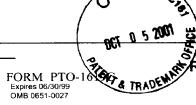
FORM PT 12 9 10 - 1	U.S. Department of Commerce Patent and Trademark Office PATENT
1018	875662 ER SHEET 10.5.01
Submission Type	rks: Please record the attached original document(s) or copy(ies). Conveyance Type
X New	X Assignment Security Agreement
Resubmission (Non-Recordation) Document ID#	License Change of Name
Correction of PTO Error Reel # Frame # Corrective Document	Merger U.S. Government (For Use ONLY by U.S. Government Agencies)
Reel # Frame #	Departmental File Secret File
Conveying Party(ies)	Mark if additional names of conveying parties attached Execution Date Month Day Year
Name (line 1) Pleva, Joseph S.	09 04 2001
Name (line 2)	Execution Date
Second Party	Month Day Year
Name (line 1) Breglia, Caroline	09 04 2001
Name (line 2)	
Receiving Party	Mark if additional names of receiving parties attached
Name (line 1) Raytheon Company	If document to be recorded is an assignment and the
Name (line 2)	receiving party is not domiciled in the United States, an appointment
Address (line 1) 141 Spring Street	of a domestic representative is attached.
Address (line 2)	(Designation must be a separate document from Assignment.)
Address (line 3) Lexington	MA 02421
City	State/Country Zip Code
Domestic Representative Name and A	Enter for the first Receiving Party only.
Name	
Address (line 1)	
Address (line 2)	
Address (line 3)	
Address (line 4)	
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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

FORM PTO-1619B Expires 06/30/99 OMB 0651-0027	Page 2	U.S. Department of Commerce Patent and Trademark Office PATENT
Correspondent Name and Address	Area Code and Telephone Numb	ver 781-401-9988
Name Daly, Crowley & Moffor	rd, LLP	
Address (line 1) 275 Turnpike Street, S	Suite 101	
Address (line 2) Canton, MA 02021-231	0	
Address (line 3)		
Address (line 4)		
Pages Enter the total number of processing including any attachment	pages of the attached conveyance do ts.	cument # 4
Application Number(s) or Patent Nu	· · ·	rk if additional numbers attached
Enter either the Patent Application Number or the Patent Application Number(s)		
09/932,574 (1971)		itent Number(s)
If this document is being filed together with a <u>new</u> Pasigned by the first named executing inventor.	atent Application, enter the date the patent appl	lication was Month Day Year
Patent Cooperation Treaty (PCT)		
Enter PCT application number	PCT PCT	PCT
only if a U.S. Application Numb has not been assigned.	PCT PCT	PCT
Number of Properties	total number of properties involved.	# 1
Fee Amount Fee Amoun	nt for Properties Listed (37 CFR 3.41)): \$ [40.00
Method of Payment: End Deposit Account	closed X Deposit Account	
	dditional fees can be charged to the account.) Deposit Account Number:	#50-0845
	Authorization to charge additional fees:	
Statement and Signature		
	belief, the foregoing information is true original document. Charges to depo	
Christopher S. Daly	1 Marton MI 1.	De 200001
Name of Person Signing	Signature	Date

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FORM PTO-1 Expires 06/30/99 OMB 0651-0027	619C 1 5 2001	i CE	ATION FO CONTINU	=	R SHEET	•		ent of Comm rademark Off TENT	
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Name (line 2)								ecution Date	ar
Name (line 1)	elcheccolo,	Michael J.						04 2001	
Name (line 2)									
Enter additional I Name (line 1) Name (line 2) Address (line 1) Address (line 2) Address (line 3) Name (line 1) Name (line 2) Address (line 1) Address (line 1)	Receiving Party(i	City		State/Coun	try	Zip (is an ass receiving domicile States, ar domestic attached.	ent to be reco gnment and to party is not d in the United a appointmen representativ (Designation grate document	the ed entative tion orded the d to of a ve is n must
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RECORDATION FORM COVER SHEET
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PATENTS ONLY

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

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Enter additional Co			,		Month Day Year
Name (line 1) Rus	ssell, Mark E.				09 07 2001
Name (line 2)					Execution Date Month Day Year
Name (line 1) Va	n Rees, H. Bartel	d			09 07 2001
Name (line 2)					
					Execution Date Month Day Year
Name (line 1)					
Name (line 2)					
Receiving Par			Mark if additional names of	of receiving partie	s attached
Enter additional Re	eceiving Party(ies)				
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Name (line 2)					domiciled in the United States, an appointment
Address (line 1)					of a domestic representative is attached. (Designation must be a separate
Address (line 2)					document from Assignment.)
Address (line 3)	City		State/Country	Zip Cod	e
Name (line 1)					If document to be recorded is an assignment and the
Name (line 2)					receiving party is not domiciled in the United
Address (line 1)					States, an appointment of a domestic representative is attached. (Designation must
Address (line 2)					be a separate document from Assignment.)
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Address (line 3)	City		State/Country	Zip C	ode
Application N	umber(s) or Paten	t Number(s)	Mark if additional nu		
	Patent Application Number	, ,			me property).
	ent Application Numl			Patent Numb	
09/932,574					

PATENT

REEL: 012241 FRAME: 0520

Appln. No.: Not Yet Assigned Attorney Docket No.: RTN-147PUS

Raytheon Case No.: 00E174

ASSIGNMENT

Whereas we, the undersigned, Joseph S. Pleva, Caroline Breglia, Thomas W. French, Walter Gordon Woodington, Michael Joseph Delcheccolo, Mark E. Russell and H. Barteld Van Rees, hereby have made certain inventions or discoveries (or both) set forth in an application for Letters Patent of the United States of America entitled SWITCHED BEAM ANTENNA ARCHITECTURE, identified as Attorney Docket No. RTN-147PUS, which application was filed on August 16, 2001 and assigned Application No. 09/932,574. In the event that the filing date and/or Application No. are not entered above at the time we executed this document, and if such information is deemed necessary, we hereby authorize and request our attorneys at Daly, Crowley & Mofford, LLP, 275 Turnpike Street, Suite 101, Canton, MA 02021-2310, to insert above the filing date and/or Application No. of said application.

Whereas, RAYTHEON COMPANY, a Massachusetts Corporation having a place of business at 141 Spring Street, Lexington, MA 02421, and which, together with its successors and assigns, is hereinafter called "Assignee," is desirous of acquiring the title, rights, benefits and privileges hereinafter recited;

Now, therefore, for valuable consideration furnished by Assignee to me, receipt and sufficiency of which I hereby acknowledge, I hereby, without reservation:

- 1. Assign, transfer and convey to Assignee the entire right, title and interest in and to said inventions and discoveries, said United States patent application, any and all other patent applications on said inventions and discoveries in whatsoever countries, including all utility, divisional, renewal, substitute, continuation, reissue and Convention applications based in whole or in part upon said inventions or discoveries, said United States patent application or upon said applications, and any and all Letters Patent, reissues, reexaminations, and extensions of Letters Patent granted for said inventions and discoveries or upon said applications, and every priority right that is or may be predicated upon or arise from said inventions, said discoveries, said applications and said Letters Patent;
- 2. Authorize Assignee to file patent applications in any or all countries on any or all of said inventions and discoveries in my name or in the name of Assignee or otherwise as Assignee may deem advisable, under the International Convention or otherwise;
- 3. Authorize and request the Commissioner of Patents and Trademarks of the United States of America and the empowered officials of all other governments to issue or transfer all said Letters Patent to Assignee, as assignee of the entire right, title and interest therein or otherwise as Assignee may direct;

PATENT

Appln. No.: Not Yet Assigned Attorney Docket No.: RTN-147PUS

Raytheon Case No.: 00E174

4. Warrant that I have not knowingly conveyed to others any right in said inventions, discoveries, applications or patents or any license to use the same or to make, use or sell anything embodying or utilizing any of said inventions or discoveries; and that I have good right to assign the same to Assignee without encumbrance;

5. Bind my heirs, legal representatives and assigns, as well as myself, to do, upon Assignee's request and at Assignee's expense, but without additional consideration to me or them, all acts reasonably serving to assure that the said inventions and discoveries, the said patent applications and the said Letters Patent shall be held and enjoyed by Assignee as fully and entirely as the same could have been held and enjoyed by me, my heirs, legal representatives and assigns if this assignment had not been made; and particularly to execute and deliver to Assignee all lawful application documents including petitions, specifications, and oaths, and all assignments, disclaimers, and lawful affidavits in form and substance as may be requested by Assignee; to communicate to Assignee all facts known to me relating to said inventions and discoveries or the history thereof; and to furnish Assignee with any and all documents, photographs, models, samples and other physical exhibits in my control or in the control of my heirs, legal representatives or assigns which may be useful for establishing the facts of my conceptions, disclosures, and reduction to practice of said inventions and discoveries.

In testimony of which we have executed this Assignment as an instrument under seal on the dates indicated next to my name.

State or Commonwealth of	Maccachurate
State of Commonwealth of	TIMESMENUSEILE

County Middleser

Dated <u>9/4/01</u>

On this 4rk day of Scotenber, 2001, before me appeared Joseph S. Pleva, to me known and known to me as the person described in and who executed the foregoing instrument, and he/she acknowledged the same to be his/her free act and deed.

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Appln. No.: Not Yet Assigned Attorney Docket No.: RTN-147PUS

Raytheon Case No.: 00E174

State or Commonwealth of Massachuse# <	
County Middlesex	7
Dated 914/01	Caroline Breglia
On this 4th day of September to me known and known to me as the person descriinstrument, and he/she acknowledged the same to be	_, 2001, before me appeared Caroline Breglia, bed in and who executed the foregoing
State or Commonwealth of Massachusetts	
County Mildlesex	
Dated 9/4/01	Thomas W. French
On this Ysk day of September French, to me known and known to me as the perso foregoing instrument, and he/she acknowledged the	n described in and who executed the
State or Commonwealth of Massachus eth	
County Middlesex	
Dated 9/4/01	Walter Gordon Woodington
On this 4th day of September Woodington to me known and known to me as the foregoing instrument, and he/she acknowledged the	person described in and who executed the

PATENT

Appln. No.: Not Yet Assigned Attorney Docket No.: RTN-147PUS

Raytheon Case No.: 00E174

State or Commonwealth of Massachuse HS				
County Middlesey				
Dated 9 (4 (0) Michael J. Delcheccolo				
On this 4 day of September, 2001, before me appeared Michael J. Delcheccolo to me known and known to me as the person described in and who executed the foregoing instrument, and he/she acknowledged the same to be his/her free act and deed. Notary Public				
State or Commonwealth of Mossachuse#s				
County Midlesex				
Dated 9/7/01				
Mark E. Russell				
On this 7th day of 5ectember, 2001, before me appeared Mark E. Russell to me known and known to me as the person described in and who executed the foregoing instrument, and he/she acknowledged the same to be his/her free act and deed. Pett International Control of the Cont				
Notary Public				
State or Commonwealth of Massachusetts				
County Millesex				
Dated 9/7/01				
H. Barteld Van Rees				
On this 7 L day of September, 2001, before me appeared H. Barteld Van Rees to me known and known to me as the person described in and who executed the foregoing instrument, and he/she acknowledged the same to be his/her free act and deed.				
Notary Public				

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RECORDED: 10/05/2001