

06-13-2002

U.S. Department of Commerce
Patent and Trademark Office
PATENT



102121501

TO: The Commissioner of Patents and Trademarks

Additional document(s) or copy(ies).

Submission Type

☒ New
☐ Resubmission (Non-Recordation)
Document ID#

☐ Correction of PTO Error

Reel # Frame #

☐ Corrective Document

Reel# Frame #

Conveyance Type

☐ Assignment
☐ License
☐ Security Agreement
☐ Change of Name

☐ Merger

☒ Other Notice of Grant of Security Interest

U.S. Government

(For Use ONLY by U.S. Government Agencies)

☐ Departmental File ☐ Secret File

Conveying Party(ies)

☐ Mark if additional names of conveying parties attached

Name (line 1) Space Systems/Loral, Inc.

Name (line 2)

Execution Date
Month Day Year

12/21/01

Second Party

Name (line 1)

Name (line 2)

Execution Date
Month Day Year

Receiving Party

☐ Mark if additional names of receiving parties attached

Name (line 1) Bank of America, N.A., as Collateral Agent

Name (line 2)

Address (line 1) 101 N. Tryon Street

Address (line 2) 15th Floor

Address (line 3) Charlotte

City

North Carolina

State/Country

28255

Zip Code

Domestic Representative Name and Address

Enter for the first Receiving Party only.

Name N/A

Address (line 1)

Address (line 2)

Address (line 3)

Address (line 4)

☐ If document to be recorded is an assignment and the receiving party is not domiciled in the United States, an appointment of a domestic representative should be attached. (Designation must be a separate document from Assignment.)

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Public burden reporting for this collection of information is estimated to average approximately 30 minutes per Cover Sheet to be recorded, including time for reviewing the document and gathering the data needed to complete the Cover Sheet. Send comments regarding this burden estimate to the U.S. Patent and Trademark Office, Chief Information Officer, Washington, D.C. 20231 and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Paperwork Reduction Project (0651-0027), Washington, D.C. 20503. See OMB Information Collection Budget Package 0651-0027, Patent and Trademark Assignment Practice. DO NOT SEND REQUESTS TO RECORD ASSIGNMENT DOCUMENTS TO THIS ADDRESS.

Mail documents to be recorded with required cover sheet(s) information to:
Commissioner of Patents and Trademarks, Box Assignments, Washington, D.C. 20231

Correspondent Name and Address

Area Code and Telephone Number **(919) 286-8000**

Name **Steven D. Thomas**

Address (line 1) **Moore & Van Allen, PLLC**

Address (line 2) **2200 West Main Street**

Address (line 3) **Suite 800**

Address (line 4) **Durham, North Carolina 27705**

Pages Enter the total number of pages of the attached conveyance document including any attachments.

5

Application Number(s) or Patent Number(s)



Mark if additional numbers attached

Enter either the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).

Patent Application Number(s)

Patent Number(s)

			5789978	5610556	6312849
			5945960	6285928	4847625
			4489293	4903033	6147656

If this document is being filed together with a new Patent Application, enter the date the patent application was signed by the first named executing inventor.

Month Day Year

Patent Cooperation Treaty (PCT)

Enter PCT application number
only if a U.S. Application Number
has not been assigned.

PCT

PCT

PCT

PCT

PCT

PCT

Number of Properties Enter the total number of properties involved.

50

Fee Amount

Fee Amount for Properties Listed (37 CFR 3.41):

\$ **2,000.00**

Method of Payment: Enclosed ☒

Deposit Account ☒

Deposit Account

(Enter for payment by deposit account or if additional fees can be charged to the account.)

Deposit Account Number:

13-4365

Authorization to charge additional fees:

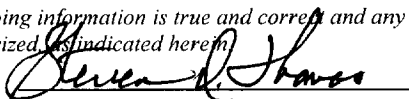
Yes ☒ No ☐

Statement and Signature

To the best of my knowledge and belief, the foregoing information is true and correct, and any attached copy is a true copy of the original document. Charges to deposit account are authorized, as indicated herein.

Steven D. Thomas

Name of Person Signing


Signature

May 31 2002
Date Signed

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Conveying Party(ies)

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Name (line 2)

Execution Date
Month Day Year

Name (line 1)

Name (line 2)

Execution Date
Month Day Year

Name (line 1)

Name (line 2)

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Patent Application Number(s)

Patent Number(s)

5429888

5472805

5793813

6291099

5882817

5510208

5359280

5858574

5576721

5395708

6296207

6301225

5966049

5978652

5397976

**RECORDATION FORM COVER SHEET
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PATENTS ONLY**

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	Execution Date Month Day Year
Name (line 1) <input type="text"/>	<input type="text"/>
Name (line 2) <input type="text"/>	Execution Date Month Day Year
Name (line 1) <input type="text"/>	<input type="text"/>
Name (line 2) <input type="text"/>	Execution Date Month Day Year
Name (line 1) <input type="text"/>	<input type="text"/>
Name (line 2) <input type="text"/>	

Receiving Party(ies) ☐ **Mark if additional names of receiving parties attached**
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Name (line 1) <input type="text"/>	<input type="checkbox"/> If document to be recorded is an assignment and the receiving party is not domiciled in the United States, an appointment of a domestic representative should be attached. (Designation must be a separate document from Assignment.)
Name (line 2) <input type="text"/>	
Address (line 1) <input type="text"/>	
Address (line 2) <input type="text"/>	<input type="checkbox"/> If document to be recorded is an assignment and the receiving party is not domiciled in the United States, an appointment of a domestic representative should be attached. (Designation must be a separate document from Assignment.)
Address (line 3) <input type="text"/> <input type="text"/> <input type="text"/>	
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Application Number(s) or Patent Number(s) ☐ **Mark if additional numbers attached**
Enter either the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).

Patent Application Number(s)			Patent Number(s)		
<input type="text"/>	<input type="text"/>	<input type="text"/>	5822515	5517203	4540955
<input type="text"/>	<input type="text"/>	<input type="text"/>	6037909	4565979	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	5673459	6029438	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	6010096	6182441	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	5978157	5923292	<input type="text"/>

NOTICE
OF
GRANT OF SECURITY INTEREST
IN
PATENTS

United States Patent and Trademark Office


Ladies and Gentlemen:

Please be advised that pursuant to the Security Agreement dated as of December 21, 2001 (the "Security Agreement") by and among the Grantors party thereto (each an "Grantor" and collectively, the "Grantors") and Bank of America, N.A., as Collateral Agent (the "Collateral Agent") for the holders of the Secured Obligations referenced therein, the undersigned Grantor has granted a continuing security interest in and continuing lien upon, the patents and patent applications shown below to the Collateral Agent for the ratable benefit of the holders of the Secured Obligations:

The Grantors and the Collateral Agent, on behalf of the holders of the Secured Obligations, hereby acknowledge and agree that the security interest in the foregoing patents and patent applications (i) may only be terminated in accordance with the terms of the Security Agreement and (ii) is not to be construed as an assignment of any patent or patent application.

Very truly yours,

SPACE SYSTEMS/LORAL, INC.,
a Delaware corporation

By: 
Name:
Title:

Grantor's Address:

SPACE SYSTEMS/LORAL, INC.
c/o Loral SpaceCom Corporation
600 Third Avenue
New York, NY 10019

Acknowledged and Accepted:

BANK OF AMERICA, N.A., as Collateral Agent

By: _____
Name:
Title:

The Grantors and the Collateral Agent, on behalf of the holders of the Secured Obligations, hereby acknowledge and agree that the security interest in the foregoing patents and patent applications (i) may only be terminated in accordance with the terms of the Security Agreement and (ii) is not to be construed as an assignment of any patent or patent application.

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SPACE SYSTEMS/LORAL, INC.
c/o Loral SpaceCom Corporation
600 Third Avenue
New York, NY 10019

Acknowledged and Accepted:

BANK OF AMERICA, N.A., as Collateral Agent

By: _____

Name:

Title:

STEVE A. ARONOWITZ
MANAGING DIRECTOR

U.S. Patents

Issued Patents

Description	Patent No.	Issued
KU-BAND LINEARIZER BRIDGE	5789978 ✓	8/4/98
METHOD AND APPARATUS FOR RECONFIGURING ANTENNA RADIATION PATTERNS	5945960 ✓	8/31/99
MINIATURE DUAL-MODE, DIELECTRIC-LOADED CAVITY FILTER	4489293 ✓	12/18/84
MULTI-PORT AMPLIFIERS WITH SWITCHLESS REDUNDANCY	5610556 ✓	3/11/97
ONBOARD ATTITUDE CONTROL USING REACTION WHEELS	6285928 ✓	9/4/01
PLANAR DUAL POLARIZATION ANTENNA	4903033 ✓	2/20/90
METHOD FOR PRODUCING A BATTERY CELL STRUCTURE	6312849 ✓	11/6/01
WIDEBAND, APERTURE-COUPLED MICROSTRIP ANTENNA	4847625 ✓	7/11/89
ACTIVE MULTIPLE BEAM ANTENNAS	6147656 ✓	11/14/00
ADAPTIVE MASS EXPULSION ATTITUDE CONTROL SYSTEM	6205378 ✓	3/20/01
ANTENNA FEED AND BEAMFORMING NETWORK	5539415 ✓	7/23/96
ANTENNA GEOMETRY FOR SHAPED DUAL REFLECTOR ANTENNA	5790077 ✓	8/4/98
ANTENNA SYSTEM WITH PLURAL REFLECTORS	6049312 ✓	4/11/00
APERTURE COUPLED CIRCULAR POLARIZATION ANTENNA	4843400 ✓	6/27/89
APOGEE AT CONSTANT TIME-OF-DAY EQUATORIAL (ACE) ORBIT	5326054 ✓	7/5/94
APPARATUS TO CONTROL MULTIPLE PARALLEL BATTERIES TO SHARE LOAD CURRENT	6208039 ✓	3/27/01
ARGUMENT OF PERIGEE CORRECTION WITH LONGITUDE CONTROL FOR INCLINED, ECCENTRIC, GEOSYNCHRONOUS SATELLITES	6317661 ✓	11/13/01
ATTITUDE CONTROL AND NAVIGATION SYSTEM FOR HIGH RESOLUTION IMAGING	5899945 ✓	5/4/99
AUTOMATED ORBIT COMPENSATION SYSTEM AND METHOD	6314344 ✓	11/6/01
AUTONOMOUS SOLAR TORQUE MANAGEMENT	5996942 ✓	12/7/99
AUTONOMOUS SPACECRAFT PAYLOAD BASE MOTION ESTIMATION AND CORRECTION	6000661 ✓	12/14/99
AUTONOMOUS STATIONKEEPING FOR THREE-AXIS STABILIZED SPACECRAFT	4767084 ✓	8/30/88
BATTERY CELL BYPASS MODULE	6025696 ✓	2/15/00
BATTERY CHARGE MANAGEMENT ARCHITECTURE	6014013 ✓	1/11/00
BATTERY RECHARGING TECHNIQUE	5429888 ✓	7/4/95
BATTERY SYSTEM	6291099 ✓	9/18/01
BILATERAL POWER CONVERTER FOR A SATELLITE POWER SYSTEM	5359280 ✓	10/25/94
BIMODAL ELECTRIC VEHICLE BATTERY SYSTEM	5395708 ✓	3/7/95
BROADBAND LINEARIZER FOR POWER AMPLIFIERS	5966049 ✓	10/12/99
CARBON/CARBON MATERIALS USEFUL AS NA/S BATTERY CONTAINER/CURRENT COLLECTOR	5472805 ✓	12/5/95
BATTERY CELL DESIGN FOR A BIPOLAR RECHARGABLE BATTERY	5882817 ✓	3/16/99
CELLS AND GAS DEPOLARIZED BATTERIES AND METHOD FOR PRODUCING SAME	5858574 ✓	1/12/99

Description	Patent No.	Issued
COMBINED STATIONKEEPING AND MOMENTUM MANAGEMENT	6296207 ✓	10/2/01
COMMON DIRECT BROADCASTING SERVICE SYSTEM	5978652 ✓	11/2/99
COMMUNICATION SYSTEM EMPLOYING SPACE-BASED AND TERRESTRIAL TELECOMMUNICATIONS EQUIPMENT	5793813 ✓	8/11/98
COMPOSITE BATTERY CELL SLEEVE	5510208 ✓	4/23/96
COMPOSITE MULTI-BEAM AND SHAPED BEAM ANTENNA SYSTEM	5576721 ✓	11/19/96
COFIGURABLE COMMUNICATION APPARATUS THAT PERMITS USE OF UNUSED MULTIPLEXER CHANNELS WHEN OPERATING IN HIGH POWER MODE	6301225 ✓	10/9/01
CONTROL SYSTEM FOR VOLTAGE CONTROLLED BILATERAL CURRENT SOURCE	5397976 ✓	3/14/95
CORRECTION OF UNCOMMANDED MODE CHANGES IN A SPACECRAFT SUBSYSTEM	5822515 ✓	10/13/98
DEPLOYED PAYLOAD FOR A COMMUNICATIONS SPACECRAFT	6037909 ✓	3/14/00
DEPLOYMENT HINGE APPARATUS	5673459 ✓	10/7/97
DEPLOYMENT RESTRAINT AND SEQUENCING DEVICE	6010096 ✓	1/4/00
DIELECTRIC BOOTLACE LENS	5978157 ✓	11/2/99
DIELECTRIC RESONATOR FILTER WITH COUPLING RING AND ANTENNA SYSTEM FORMED THEREFROM	5517203 ✓	5/14/96
DOUBLE DIELECTRIC RESONATOR STABILIZED OSCILLATOR	4565979 ✓	1/21/86
DRIVE CIRCUIT FOR ELECTRIC PROPULSION THRUSTER	6029438 ✓	2/29/00
DRIVE CIRCUIT FOR ELECTRIC PROPULSION THRUSTER	6182441 ✓	2/6/01
DUAL ANTENNA NULL ELIMINATION	5923292 ✓	7/13/99
DUAL MODE CAVITY STABILIZED OSCILLATOR	4540955 ✓	9/10/85