505385218 03/20/2019

PATENT ASSIGNMENT COVER SHEET

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-------------------|----------------|
| TIAN-JY CHAO | 11/19/2013 |
| YOUNGHUN KIM | 12/02/2013 |
| STEPHEN E. LEVY | 11/19/2013 |
| MING LI | 12/04/2013 |
| MILIND R. NAPHADE | 01/25/2014 |
| SAMBIT SAHU | 01/25/2014 |

RECEIVING PARTY DATA

| Name: | INTERNATIONAL BUSINESS MACHINES CORPORATION |
|-----------------|---|
| Street Address: | NEW ORCHARD ROAD |
| City: | ARMONK |
| State/Country: | NEW YORK |
| Postal Code: | 10504 |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 16359587 |

CORRESPONDENCE DATA

Fax Number: (516)742-4366

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: 516-742-4343 mgroth@ssmp.com Email:

SCULLY, SCOTT, MURPHY & PRESSER, P.C. **Correspondent Name:**

400 GARDEN CITY PLAZA Address Line 1:

Address Line 2: SUITE 300

Address Line 4: GARDEN CITY, NEW YORK 11530

| ATTORNEY DOCKET NUMBER: | YOR920130283US04(30250AZ) |
|--|---------------------------|
| NAME OF SUBMITTER: | EUNHEE PARK |
| SIGNATURE: | /Eunhee Park/ |
| DATE SIGNED: | 03/20/2019 |
| This document serves as an Oath/Declaration (37 CFR 1.63). | |

PATENT

REEL: 048652 FRAME: 0145

Total Attachments: 10 source=YOR920130283US04_Assign-Dec#page1.tif source=YOR920130283US04_Assign-Dec#page2.tif source=YOR920130283US04_Assign-Dec#page3.tif source=YOR920130283US04_Assign-Dec#page4.tif source=YOR920130283US04_Assign-Dec#page5.tif source=YOR920130283US04_Assign-Dec#page6.tif source=YOR920130283US04_Assign-Dec#page7.tif source=YOR920130283US04_Assign-Dec#page8.tif source=YOR920130283US04_Assign-Dec#page9.tif source=YOR920130283US04_Assign-Dec#page9.tif

PATENT REEL: 048652 FRAME: 0146

Title of Invention:

END-TO-END EFFECTIVE CITIZEN ENGAGEMENT VIA ADVANCED ANALYTICS AND SENSOR-BASED PERSONAL ASSISTANT CAPABILITY (EECEASPA)

| As a below named inventor, I hereby declare that: | |
|---|--|
| This declaration is directed to the attached application, or (if following box is checked): | |
| [] United States application or PCT international application number | |

The above-identified application was made or authorized to be made by me.

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Page 1 of 2

Each undersigned inventor acknowledges their prior and ongoing obligations to sell, assign, and transfer the rights under this Assignment to IBM and is unaware of any reason why they may not have the full and unencumbered right to sell, assign, and transfer the rights hereby sold, assigned, and transferred, and has not executed, and will not execute, any document or instrument in conflict herewith. Each undersigned inventor also hereby grants IBM, its successors, legal representatives, and assigns, the right to insert in this Assignment any further identification (including, but not limited to, patent Application Number) which may be necessary or desirable for recordation of this Assignment. This Assignment is governed by the substantive laws of the State of New York, and any disputes will be resolved in a New York state court or federal court sited in New York.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

| (1) Legal Name of Inventor: Tran-Jy Chao | |
|---|---------------------|
| Signature: Tian-jn Chao | Date: Nov. 19, 2013 |
| (2) Legal Name of Inventor: Younghun Kim | |
| Signature: | Date: |
| (3) Legal Name of Inventor: Stephen E. Levy | |
| Signature: | Date: |
| (4) Legal Name of Inventor: Ming Li | |
| Signature: | Date: |
| (5) Legal Name of Inventor: Milind R. Naphade | |
| Signature: | Date: |
| (6) Legal Name of Inventor: Sambit Sahu | |
| Signature: | Date: |

Title of Invention:

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Page 1 of 2

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| (1) Legal Name of Inventor: Tian-Jy Chao | |
|---|------------------|
| Signature: | Date: |
| (2) Legal Name of Inventor: Younghun Kim | |
| Signature: 72 57 | Date: Dec-02-201 |
| (3) Legal Name of Inventor: Stephen E. Levy | |
| Signature: | Date: |
| (4) Legal Name of Inventor: Ming Li | |
| Signature: | Date: |
| (5) Legal Name of Inventor: Milind R. Naphade | |
| Signature: | Date: |
| (6) Legal Name of Inventor: Sambit Sahu | |
| Signature: | Date: |

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3

Title of Invention:

PERSONAL

END-TO-END EFFECTIVE CITIZEN ENGAGEMENT VIA ADVANCED ANALYTICS AND SENSOR-BASED ASSISTANT CAPABILITY (EECEASPA)

As a below named inventor, I hereby declare that:

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|--|
| [] United States application or PCT international application number |
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| (1) Legal Name of Inventor: Tian-Jy Chao | |
|---|------------------------|
| Signature: | Date: |
| (2) Legal Name of Inventor: Younghun Kim | |
| Signature: | Date: |
| (3) Legal Name of Inventor: Stephen E. Levy | |
| Signature: | Date: November 19,2013 |
| (4) Legal Name of Inventor: Ming Li | |
| Signature: | Date: |
| (5) Legal Name of Inventor: Milind R. Naphade | |
| Signature: | Date: |
| (6) Legal Name of Inventor: Sambit Sahu | |
| Signature: | Date |

Title of Invention:

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Page 1 of 2

IBM DOCKET NUMBER: YOR920130283US2

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| Signature: | Date: |
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| Signature: | Date: |
| (4) Legal Name of Inventor: Ming Li | |
| Signature: Mal 3 | Date: 12/04/2013 |
| (5) Legal Name of Inventor: Milind R. Naphad | l e |
| Signature: | Date: |
| (6) Legal Name of Inventor: Sambit Sahu | |
| Signature: | Date: |

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| Signature: | Date: 1/25/14 |
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PATENT REEL: 048652 FRAME: 0156