## 504019760 09/23/2016

# PATENT ASSIGNMENT COVER SHEET

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 SUBMISSION TYPE:
 NEW ASSIGNMENT

 NATURE OF CONVEYANCE:
 ASSIGNMENT

#### **CONVEYING PARTY DATA**

Name	Execution Date
SHAMSUDDIN NASIRUDDIN LADHA	09/14/2016
PIYUSH YADAV	09/16/2016
SHAILESH SHANKAR DESHPANDE	09/14/2016

## **RECEIVING PARTY DATA**

Name:	TATA CONSULTANCY SERVICES LIMITED	
Street Address:	reet Address: NIRMAL BUILDING, 9TH FLOOR	
Internal Address:	nternal Address: NARIMAN POINT	
City:	MUMBAI	
State/Country:	INDIA	
Postal Code:	400021	

#### **PROPERTY NUMBERS Total: 1**

Property Type	Number
Application Number:	15271913

## **CORRESPONDENCE DATA**

**Fax Number:** (202)408-4400

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:** 202.408-4000

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Correspondent Name: TATA CONSULTANCY SERVICES/FINNEGAN

Address Line 1: 901 NEW YORK AVE., NW Address Line 4: WASHINGTON, D.C. 20001

<b>ATTORNEY DOCKET NUMBER:</b> 13178.0142-00000	
NAME OF SUBMITTER:	SHAUNETTE MCCOY
SIGNATURE:	/Shaunette McCoy/
DATE SIGNED:	09/23/2016
	This document serves as an Oath/Declaration (37 CFR 1.63).

**Total Attachments: 4** 

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PATENT REEL: 039845 FRAME: 0379



PATENT REEL: 039845 FRAME: 0380

#### ASSIGNMENT AND DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION

#### ASSIGNMENT:

WHEREAS I/We, the below named inventor(s), (hereinafter referred to as Assignor(s)), have made an invention entitled:

METHODS AND SYSTEMS FOR OPTIMIZING HIDDEN MARKOV MODEL BASED LAND CHANGE PREDICTION
for which I/WE executed an application for United States Letters Patent concurrently herewith; and

WHEREAS, \_\_Tata Consultancy Services Limited
a corporation of \_\_India
whose post office address is \_\_Nirmal Building, 9th Floor, Nariman Point, Mumbai 400021, Maharashtra, India

(hereinafter referred to as Assignee), is desirous of securing the entire right, title, and interest in and to this invention in all countries throughout the world, and in and to the application for United States Letters Patent on this invention and the Letters Patent to be issued upon this application;

NOW THEREFORE, be it known that, for good and valuable consideration the receipt of which from Assignee is hereby acknowledged, I/We, as Assignor(s), have sold, assigned, transferred, and set over, and do hereby sell, assign, transfer, and set over unto the Assignee, its lawful successors and assigns, my/our entire right, title, and interest in and to this invention and this application, and all divisions, and continuations thereof, and all Letters Patent of the United States which may be granted thereon, and all reissues thereof, as well as all rights to claim priority on the basis of this application in any foreign country, and all applications for Letters Patent which may hereafter be filed for this invention in any foreign country and all Letters Patent which may be granted on this invention in any foreign country, and all extensions, renewals, and reissues thereof; and I/We hereby authorize and request the Director of the United States Patent and Trademark Office and any official of any foreign country whose duty it is to issue patents on applications as described above, to issue all Letters Patent for this invention to Assignee, its successors and assigns, in accordance with the terms of this Assignment;

AND, I/WE HEREBY covenant that I/We have the full right to convey the interest assigned by this Assignment, and I/We have not executed and will not execute any agreement in conflict with this Assignment;

AND, I/WE HEREBY further covenant and agree that I/We will, without further consideration, communicate with Assignee, its successors and assigns, any facts known to me/us respecting this invention, and testify in any legal proceeding, sign all lawful papers when called upon to do so, execute and deliver any and all papers that may be necessary or desirable to perfect the title to this invention in said Assignee, its successors or assigns, execute all divisional, continuation, and reissue applications, make all rightful oaths and generally do everything possible to aid Assignee, its successors and assigns, to obtain and enforce proper patent protection for this invention in the United States and any foreign country, it being understood that any expense incident to the execution of such papers shall be borne by the Assignee, its successors and assigns.

AND, I/WE HEREBY authorize and request that the	attorneys having Power	r of Attorney in this application, insert
here in parentheses (Application No.	, filed	the filing date and
application number of said application when known.		

#### DECLARATION:

As a named inventor below, I hereby declare that: (1) This declaration is directed to the above-identified application; (2) the above-identified application was made or authorized to be made by me; (3) my residence and mailing address are as stated below next to my name; and (4) I believe I am an original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statements made in this declaration are punishable by fine or imprisonment of not more than five (5) years, or both, under section 1001 of Title 18 of the United States Code.

As a below named inventor, I have reviewed and understand the contents of the application, including the claims, and am aware of the duty to disclose to the US PTO all information known to me to be material to patentability as defined in 37C.F.R. § 1.56.

[IDF-1014959-002 - C]

## Authorization To Permit Access To Application by Participeting Offices:

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This hox should not be checked if the Applicant does not wish the EPO, JPO, KIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application; and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

IN TESTIMONY WHEREOF, I/We have hereunto set our hands.

1. FULL NAME OF SOLE OR FIRST ASSIGNOR LADHA, Shamauddin Naeinuddin	ASSIGNOR'S SIGNATURE	0116 14 - Sep - 2016
MAILINO ADDRESS Tata Consultancy Services Limited Tata Research Development & Design Centre, 54-B, Hadapsar Industrial Estate, Hadapsar, Pune - 411 013 Maharashtra, India		RESIDENCE India
2. FULL NAME OF SECOND ASSIGNOR, IF ANY YADAV, Piyush	ASSIGNOP'S SIGNATURE	DATE
MAILING ADDRESS Tata Consultancy Services Limited Tata Research Development & Dosign Centre, 54-B, Hadapsar Industrial Estate, Hadapsar, Pune - 411 013 Manarashtra, India		RESIDENCE India
3. FÜLL NAME OF THIRD ASSIGNOR, IF ANY DESHPANDE, Shallesh Shankar	ASSIGNOR'S SIGNATURE	DATE
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[H)AC 4014-9859-4903 - C]

## Authorization To Permit Access To Application by Participating Offices:

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JIPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified patent application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the Applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the above-identified patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the above-identified patent application with respect to: 1) the above-identified patent application-as-filed; 2) any foreign application to which the above-identified patent application claims priority under 35 U.S.C. 119(a)-id if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified patent application, and 3) any U.S. application-as-filed from which benefit is sought in the above-identified patent application.

in accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

IN TESTIMONY WHEREOF, I/We have hereunto set our hands,

	F. FULL NAME OF SOLE OR FIRST ASSIGNOR LADHA, Shamsuddin Nasiruddin	ASSIGNOR'S SIGNATURE	DATE
***************************************	MAILING ADDRESS Tats Consultancy Services Limited Tats Research Development & Design Centre, 54-8. Hadagsar Industrial Estate, Hadagsar, Pune - 411 013 Matharachtra, India		RESIDENCE India
	2. FULL NAME OF SECOND ASSIGNOR, IF ANY YADAV, Piyush	ASSIGNORS BIGNATURE	54/16/2016
***************************************	MAILING ADDRESS Tata Consultancy Services Limited Tata Research Development & Design Centre, 54-B, Hadapsar Industrial Estate, Hadapsar, Pune - 411 013 Maharashtra, India		RESIDENCE India
8	3. FULL NAME OF THIRD ASSIGNOR, IF ANY DESHFANDE, Shallesh Shankar	ASSIGNOR'S SIGNATURE	DATE
*********	MAILING ADDRESS Tata Consultancy Services Limited Tata Research Development & Design Centre, 54-B, Hadapsar Industrial Estate, Hadapsar, Pune - 411 013 Maharashtra, India		RESIDENCE Indis

[JDF-1014959-092 - C]

Authorization To Permit Access To Application by Participating Offices:

E3 If checked, the indensigned hereby grants the USPTO authority to precide the European Placed Office (EPO), the Good Placed Office (UPO), the Konten Intellectual Property Office (PO), the World Intellectual Property (Effect (POP)), and any other intellectual property office in which a foreign application cleaning priority to the above-lateralistic patient application is filled accessed to the above-lateralistic posterior (EFC 1.14(q) and (h). This how should not be checked if the Applicate clean posterior in EFO, UPO, UPO, UPO, UPO, other contents of property (Effect in which is foreign application cleaning priority to the above-lateralistic operation is first the lateral property in the phone industrial potential application.

In accordance with 37 CTR 1,14(4)(3), access will be provided to a cropy of the absolute/likelit potent application with paged by 1) the above-shortised potent application co-short, 2) any foreign application to which the above-blordised paged application storing provide under 35 U.S.C. 1114(a)-45) if a copy of the foreign application that satisfies the carbited copy requirement of 37 CFR 1.55 has been short in the above-blordised potent application; and 3) any U.S. septimion as ideal from which benefit is social to the above-blordised potent application.

In securdance with 57 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

IN TESTIMONY WHEREOF, I'We have hereunte set our hands.

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PATENT REEL: 039845 FRAME: 0384

RECORDED: 09/23/2016