505342284 02/22/2019

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5389066

| SUBMISSION TYPE:      | NEW ASSIGNMENT                             |
|-----------------------|--------------------------------------------|
| NATURE OF CONVEYANCE: | EXECUTIVE ORDER 9424, CONFIRMATORY LICENSE |

### **CONVEYING PARTY DATA**

| Name                    | Execution Date |
|-------------------------|----------------|
| UNIVERSITY OF MINNESOTA | 02/20/2019     |

## **RECEIVING PARTY DATA**

| Name:             | NATIONAL SCIENCE FOUNDATION |
|-------------------|-----------------------------|
| Street Address:   | 2415 EISENHOWER AVENUE      |
| Internal Address: | ROOM W 18000                |
| City:             | ALEXANDRIA                  |
| State/Country:    | VIRGINIA                    |
| Postal Code:      | 22314                       |

## **PROPERTY NUMBERS Total: 1**

| Property Type       | Number   |
|---------------------|----------|
| Application Number: | 16213248 |

#### **CORRESPONDENCE DATA**

**Fax Number:** (703)292-9041

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.

Email: nsfpatents@nsf.gov

Correspondent Name: NATIONAL SCIENCE FOUNDATION

Address Line 1: 2415 EISENHOWER AVENUE

Address Line 2: ROOM W 18000

Address Line 4: ALEXANDRIA, VIRGINIA 22314

NAME OF SUBMITTER:DANA THIBODEAUSIGNATURE:/DMT/DATE SIGNED:02/22/2019

**Total Attachments: 1** source=5232#page1.tif

PATENT 505342284 REEL: 048417 FRAME: 0414

INVENTION 20170194 EIR: 1450401-17-0002

# License to the United States Government

| Sign and submit the executed document to the appropriate funding agency (e.g. upload in iEdison).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Invention Title: Source Root Inverse Schmidt-Kalman Filters for Vision-Aided Inertial                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Navigation and Mapping                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Inventor(s): Stergios Roumeliotis, Kejian Wu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| U.S. Filing/Issue Date: 12/07/2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Patent or Application Serial No.: 16/213, 248                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Grant/Contract Number(s): IIS1328722                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Foreign Applications filed/intended in (countries):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <ul> <li>The invention identified above is a Subject Invention under 35 U.S.C. 200, et seq., and the Standard Patent Rights clause at 37 CFR 401.14, FAR 52.227-11 or FAR 52.227-12 (if applicable) which are included among the terms of the above identified grant or contract award from the United States Government. This document is confirmatory of:</li> <li>The nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the invention described in any patent application and in any and all divisions, continuations, and continuations in part, and in any and all patents and re-issues granted thereon throughout the world; and</li> <li>All other rights acquired by the Government by reason of the above identified grant/contract award and the laws and regulations that are applicable to the award.</li> <li>The Government is hereby granted an irrevocable power to inspect and make copies of the above-identified patent application.</li> </ul> |
| Signed this                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Title Chief of Staff / Operations Manager  REGENTS OF THE TECHNOLOGY COMMERCIALIZATION  For UNIVERSITY OF MINNESOTA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| (Grantee/Contractor Organization)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| At McNamara Alumni Center Suite 280 200 Oak Street S. F. Minneapolie, MN 55455                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

PATENT REEL: 048417 FRAME: 0415

**RECORDED: 02/22/2019** 

(Business Address)