purpose of the offending provision. (Signature)

PATENT REEL: 031335 FRAME: 0832