National Aeronautics and Space Administration

Disclosure of Invention and New Technology (Including Software)

Form Approved O.M.B. NO. 2700-0052

DATE 2019-10-30

CONTRACTOR CASE NO.

NASA CASE NO. (OFFICIAL USE ONLY) NONE

This is an important legal document. Carefully complete and forward to the Patent Representative (NASA in-house innovation) or New Technology Representative (contractor/grantee innovation) at NASA. Use of this report form by contractor/grantee is optional; however, an alternative format must at a minimum contain the information required herein. NASA in-house disclosures should be read, understood and signed by a technically competent witness in the witness signature block at the end of this form. In completing each section, use whatever detail deemed appropriate fora "full and complete disclosure." Contractors/Grantees please refer to the New Technology or Patent Rights – Retention by the Contractor clauses. When necessary, attach additional documentation to provide a full, detailed description.

1. DESCRIPTIVE TITLE
VIIRS Demonstration Software

2. INNOVATOR(S) *(For each innovator provide: Name, Title, Work Address, Work Phone Number, and Work E-mail Address. If multiple innovators, number each to match Box 5.)*
James Tilton, Computer Engineer, Emeritus, NASA GSFC, Greenbelt, MD, 20771, 301-286-9510, james.c.tilton@nasa.gov

3. INNOVATOR'S EMPLOYER WHEN INNOVATION WAS MADE *(For each innovator provide: Name, Division and Address of Employer, Organizational Code/Mail Code, and Contract/Grant Number if applicable. If multiple innovators, number each to match Box 5.)*
James Charles Tilton, NASA GSFC, Greenbelt, MD, 20771, 606.3, NA

4. PLACE OF PERFORMANCE *(Address(es) where innovation made)*
NASA GSFC, Greenbelt, MD, 20771

5. EMPLOYER STATUS *(choose one for each innovator)*

GE

Innovator #1 *Innovator #2*

Innovator #3 *Innovator #4*

GE = Government
CU = College or University
NP = Non-Profit Organization
SB = Small Business Firm
LE = Large Entity

6. ORIGIN *(Check all that apply and provide all applicable numbers. If multiple Contracts/Grants, etc., list Contract/Grant Numbers in Box 3 with applicable employer information.)*

[] NASA In-house Org. Mail Code
[] Grant/Cooperative Agreement No.
[] Prime Contract No.
Task No. Report No.
[] Subcontractor: Subcontract Tier
[] Joint Effort (contract, subcontractor and/or grantee contributions(s), and NASA in-house contribution)
[] Multiple Effort (multiple contractor, subcontractor and/or grantee contributions, no NASA in-house contribution)
[] Other (e.g., Space Act Agreement, MOA) No.

7. NASA CONTRACTORING OFFICER'S TECHNICAL REPRESENTATIVE (COTR)

8. CONTRACTOR/GRANTEE NEW TECHNOLOGY REPRESENTATIVE (POC)
/

9. BRIEF ABSTRACT *(A general description of the innovation which describes its capabilities, but does not reveal details that would enable duplication or imitation of the innovation.)*

We have developed a package of VIIRS demonstration software in response to user's requests for help in writing software utilizing VIIRS data products. This software is based on a previous NTR (e-NTR Number 1560353146, Case Number GSC-18347-1). The key difference between this current NTR and the previous NTR is that the code related to the main innovation reported in the previous NTR is stripped out making the code in this current NTR more suitable for release to the general public, including foreign nationals.

The code included in this NTR demonstrates how to access VIIRS image, geolocation, land/water mask and cloud mask from the appropriate VIIRS data products. It also demonstrates how to co-register VIIRS image data to Landsat OLI or ETM+ image data.

SECTION I – DESCRIPTION OF THE PROBLEM OR OBJECTIVE THAT MOTIVATED THE INNOVATION'S DEVELOPMENT (Enter as appropriate: A. – General description of problem/objective; B. – Key or unique problem characteristics; C. – Prior art, i.e., prior techniques, methods, materials, or devices performing function of the innovation, or previous means for performing function of software; and D. – Disadvantages or limitation of prior art.)
See file SectionI.pdf

SECTION II – TECHNICALLY COMPLETE AND EASILY UNDERSTANDABLE DESCRIPTION OF INNOVATION DEVELOPED TO SOLVE THE PROBLEM OR MEET THE OBJECTIVE (Enter as appropriate; existing reports, if available, may form a part of the disclosure, and reference thereto can be made to complete this description: A. – Purpose and description of innovation/software; B. – Identification of component parts or steps, and explanation of mode of operation of innovation/software preferably referring to drawings, sketches, photographs, graphs, flow charts, and/or parts or ingredient lists illustrating the components; C. – Functional operation; D. – Alternate embodiments of the innovation/software; E. – Supportive theory; F. – Engineering specifications; G. – Peripheral equipment; and H. – Maintenance, reliability, safety factors.)
See file SectionII.pdf

SECTION III – UNIQUE OR NOVEL FEATURES OF THE INNOVATION AND THE RESULTS OR BENEFITS OF ITS APPLICATION (Enter as appropriate: A. – Novel or unique features; B. – Advantages of innovation software; C. – Development or new conceptual problems; D. – Test data and source of error; E. – Analysis of capabilities; and F. – For software, any re-use or re-engineering of existing code, use of shareware, or use of code owned by a non-federal entity.)
(NA)

SECTION IV – SPECULATION REGARDING POTENTIAL COMMERCIAL APPLICATIONS AND POINTS OF CONTACT (Including names of companies producing or using similar products.)
None.

10. ADDITIONAL DOCUMENTATION *(Include copies or list below any pertinent documentation which aids in the understanding or application of the innovation (e.g., articles, contractor reports, engineering specs, assembly/manufacturing drawings, parts or ingredients list, operating manuals, test data, assembly/manufacturing procedures, etc.).)*

TITLE	PAGE	DATE
SectionI.pdf		2019-10-22
SectionII.pdf		2019-10-22
code.zip		2019-10-22

11. DEGREE OF TECHNOLOGY SIGNIFICANCE *(Which best expresses the degree of technological significance of this innovation?)*

[X] Modification to Existing Technology [] Substantial Advancement in the Art [] Major Breakthrough

12. STATE OF DEVELOPMENT

[] Concept Only [] Design [] Prototype [] Modification [] Production Model [] Used in Current World

13. PATENT STATUS (Prior patent on/or related to this innovation)
See file SectionII.pdf

14. INDICATE THE DATE OR THE APPROXIMATE TIME PERIOD WHICH THIS INNOVATION WAS DEVELOPED *(i.e. conceived constructed, tested, etc.)*

Start: End:

15. PREVIOUS OR CONTEMPLATED PUBLICATION OR PUBLIC DISCLOSURE INCLUDING DATES *"(Provide as applicable: A. - Type of publication or disclosure, e.g. report, conference or seminar, oral presentation; B. - Disclosure by NASA or Contractor/Grantee; and C. - Title, volumne no., page no., and date of publication*

16. QUESTIONS FOR SOFTWARE ONLY

(a) Using non-NASA employees to beta-test the program? [ ]YES [ ]NO If Yes, done under a beta-test agreement? []YES []NO
(b) Modification of this program continued by civil servant and/or contractual agreement? []YES []NO
(c) Copyrighted registered? []YES []NO []UNKNOWN If Yes, then by whom?
(d) Has the lastest version been distributed outside of NASA or contractor? []YES []NO []UNKNOWN
(e) Were prior version distributed outside of NASA or Contractor? []YES []NO [] UNKNOWN If Yes, supply NASA or contractor contact
(f) Contains or based on code not owned by U.S. Government or its contractors? []YES []NO []UNKNOWN
If Yes, name of code and codes' owner
Has a license for use been obtained? []YES []NO []UNKNOWN

17. DEVELOPMENT HISTORY

STAGE OF DEVELOPMENT	DATE (MM/YYYY)	LOCATION	IDENTIFY SUPPORTING WITNESSES (NASA in-house only)
a. First disclosure to others	/		
b. First sketch, drawing, logic chart or code	/		
c. First written description	/		
d. Completion of first model of full size device *(invention)* or beta version *(Software)*	/		
e. First successful operational test *(invention)* or alpha version *(Software)*	/		

f. Contribution of innovators *(if jointly developed, provide the contribution of each innovator)*

g. Indicate any past, present, or contemplated government use of the innovation

18. SIGNATURES OF INNOVATOR(S), WITNESS(ES), AND NASA APPROVAL				
TYPED NAME AND SIGNATURE *(Innovator #1)*		DATE	TYPED NAME AND SIGNATURE *(Innovator #2)*	DATE
TYPED NAME AND SIGNATURE *(Innovator #3)*		DATE	TYPED NAME AND SIGNATURE *(Innovator #4)*	DATE
TYPED NAME AND SIGNATURE *(Innovator #5)*		DATE	TYPED NAME AND SIGNATURE *(Innovator #6)*	DATE
NASA APPROVED	TYPED NAME		SIGNATURE	DATE