PATENT ASSIGNMENT COVER SHEET

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

CONVEYING PARTY DATA

| Name | Execution Date |
|---------------|----------------|
| XIANGDONG LIU | 11/13/2017 |

RECEIVING PARTY DATA

| Name: | LOCKHEED MARTIN CORPORATION | |
|-----------------|-----------------------------|--|
| Street Address: | 6801 ROCKLEDGE DRIVE | |
| City: | BETHESDA | |
| State/Country: | MARYLAND | |
| Postal Code: | 20817-1877 | |

PROPERTY NUMBERS Total: 1

| Property Type | Number |
|---------------------|----------|
| Application Number: | 15846125 |

CORRESPONDENCE DATA

Fax Number: (303)977-4684

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.

(303)977-4748 Phone:

Email: lisa.k.levine@lmco.com **Correspondent Name:** KENNETH J. JOHNSON Address Line 1: LM SPACE SYSTEMS CO. Address Line 2: P.O. BOX 179, M/S 5120

Address Line 4: DENVER, COLORADO 80201-4684

| ATTORNEY DOCKET NUMBER: | SS-01087 |
|-------------------------|------------------|
| NAME OF SUBMITTER: | LISA K. LEVINE |
| SIGNATURE: | /Lisa K. Levine/ |
| DATE SIGNED: | 03/11/2019 |

Total Attachments: 2

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PATENT REEL: 048561 FRAME: 0123 505368027

Docket No.: SS-01087 (090424-0299)

ASSIGNMENT

WHEREAS I/We, the undersigned, have made a certain invention as set forth in an application for United States Letters Patent, entitled RANDOM ACCESS FOR LTE OVER SATELLITE, filed on December 18, 2017, and identified by United States Patent Application No. 15/846,125, and I/We, the undersigned, authorize and request the practitioners of McDermott Will & Emery LLP to insert the filing date and application number of the application, when known;

AND WHEREAS, LOCKHEED MARTIN CORPORATION (the "Entity"), a corporation of the State of Maryland and having an address of 6801 Rockledge Drive, Bethesda, Maryland 20817-1877, is desirous of acquiring the entire rights, title and interests in and to said invention and in and to any and all Letters Patent and certificates of the United States, foreign countries and all regions worldwide which may be obtained therefor;

NOW, THEREFORE, for good and valuable consideration, the receipt for and sufficiency of which is hereby acknowledged, I/We, the undersigned, do hereby sell, assign, transfer and set over unto the Entity, its legal representatives, successors, and assigns, the entire rights, title and interests in and to said application and said invention worldwide, including the right to claim priority, including any applications worldwide based in whole or in part on said application and/or in whole or in part on said invention as well as the right to apply for any such applications worldwide, including any international and foreign applications filed under any international or foreign patent law or treaty (including the Patent Cooperation Treaty, the European Patent Convention, the Paris Convention for the Protection of Industrial Property, and all other treaties of like purposes, including the rights to all benefits thereunder), and including any provisionals, non-provisionals, continuations, continuations-in-part, divisions, reissues, re-examinations, inter partes reviews, post grant reviews, covered business methods, national stages, regional stages and extensions thereof, and in and to any and all patents and certificates of the United States, foreign countries and all regions worldwide which may be issued based in whole or in part on said application and/or in whole or in part on said invention, including the right to enforce such patents and certificates, including the right to sue for injunctions and recover damages and attorney fees for past, present and future infringements;

UPON SAID CONSIDERATIONS, I/We, the undersigned, hereby agree with said assignee that I/We, the undersigned, will not execute any writing or do any act whatsoever conflicting with these presents, and that I/We, the undersigned, will, at any time upon request, without further or additional consideration but at the expense of said assignee, execute such additional assignments and other writings and do such additional acts as said assignee may deem necessary or desirable to perfect said assignee's enjoyment of this assignment, and render all necessary assistance in making application for and obtaining original, provisional, non-provisional, continuation, continuation-in-part, divisional, reissue, re-examination, inter partes review, post grant review, covered business method, national stage, regional stage and extension Letters Patent and certificates of the United States and/or of any and all foreign countries and regions based in whole or in part on said application and/or in whole or in part on said invention, and in enforcing any rights or choses in action accruing as a result of such applications, patents or certificates, by giving testimony in any proceedings or transactions involving such applications, patents or certificates, and by executing preliminary statements and other affidavits, it being understood that the foregoing covenant and agreement shall bind, and inure to the benefit of heirs, executors, administrators, assigns and legal representatives of said assignor and assignee;

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AND I/We, the undersigned, authorize and request all Letters Patent and certificates based on said application and/or said invention to be issued to the Entity, its legal representatives, successors or assigns, as the sole owner of the entire rights, title and interests in and to said patents, said certificates and said invention hereby assigned.

Undersigned:

11/13/2017

Date

18402 Fable Drive, Boyds, Maryland 20841

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