# PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT3597247

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

### **CONVEYING PARTY DATA**

Name	Execution Date
DTS, INC.	10/01/2015

### **RECEIVING PARTY DATA**

Name:	WELLS FARGO BANK, NATIONAL ASSOCIATION, AS ADMINISTRATIVE AGENT
Street Address:	1525 WEST W.T. HARRIS BLVD.
Internal Address:	MAC D1109-019
City:	CHARLOTTE
State/Country:	NORTH CAROLINA
Postal Code:	28262

### **PROPERTY NUMBERS Total: 58**

Property Type	Number
Patent Number:	5956674
Patent Number:	5974380
Patent Number:	5978762
Patent Number:	6487535
Patent Number:	6226616
Patent Number:	6931370
Patent Number:	7212872
Patent Number:	7003467
Patent Number:	7283634
Patent Number:	7272567
Patent Number:	7668723
Patent Number:	8374858
Patent Number:	7392195
Patent Number:	7930184
Patent Number:	8239210
Patent Number:	8300837
Patent Number:	8005233
Patent Number:	8290782
Patent Number:	7853022

<u>PATENT</u>

REEL: 037032 FRAME: 0109

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Property Type	Number
Patent Number:	7929708
Patent Number:	8233629
Patent Number:	8385556
Patent Number:	8099285
Patent Number:	8000485
Patent Number:	8879750
Patent Number:	8908874
Patent Number:	9042565
Patent Number:	9031268
Patent Number:	7564979
Patent Number:	7190795
Application Number:	14720605
Application Number:	13228272
Application Number:	14026984
Application Number:	14690935
Application Number:	13612543
Application Number:	13834743
Application Number:	13858815
Application Number:	13922472
Application Number:	13606918
Application Number:	13838697
Application Number:	14084479
Application Number:	14138786
Application Number:	13727421
Application Number:	14206868
Application Number:	14199706
Application Number:	14332098
Application Number:	14447516
Application Number:	14091112
Application Number:	14555324
Application Number:	14632997
Application Number:	14620544
Application Number:	14506187
Application Number:	62099892
Application Number:	62110211
Application Number:	14824998
Application Number:	62115560
Application Number:	62205660

Property Type	Number	
Application Number:	62208418	

### **CORRESPONDENCE DATA**

**Fax Number:** (704)373-8822

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.

**Phone:** (704) 373-4640

**Email:** bsmith@mcguirewoods.com

Correspondent Name: BETTY G. SMITH, SENIOR PARALEGAL

Address Line 1: MCGUIREWOODS LLP, 201 N. TRYON STREET

Address Line 2: SUITE 3000

Address Line 4: CHARLOTTE, NORTH CAROLINA 28202

ATTORNEY DOCKET NUMBER:	2029724-0774
NAME OF SUBMITTER:	BETTY G. SMITH
SIGNATURE:	/Betty G. Smith/
DATE SIGNED:	11/02/2015

### **Total Attachments: 6**

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# NOTICE OF GRANT OF SECURITY INTEREST IN PATENTS

Dated as of October 1, 2015

United States Patent and Trademark Office

Ladies and Gentlemen:

Please be advised that pursuant to the Collateral Agreement dated as of October 1, 2015 (as amended, restated, supplemented or otherwise modified from time to time, the "Agreement") among the Grantor (as identified on the signature pages hereto), the other grantors party thereto and the Administrative Agent (as identified on the signature pages hereto) for the Secured Parties referenced therein, the undersigned Grantor has granted a continuing security interest in and continuing lien upon the patents and patent applications identified on Schedule A to the Administrative Agent for the ratable benefit of the Secured Parties.

The Grantor and the Administrative Agent, on behalf of the Secured Parties, hereby acknowledge and agree that the security interest in such patents and patent applications (a) may only be terminated in accordance with the terms of the Agreement and (b) is not to be construed as an assignment of any patent or patent application.

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Very truly yours,

**GRANTOR:** 

DTS, Inc. 5220 Las Virgenes Rd. Calabasas, CA 91301

JURISDICTION OF FORMATION OF GRANTOR: DELAWARE

DTS, INC.

By: Jank Kirches

Title: CHAIRMAN FCED

DTS, Inc.
Notice of Grant of Security Interest in Patents
Signature Page

Acknowledged and accepted:

### **ADMINISTRATIVE AGENT:**

Wells Fargo Bank, National Association MAC D1109-019 1525 West W.T. Harris Blvd. Charlotte, NC 28262 WELLS FARGO BANK, NATIONAL ASSOCIATION

Name: Greg Cohn

Title: Senior Vice President

DTS, Inc. Notice of Grant of Security Interest in Patents Signature Page

# SCHEDULE A TO NOTICE OF GRANT OF SECURITY INTEREST IN PATENTS

# DTS, INC.

# **PATENTS**

	Country /	Application /	Patent	Issue
Patents	U.S. State United States	Filling Date	Number 5,956,674	Date
MULTI-CHANNEL PREDICTIVE SUBBAND	United States	08/642,254 02-May-1996	3,930,074	21-Sep-1999
AUDIO CODER USING PSYCHOACOUSTIC		02-May-1990		
ADAPTIVE BIT ALLOCATION IN				
FREQUENCY, TIME AND OVER THE				
MULTIPLE CHANNELS MULTI-CHANNEL AUDIO DECODER	United States			26.0 . 1000
MULTI-CHANNEL AUDIO DECODER	United States	08/991,533	5,974,380	26-Oct-1999
DIGITALLY ENCODED MACHINE READABLE	United States	16-Dec-1997	5,978,762	02-Nov-1999
STORAGE MEDIA USING ADAPTIVE BIT	Officed States	09/085,955 28-May-1998	3,978,702	02-1101-1999
ALLOCATION IN FREQUENCY, TIME AND		20-Way-1990		
OVER MULTIPLE CHANNELS				
MULTI-CHANNEL AUDIO ENCODER	United States	09/186,234	6,487,535	26-Nov-2002
		04-Nov-1998		
SOUND QUALITY OF ESTABLISHED LOW	United States	09/337,405	6,226,616	01-May-2001
BIT-RATE AUDIO CODING SYSTEMS		21-Jun-1999		
WITHOUT LOSS OF DECODER COMPATIBILITY				
SYSTEM AND METHOD FOR PROVIDING	United States	09/432,917	6,931,370	16-Aug-2005
INTERACTIVE AUDIO IN A MULTICHANNEL	Office States	09/432,917 02-Nov-1999	0,931,370	10-Aug-2003
AUDIO ENVIRONMENT		02-N0V-1999		
DISCRETE MULTI-CHANNEL AUDIO WITH A	United States	09/568,355	7,212,872	01-May-2007
BACKWARDS COMPATIBLE MIX		10-May-2000		
METHOD OF DECODING TWO-CHANNEL	United States	09/680,737	7,003,467	21-Feb-2006
MATRIX ENCODED AUDIO TO		06-Oct-2000		
RECONSTRUCT MULTICHANNEL AUDIO	77.1.10			16.0
METHOD OF MIXING AUDIO CHANNELS	United States	10/930,659	7,283,634	16-Oct-2007
USING CORRELATED OUTPUTS		31-Aug-2004		
SCALABLE LOSSLESS AUDIO CODEC AND	United States	10/911,062	7,272,567	18-Sep-2007
AUTHORING TOOL		04-Aug-2004		
SCALABLE LOSSLESS AUDIO CODEC AND	United States	11/891,905	7,668,723	23-Feb-2010
AUTHORING TOOL		14-Aug-2007		
SCALABLE LOSSLESS AUDIO CODEC AND	United States	12/720,365	8,374,858	12-Feb-2013
AUTHORING TOOL		09-Mar-2010		
LOSSLESS MULTI-CHANNEL AUDIO CODEC	United States	10/911,067	7,392,195	24-Jun-2008
		04-Aug-2004		
MULTI-CHANNEL AUDIO	United States	12/011,899	7,930,184	19-Apr-2011
CODING/DECODING OF RANDOM ACCESS POINTS AND TRANSIENTS		30-Jan-2008		
LOSSLESS MULTI-CHANNEL AUDIO CODEC	United States	12/004,334	8,239,210	07-Aug-2012
LOSSEESS MODIFICIAINNEE AUDIO CODEC	Office States		0,239,210	07-Fing-2012
		19-Dec-2007		

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Patents	Country / U.S. State	Application / Filling Date	Patent Number	Issue Date
SYSTEM AND METHOD FOR COMPENSATING	United States	11/583.190	8,300,837 B2	30-Oct-2012
MEMORYLESS NON-LINEAR DISTORTION OF	Cinted States	18-Oct-2006	0,300,037 B2	30 001 2012
AN AUDIO TRANSDUCER		18-001-2000		
BASS ENHANCEMENT FOR AUDIO	United States	12/001,184	8,005,233	23-Aug-2011
		10-Dec-2007		
COMPRESSION OF AUDIO SCALE-FACTORS	United States	12/220,492	8,290,782	16-Oct-2012
BY TWO-DIMENSIONAL TRANSFORMATION		24-Jul-2008		
AUDIO SPATIAL ENVIRONMENT UP-MIXER	United States	11/262,029	7,853,022	14-Dec-2010
		28-Oct-2005		
AUDIO SPATIAL ENVIRONMENT ENGINE	United States	10/975,841	7,929,708	19-Apr-2011
		28-Oct-2004		
INTERAURAL TIME DELAY RESTORATION	United States	12/204,471	8233629	31-Jul-2012
SYSTEM AND METHOD		04-Sep-2008		
PARAMETRIC STEREO CONVERSION	United States	12/192,404	8,385,556	26-Feb-2013
SYSTEM AND METHOD		15-Aug-2008		
TEMPORALLY-ACCURATE WATERMARK	United States	12/001,851	8,099,285	17-Jan-2012
SYSTEM AND METHOD OF OPERATION		13-Dec-2007		
VIRTUAL AUDIO PROCESSING FOR	United States	12/762,915	8,000,485	16-Aug-2011
LOUDSPEAKER OR HEADPHONE PLAYBACK		19-Apr-2010		
ADAPTIVE DYNAMIC RANGE	United States	12/901,330	8,879,750	04-Nov-2014
ENHANCEMENT OF AUDIO RECORDINGS		08-Oct-2010		
SPATIAL AUDIO ENCODING AND	United States	13/021,922	8,908,874	09-Dec-2014
REPRODUCTION		07-Feb-2011		
SPATIAL AUDIO ENCODING AND	United States	13/228,336	9,042,565	26-May-2015
REPRODUCTION OF DIFFUSE SOUND		08-Sep-2011		
ROOM CHARACTERIZATION AND	United States	13/103,809	9,031,268	12-May-2015
CORRECTION FOR MULTI-CHANNEL AUDIO		09-May-2011		
LISTENER SPECIFIC AUDIO REPRODUCTION	United States	11/032,367	7,564,979	21-Jul-2009
SYSTEM		08-Jan-2005		
HEARING ADJUSTMENT APPLIANCE FOR	United States	10/681,718	7,190,795	13-Mar-2007
ELECTRONIC AUDIO EQUIPMENT		08-Oct-2003		

# PATENT APPLICATIONS

Patent Application Title	Country / U.S. State	Application Number	Filing Date
SPATIAL AUDIO ENCODING AND REPRODUCTION OF DIFFUSE SOUND	United States	14/720,605	22-May-2015
DYNAMIC COMPENSATION OF AUDIO SIGNALS FOR IMPROVED PERCEIVED SPECTRAL IMBALANCES	United States	13/228,272	08-Sept-2011
ENCODING AND REPRODUCTION OF THREE DIMENSIONAL AUDIO SOUNDTRACKS	United States	14/026,984	06-Dec-2013
ROOM CHARACTERIZATION AND CORRECTION FOR MULTI-CHANNEL AUDIO	United States	14/690,935	20-Apr-2015
DIRECT-DIFFUSE DECOMPOSITION	United States	13/612,543	12-Sep-2012
AUDIO DEPTH DYNAMIC RANGE ENHANCEMENT	United States	13/834,743	15-Mar-2013
DIRECTIONAL BASED AUDIO RESPONSE TO AN EXTERNAL ENVIRONMENT EMERGENCY SIGNAL	United States	13/858,815	08-Apr-2013

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	Country/	Application	
Patent Application Title	U.S. State	Number	Filing Date
SYSTEM AND METHOD FOR ESTIMATING A	United States	13/922,472	20-Jun-2013
REVERBERATION TIME			
SCALABLE CODE EXCITED LINEAR	United States	13/606,918	07-Sep-2012
PREDICTION BITSTREAM			
LOUDNESS CONTROL WITH NOISE	United States	13/838,697	15-Mar-2013
DETECTION AND LOUDNESS DROP			
DETECTION			
RECONSTRUCTION OF A HIGH FREQUENCY	United States	14/084,479	19-Nov-2013
RANGE IN LOW BIT-RATE AUDIO CODING			
USING PREDICTIVE PATTERN ANALYSIS			
SYSTEM AND METHOD FOR VARIABLE	United States	14/138,786	23-Dec-2013
DECORRELATION OF AUDIO SIGNALS			
SYSTEMS AND METHODS OF FREQUENCY	United States	13/727,421	26-Dec-2012
RESPONSE CORRECTION FOR CONSUMER			
ELECTRONIC DEVICES	**	1.1000000	
AUTOMATIC MULTI-CHANNEL MUSIC MIX	United States	14/206,868	12-Mar-2014
FROM MULTIPLE AUDIO STEMS	TT 1: 10: :	1.4400.706	06.15 2014
POST-ENCODING BITRATE REDUCTION OF	United States	14/199,706	06-Mar-2014
MULTIPLE OBJECT AUDIO	TT ': 10: :	1.4/222.000	15 1 1 2014
SPATIAL CALIBRATION OF SURROUND	United States	14/332,098	15-Jul-2014
SOUND SYSTEMS INCLUDING LISTENER  POSITION ESTIMATION			
POSITION ESTIMATION  MATRIX DECODER WITH CONSTANT-POWER	United States	14/447,516	30-Jul-2014
PAIRWISE PANNING	Officed States	14/447,310	30-Jul-2014
METHOD AND APPARATUS FOR	United States	14/091,112	26-Nov-2013
PERSONALIZED AUDIO VIRTUALIZATION	Office States	17/091,112	20-1101-2013
MULTIPLET-BASED MATRIX MIXING FOR	United States	14/555,324	26-Nov-2014
HIGH-CHANNEL COUNT MULTICHANNEL	Office States	14/333,324	201101 2014
AUDIO			
OBJECT-BASED AUDIO LOUDNESS	United States	14/632,997	26-Feb-2015
MANAGEMENT	Omica otates	1 1/032,557	201002013
RESIDUAL ENCODING IN AN OBJECT-BASED	United States	14/620,544	12-Feb-2015
AUDIO SYSTEM		,	
DIGITAL AUDIO FILTERS FOR VARIABLE	United States	14/506,187	03-Oct-2014
SAMPLE RATES			
SYSTEM AND METHOD FOR PERFORMING	United States	62/099,892	05-Jan-2015
HEARING TEST AND ESTIMATING			
ENVIRONMENTAL NOISE IN			
MEASUREMENTS			
SYSTEM AND METHOD FOR CAPTURING	United States	62/110211	30-Jan-2015
AND ENCODING A 3-D AUDIO SOUNDFIELD			
MULTI-RATE SYSTEM FOR AUDIO	United States	14/824,998	12-Aug-2015
PROCESSING			
MULTI-RATE SYSTEM FOR ARBITRARY	United States	62/115,560	12-Feb-2015
AUDIO PROCESSING			
BASS MANAGEMENT FOR OBJECT-BASED	United States	62/205,660	14-Aug-2015
AUDIO			
MULTI-SPEAKER METHOD AND APPARATUS	United States	62/208,418	21-Aug-2015
FOR LEAKAGE CANCELLATION			

**RECORDED: 11/02/2015**