Form PTO-1595 (Rev. 09/04) OMB No. 0651-0027 (exp. 6/30/2005)	U.S. DEPARTMENT OF COMMERCI United States Patent and Trademark Office			
RECORDATION FOR				
PATENTS ONLY				
To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.				
1. Name of conveying party(ies)/Execution Date(s):	2. Name and address of receiving party(ies)			
Hughes Electronics Corporation	Name: The Boeing Company			
	Internal Address:			
Function Deta(a) Falancia a coop				
Execution Date(s) February 3, 2003 Additional name(s) of conveying party(ies) attached? Yes V No	Street Address: 100 North Riverside Plaza			
3. Nature of conveyance:				
✓ Assignment	City: Chicago			
Security Agreement Change of Name	State: IL			
Government Interest Assignment				
Executive Order 9424, Confirmatory License	Country: USA Zip: 60606-1596			
Other	Additional name(s) & address(es) attached? Yes Vo			
4. Application or patent number(s):	document is being filed together with a new application.			
A. Patent Application No.(s)	B. Patent No.(s) 5,179,363 and 4,947,467			
	5,179,505 and 4,947,407			
Additional numbers att	ached? ☐Yes ✓No			
5. Name and address to whom correspondence	6. Total number of applications and patents			
concerning document should be mailed:	involved: 2			
Name: Terje Gudmestad	7. Total fee (37 CFR 1.21(h) & 3.41) \$_80.00			
Internal Address: Boeing Management Company	Authorized to be charged by credit card			
	✓ Authorized to be charged to deposit account			
Street Address: 15460 Laguna Canyon Road	Enclosed			
	None required (government interest not affecting title)			
City: Irvine	8. Payment Information			
State: <u>CA</u> Zip: <u>92618</u>	a. Credit Card Last 4 Numbers Expiration Date			
Phone Number: (949) 790-1374	b. Deposit Account Number 18-1730			
Fax Number: (949) 790-1213	Authorized User Name Henry G. Kohlmann			
Email Address: terje.gudmestad@bgeing.com	A TOTAL CONTROL TOTAL CONTROL OF THE PARTY O			
9. Signature:				
Signature	Date			
Henry G. Kohlmann (Keg No. 26, 6 Name of Person Signing	Total number of pages including cover sheet, attachments, and documents:			

Documents to be recorded (including cover sheet) should be faxed to (703) 306-5995, or malled to:
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

PATENT REEL: 015428 FRAME: 0305 Signature:

CONFIRMATION BY HUGHES ELECTRONICS CORPORATION OF BOEING'S OWNERSHIP OF CERTAIN PATENTS

This Confirmation is effective the 3rd day of February 2003 and is executed in duplicate originals.

WHEREAS, Hughes Electronics Corporation, a corporation of the State of Delaware, United States of America, ("HUGHES") was the owner of a right, title and interest in and to any invention disclosures, applications for patent, letters patent, reissues, reexaminations, divisions, parents, continuations, continuations-in-part, or extensions thereof which may have been or shall be granted thereon in the United States, and any foreign country throughout the world for inventions listed on Attachment I hereto, said inventions being related to the satellite business and originating in business units that were part of the satellite business of HUGHES, ("The Patents"); and

WHEREAS, HUGHES, Hughes Space and Communications Company ("HSC") and The Boeing Company ("Boeing") were parties to an Intellectual Property Agreement dated as of October 6, 2000 ("The Agreement") wherein HUGHES assigned, to Boeing, HSC Intellectual Property (as defined in The Agreement) including without limitation the patents and invention disclosures listed in Schedule A thereto; and

WHEREAS, The Patents were not listed in Schedue A of The Agreement; and

WHEREAS, HUGHES and BOEING, both desire to confirm that BOEING now has all of the rights, title and interest that HUGHES had or has in and to The Patents; and

NOW THEREFORE, to whom it may concern, be it known that pursuant to the obligations herein and other good and valuable consideration, of which receipt is hereby acknowledged, subject fo pre-existing rights and to the extent of their lawful right to do so, **HUGHES** and **BOEING** confirm and agree as follows:

- 1. BOEING has all of the rights, title and interest that HUGHES had or has in and to The Patents; and
- 2. **HUGHES** has a license to **The Patents**, said license having the same scope and subject to the same obligations as the license retained by **HUGHES** as set forth in **The Agreement**.

CONFIRMED AND AGREED TO BY HUGHES ELECTRONICS CORPORATION

Date of Signature: February 3, 2003
Signatory's Name: Michael W. Sales
Signatory's Title: _Vice President, Asst. General Counsel & Assistant Secretary
STATE OFCALIFORNIA_
COUNTY OF LOS ANGELES
ON February 3, 2003 before me, JANET E. SHIBATA, a Notary Public in and for said State, personall appeared MICHAEL W. SALES
personally known to me or proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrumen
and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument
the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.
(WINNESS my hand and official seal.
JANET E. SHIBATA
Comm. No. 1258646 Q
Notary Public Notary Public - California
TOS ANGELES COUNTY A
CONFIRMED AND AGREED TO BY THE BOEING COMPANY: My Comm. Exp. March 30, 2004
Signature: Man
Date of Signature: February 17, 2003
Signatory's Name: Gene G. Partlow
Signatory's Title: Vice President. Intellectual Property Business
COUNTY OF ORANGE
ON 2-17-03 before me aura P. Aceves, a Notary Public in and for said State, personally appeared Gene G. Partlow
personally known to me or proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument
and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument
the person(s) or the entity (pon behalf of which the person(s) acted, executed the instrument.

_ W/M NESS my hand and official seal.

Notary Public

Page 1

CONFIRMATION BY HUGHES OF BOEING OWNERSHIP OF CERTAIN PATENTS.012703



ATTACHMENT I TO "CONFIRMATION BY HUGHES ELECTRONICS CORPORATION OF BOEING'S OWNERSHIP OF U.S. PATENTS AND CORRESPONDING FOREIGN PATENT APPLICATIONS AND PATENTS"

PATENT NO.	ISSUE DATE	PD-NO.	TITLE
4,710,588	12/01/87	85079	COMBINED PHOTOVOLTAIC-THERMOELECTRIC SOLAR CELL AND SOLAR CELL ARRAY
4,753,683	06/28/88	85072A	GALLIUM ARSENIDE SOLAR CELL SYSTEM
4,797,682	01/10/89	86469	DETERMINISTIC THINNED APERTURE PHASED ANTENNA ARRAY
4,799,065	01/17/89	79202A	RECONFIGURABLE BEAM ANTENNA
4,947,467	08/07/90	87305	TRAVELING-WAVE TUBE SLOW-WAVE STRUCTURE WITH INTEGRAL CONDUCTIVELY-LOADED BARREL AND METHOD OF MAKING SAME
5,112,438	05/12/92	90221	PHOTOLITHOGRAPHIC METHOD FOR MAKING HELICES FOR TRAVELING WAVE TUBES AND OTHER CYLINDRICAL OBJECTS
5,179,363	01/12/93	89547	STRESS RELIEVED IRIS IN A RESONANT CAVITY STRUCTURE
5,064,574	11/12/91	88070A	METHOD AND COMPOSITION FOR PROVIDING ELECTROSTATIC DISCHARGE PROTECTION FOR SPACECRAFT

RECORDED: 12/06/2004

Page 2