

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5681754

SUBMISSION TYPE:	CORRECTIVE ASSIGNMENT
NATURE OF CONVEYANCE:	Corrective Assignment to correct the SCHEDULE previously recorded on Reel 049035 Frame 0939. Assignor(s) hereby confirms the FIRST SUPPLEMENT TO PATENT SECURITY AGREEMENT.
CONVEYING PARTY DATA	
Name	Execution Date
GENBAND US LLC	04/29/2019
RIBBON COMMUNICATIONS OPERATING COMPANY, INC., FORMERLY KNOWN AS SONUS NETWORKS, INC.	04/29/2019
RECEIVING PARTY DATA	
Name:	SILICON VALLEY BANK, AS ADMINISTRATIVE AGENT
Street Address:	3003 TASMAN DRIVE
Internal Address:	HF 150
City:	SANTA CLARA
State/Country:	CALIFORNIA
Postal Code:	95054
PROPERTY NUMBERS Total: 93	
Property Type	Number
Patent Number:	7522606
Patent Number:	6259328
Patent Number:	6356156
Patent Number:	7512077
Patent Number:	7177162
Patent Number:	8379526
Patent Number:	7085830
Patent Number:	7885659
Patent Number:	8224333
Patent Number:	7617327
Patent Number:	7650415
Patent Number:	7669059
Patent Number:	7017102
Patent Number:	7146556
Patent Number:	7017038
Patent Number:	7697513

Property Type	Number
Patent Number:	7706253
Patent Number:	8380167
Patent Number:	7239612
Patent Number:	7349406
Patent Number:	7403986
Patent Number:	6721229
Patent Number:	7415028
Patent Number:	7436946
Patent Number:	7460536
Patent Number:	7415627
Patent Number:	7889638
Patent Number:	7936691
Patent Number:	7856583
Patent Number:	7839887
Patent Number:	7907599
Patent Number:	6675340
Patent Number:	7411917
Patent Number:	8743871
Patent Number:	8750827
Patent Number:	9888033
Patent Number:	9887923
Patent Number:	9900291
Patent Number:	9949172
Patent Number:	9961118
Patent Number:	9967355
Patent Number:	9973529
Patent Number:	6768717
Patent Number:	9992646
Patent Number:	9906463
Patent Number:	9900351
Patent Number:	9894700
Patent Number:	9894104
Patent Number:	9871829
Patent Number:	9866610
Patent Number:	9769855
Patent Number:	10007925
Patent Number:	10009313
Patent Number:	10015212

Property Type	Number
Patent Number:	10033770
Patent Number:	10063616
Patent Number:	10078635
Patent Number:	10080118
Patent Number:	10110643
Patent Number:	10140146
Patent Number:	10255094
Patent Number:	10257368
Patent Number:	10263930
Application Number:	15803435
Application Number:	15821475
Application Number:	15835392
Application Number:	15882571
Application Number:	15965164
Application Number:	16147829
Application Number:	13609083
Application Number:	10225290
Application Number:	10225353
Application Number:	10182159
Application Number:	10171513
Application Number:	10171514
Application Number:	10165014
Application Number:	10165122
Application Number:	16256040
Application Number:	15905450
Application Number:	15896576
Application Number:	15851353
Application Number:	15708988
Application Number:	15530695
Application Number:	15431285
Application Number:	14144579
Application Number:	10044774
Application Number:	10129163
Application Number:	10129300
Application Number:	10142466
Application Number:	10148636
Application Number:	10205753
Application Number:	10205757

Property Type	Number
Application Number:	10206146

CORRESPONDENCE DATA

Fax Number: (800)494-7512

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: 202-370-4756

Email: ipteam@cogencyglobal.com

Correspondent Name: JAY DASILVA

Address Line 1: 1025 VERMONT AVE NW, SUITE 1130

Address Line 2: COGENCY GLOBAL INC.

Address Line 4: WASHINGTON, D.C. 20005

ATTORNEY DOCKET NUMBER:	1075942 1ST SUPP PAT CORR
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NAME OF SUBMITTER:	JUDI EHRLICH
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SIGNATURE:	/Judi Ehrlich/
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DATE SIGNED:	08/22/2019
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Total Attachments: 21

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PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT5499498

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	FIRST SUPPLEMENT TO SECURITY AGREEMENT
CONVEYING PARTY DATA	
Name	Execution Date
GENBAND US LLC	04/29/2019
RIBBON COMMUNICATIONS OPERATING COMPANY, INC., FORMERLY KNOWN AS SONUS NETWORKS, INC.	04/29/2019
RECEIVING PARTY DATA	
Name:	SILICON VALLEY BANK, AS ADMINISTRATIVE AGENT
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Application Number:	15803435
Application Number:	15821475
Application Number:	15835392
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Application Number:	15965164
Application Number:	16147829
Application Number:	10263930
Application Number:	10257368
Application Number:	10255094
Application Number:	13609083
Application Number:	10225290
Application Number:	10225353
Application Number:	10182159
Application Number:	10171513
Application Number:	10171514
Application Number:	10165014
Application Number:	10165122
Application Number:	10140146

PATENT

REEL: 050705 FRAME: 0005

FIRST SUPPLEMENT TO PATENT SECURITY AGREEMENT

This First Supplement to Patent Security Agreement (this “*Supplement*”) is made as of April 29, 2019, by and among **GENBAND US LLC**, a Delaware limited liability company, **RIBBON COMMUNICATIONS OPERATING COMPANY, INC.**, formerly known as Sonus Networks, Inc., a Delaware corporation (each and together, jointly and severally, the “*Grantor*”), and **SILICON VALLEY BANK**, as Administrative Agent for itself and other secured parties (in such capacity, the “*Assignee*”).

WHEREAS, Grantor executed and delivered a Patent Security Agreement, dated December 29, 2017 and recorded on January 2, 2018 at Reel 044978, Frame 0801 (as amended of record from time to time hereinafter, the “*Agreement*”) in favor of the Assignee, pursuant to which Grantor pledged, assigned and granted a security interest in certain Patents (as defined therein); and

WHEREAS, Grantor developed or acquired additional Patents and desires to hereby confirm the pledge of, and the grant of a security interest in, such additional Patents in favor of the Assignee.

NOW, THEREFORE, in consideration of the mutual covenants herein contained and benefits to be derived herefrom, it is hereby agreed as follows:

1. Definitions. All capitalized terms herein and not otherwise defined shall have the same meaning herein as in the Agreement.
2. Supplement to Schedule A. Schedule A to the Agreement is hereby supplemented, but not replaced, by Schedule A-1 annexed hereto.
3. Miscellaneous:
 - a. Except as provided herein, all terms and conditions of the Agreement remain in full force and effect. Grantor hereby ratifies, confirms and reaffirms all of the Secured Obligations contained therein.
 - b. This Supplement and the Agreement cover the entire understanding of the parties with respect to the matters set forth herein and supersede all prior discussions and negotiations hereon.
 - c. THIS SUPPLEMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES HEREUNDER SHALL BE GOVERNED BY, AND SHALL BE CONSTRUED AND INTERPRETED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK.
 - d. This Supplement may be executed by one or more of the parties to this Supplement on any number of separate counterparts, and all of said counterparts

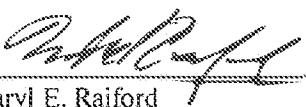
taken together shall be deemed to constitute one and the same instrument. Delivery of an executed signature page of this Supplement by electronic transmission shall be equally effective as delivery of an original executed counterpart hereof.

[signature pages follow]

IN WITNESS WHEREOF, the undersigned has executed this Supplement as of the date first written above.

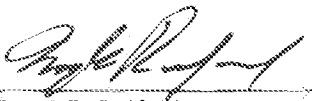
GRANTOR:

RIBBON COMMUNICATIONS OPERATING COMPANY, INC.

By: 
Name: Daryl E. Raiford
Title: President and Chief Executive Officer

GRANTOR:

GENBAND US LLC

By: 
Name: Daryl E. Raiford
Title: President and Chief Executive Officer

Signature Page to First Supplement to Patent Security Agreement

PATENT
REEL: 050705 FRAME: 0009

ACKNOWLEDGED AND ACCEPTED

SILICON VALLEY BANK,
as Administrative Agent

By: Will Deevy
Name: Will Deevy
Title: Director

SCHEDULE A-1

PATENTS

Ribbon Communications Operating Company, Inc. - Patents and Patent Applications

	<u>Owner</u>	<u>Title</u>	<u>Application Number / Patent Number</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
1.	Ribbon Communications Operating Company, Inc.	PASSIVE PACKET RE-ORDERING AND PACKET LOSS DETECTION	7,522,606	US	4 /21/2009
2.	Ribbon Communications Operating Company, Inc.	METHOD AND SYSTEM FOR MANAGING REFERENCE SIGNALS FOR NETWORK CLOCK SYNCHRONIZATION	6,259,328	US	7 /10/2001
3.	Ribbon Communications Operating Company, Inc.	METHOD AND SYSTEM FOR MANAGING REFERENCE SIGNALS FOR NETWORK CLOCK SYNCHRONIZATION	6,356,156	US	3 /12/2002
4.	Ribbon Communications Operating Company, Inc.	COMPENSATION FOR INDEPENDENT CLOCKS IN RELAYED COMMUNICATION OVER PACKET-BASED NETWORKS	7,512,077	US	3 /31/2009
5.	Ribbon Communications Operating Company, Inc.	ENCLOSURE FOR A NETWORK COMMUNICATIONS MODULE	7,177,162	US	2 /13/2007
6.	Ribbon Communications Operating Company, Inc.	AUTOMATIC DETECTION AND PROCESSING OF ASYNCHRONOUS DATA FOR BANDWIDTH REDUCTION	8,379,526	US	2/19/2013

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	<u>Owner</u>	<u>Title</u>	<u>Application Number / Patent Number</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
7.	Ribbon Communications Operating Company, Inc.	SYSTEM AND METHOD TO MANAGE INCONSISTENCY PROBLEMS BETWEEN NETWORK MANAGEMENT SYSTEMS AND NETWORK ELEMENTS	7,085,830	US	8 /1 /2006
8.	Ribbon Communications Operating Company, Inc.	LAN-BASED UMA NETWORK CONTROLLER WITH LOCAL SERVICES SUPPORT	7,885,659	US	2 /8 /2011
9.	Ribbon Communications Operating Company, Inc.	LAN-BASED UMA NETWORK CONTROLLER WITH AGGREGATED TRANSPORT	8,224,333	US	7 /17/2012
10.	Ribbon Communications Operating Company, Inc.	METHOD AND SYSTEM FOR IMPLEMENTING EXTERNAL APPLICATIONS USING REMOTE SOCKET APPLICATION PROGRAMMING INTERFACE FOR VIRTUAL ROUTERS	7,617,327	US	11/10/2009
11.	Ribbon Communications Operating Company, Inc.	GATEWAY FOR CONVERSION OF MESSAGES BETWEEN MULTIPLE PROTOCOLS USING SEPARATE SESSIONS	7,650,415	US	1 /19/2010
12.	Ribbon Communications Operating Company, Inc.	METHOD AND APPARATUS FOR DETECTION OF HOSTILE SOFTWARE	7,669,059	US	2 /23/2010
13.	Ribbon Communications Operating Company, Inc.	FORWARD ERROR CORRECTION (FEC) FOR PACKETIZED DATA NETWORKS	7,017,102	US	3 /21/2006
14.	Ribbon Communications	STRUCTURED DATA COMMUNICATION WITH BACKWARDS COMPATABILITY	7,146,556	US	12/5 /2006

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	<u>Owner</u>	<u>Title</u>	<u>Application Number / Patent Number</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
	Operating Company, Inc.				
15.	Ribbon Communications Operating Company, Inc.	METHOD AND SYSTEM TO PROVIDE FIRST BOOT TO A CPU SYSTEM	7,017,038	US	3 /21/2006
16.	Ribbon Communications Operating Company, Inc.	PRIVATE BRANCH EXCHANGE (PBX) NETWORKING OVER IP NETWORKS	7,697,513	US	4 /13/2010
17.	Ribbon Communications Operating Company, Inc.	GATEWAY TO ROUTE COMMUNICATIONS DURING A FAULT	7,706,253	US	4 /27/2010
18.	Ribbon Communications Operating Company, Inc.	LAN-BASED UMA NETWORK CONTROLLER WITH PROXY CONNECTION	8,380,167	US	2/19/2013
19.	Ribbon Communications Operating Company, Inc.	METHOD AND APPARATUS FOR DISCARDING A PRIORITIZED FAIR SHARE OF TRAFFIC OF NETWORK CONNECTIONS	7,239,612	US	7/3/2007
20.	Ribbon Communications Operating Company, Inc.	METHOD AND APPARATUS FOR VIRTUAL NETWORK CONNECTION MERGING	7,349,406	US	3 /25/2008
21.	Ribbon Communications Operating Company, Inc.	METHOD FOR SYNCHRONIZING CIRCUIT RELATED OBJECTS BETWEEN NETWORK MANAGEMENT SYSTEMS AND NETWORK CONTROL PROCESSORS	7,403,986	US	7 /22/2008

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<u>Owner</u>	<u>Title</u>	<u>Application Number / Patent Number</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
22. Ribbon Communications Operating Company, Inc.	METHOD AND APPARATUS FOR USING SDRAM TO READ AND WRITE DATA WITHOUT LATENCY	6,721,229	US	4 /13/2004
23. Ribbon Communications Operating Company, Inc.	METHOD AND SYSTEM FOR OPTIMIZING ROUTING TABLE CHANGES DUE TO ARP CACHE INVALIDATION IN ROUTERS WITH SPLIT PLANE ARCHITECTURE	7,415,028	US	8 /19/2008
24. Ribbon Communications Operating Company, Inc.	RELIABLE CALL PROGRESS INDICATION FOR SIP	7,436,946	US	10/14/2008
25. Ribbon Communications Operating Company, Inc.	USER AND SESSION IDENTIFICATION BASED ON CONNECTIONS, PROTOCOLS AND PROTOCOL FIELDS	7,460,536	US	12/2 /2008
26. Ribbon Communications Operating Company, Inc.	PARTITIONING AND CATEGORIZING DATA IN A SPLIT-PLANE ARCHITECTURE FOR FAST RECOVERY FROM DATA PLANE FAILURES AND FAST RESTARTS	7,415,627	US	8 /19/2008
27. Ribbon Communications Operating Company, Inc.	PRESERVATION OF A PPP SESSION IN A REDUNDANT SYSTEM	7,889,638	US	2 /15/2011
28. Ribbon Communications Operating Company, Inc.	REPLICATION OF STATIC AND DYNAMIC DATABASES IN NETWORK DEVICES	7,936,691	US	5 /3 /2011
29. Ribbon Communications	TECHNIQUES FOR ENHANCED RELIABILITY OF DATA TRANSFER WITH	7,856,583	US	12/21/2010

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	<u>Owner</u>	<u>Title</u>	<u>Application Number / Patent Number</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
	Operating Company, Inc.	DYNAMIC SCALING			
30.	Ribbon Communications Operating Company, Inc.	METHOD AND SYSTEM FOR PROVIDING FRAME RATE ADAPTION	7,839,887	US	11/23/2010
31.	Ribbon Communications Operating Company, Inc.	DETERMINATION OF SIP TRANSPORT TO REDUCE CALL SETUP DELAYS	7,907,599	US	3/15/2011
32.	Ribbon Communications Operating Company, Inc.	FORWARD ERROR CORRECTION (FEC) FOR PACKETIZED DATA NETWORKS	6,675,340	US	1/6/2004
33.	Ribbon Communications Operating Company, Inc.	METHOD AND SYSTEM FOR PROVIDING REGISTRATION-BASED SIP NAT TRAVERSAL	7,411,917	US	8/12/2008
34.	Ribbon Communications Operating Company, Inc.	MEDIA IDENTIFICATION, CLASSIFICATION, FORWARDING, AND MANAGEMENT FOR VOICE AND VIDEO COMMUNICATIONS	8,743,871	US	6/3/2014
35.	Ribbon Communications Operating Company, Inc.	LAN-BASED UMA NETWORK CONTROLLER WITH AGGREGATED TRANSPORT	8,750,827	US	6/10/2014
36.	Ribbon Communications Operating Company, Inc.	METHODS AND APPARATUS FOR DETECTING AND/OR DEALING WITH DENIAL OF SERVICE ATTACKS	9,888,033	US	2/6/2018

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	<u>Owner</u>	<u>Title</u>	<u>Application Number / Patent Number</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
37.	Ribbon Communications Operating Company, Inc.	OPPORTUNISTIC WIRELESS RESOURCE UTILIZATION USING DYNAMIC TRAFFIC SHAPING	9,887,923	US	2/6/2018
38.	Ribbon Communications Operating Company, Inc.	METHODS AND APPARATUS FOR SYNCHRONIZING DECRYPTION STATE WITH REMOTE ENCRYPTION STATE	9,900,291	US	2/20/2018
39.	Ribbon Communications Operating Company, Inc.	Techniques for Handout of an Active Session from a First Network to a Second Network	9,949,172	US	4/17/2018
40.	Ribbon Communications Operating Company, Inc.	COMMUNICATIONS METHODS, APPARATUS AND SYSTEMS FOR CORRELATING REGISTRATIONS, SERVICE REQUESTS AND CALLS	9,961,118	US	5/1/2018
41.	Ribbon Communications Operating Company, Inc.	METHODS AND APPARATUS FOR AGGREGATING AND DISTRIBUTING CONTACT AND PRESENCE INFORMATION	9,967,355	US	5/8/2018
42.	Ribbon Communications Operating Company, Inc.	COMMUNICATIONS METHODS, SYSTEMS AND APPARATUS FOR PROTECTING AGAINST DENIAL OF SERVICE ATTACKS	9,973,529	US	5/15/2018
43.	Ribbon Communications Operating Company, Inc.	METHODS AND APPARATUS FOR AGGREGATING AND DISTRIBUTING PRESENCE INFORMATION	10,044,774	US	8/7/2018
44.	Ribbon Communications	METHODS AND APPARATUS FOR PREVENTING HEAD OF LINE BLOCKING	10,129,163	US	11/13/2018

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	<u>Owner</u>	<u>Title</u>	<u>Application Number / Patent Number</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
	Operating Company, Inc.	FOR RTP OVER TCP			
45.	Ribbon Communications Operating Company, Inc.	COMMUNICATIONS METHODS, APPARATUS AND SYSTEMS FOR CONSERVING MEDIA RESOURCE FUNCTION RESOURCES	10,129,300	US	11/13/2018
46.	Ribbon Communications Operating Company, Inc.	SYSTEMS AND METHODS FOR SPECIAL CALLED NUMBER CALL HANDLING	10,142,466	US	11/27/2018
47.	Ribbon Communications Operating Company, Inc.	AUTHENTICATION METHODS AND APPARATUS	10,148,636	US	12/04/2018
48.	Ribbon Communications Operating Company, Inc.	METHODS, APPARATUS AND SYSTEMS TO INCREASE MEDIA RESOURCE FUNCTION AVAILABILITY	10,205,753	US	2/12/2019
49.	Ribbon Communications Operating Company, Inc.	COMMUNICATIONS METHODS, APPARATUS AND SYSTEMS FOR CORRELATING REGISTRATIONS, SERVICE REQUESTS AND CALLS	10,205,757	US	2/12/2019
50.	Ribbon Communications Operating Company, Inc.	TECHNIQUES FOR HANDOUT OF AN ACTIVE SESSION FROM A FIRST NETWORK TO A SECOND NETWORK	10,206,146	US	2/12/2019
51.	Ribbon Communications Operating Company, Inc.	FAIR DISCARD SYSTEM	146766	IL	4/1/2007

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	<u>Owner</u>	<u>Title</u>	<u>Application Number / Patent Number</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
52.	Ribbon Communications Operating Company, Inc.	APPARATUS AND METHOD FOR TRAFFIC SHAPING IN A NETWORK SWITCH	146767	IL	8/16/2007
53.	Ribbon Communications Operating Company, Inc.	BI-MODAL CONTROL SYSTEM AND METHOD FOR PARTITIONING A SHARED OUTPUT BUFFER IN A CONNECTION-ORIENTED NETWORK CONNECTIONS DEVICE	146765	IL	8/16/2007
54.	Ribbon Communications Operating Company, Inc.	SYSTEM AND METHOD OF MOBILITY MANAGEMENT IN A MOBILE COMMUNICATIONS NETWORK HAVING A PROXY SWITCH	60147216	DE	10/10/2012
55.	Ribbon Communications Operating Company, Inc.	SYSTEM AND METHOD OF SIPHONING MESSAGES FROM A MOBILE NETWORK TO AN ALTERNATIVE NETWORK	60125587.9	DE	12/27/2006
56.	Ribbon Communications Operating Company, Inc.	METHOD AND APPARATUS FOR SYNCHRONIZED TRANSPORT OF DATA THROUGH AN ASYNCHRONOUS MEDIUM	1665597	DE	12/22/2010
57.	Ribbon Communications Operating Company, Inc.	LOGICAL TRUNK GROUPS IN A PACKET-BASED NETWORK	1850541	DE	8/31/2011
58.	Ribbon Communications Operating Company, Inc.	A METHOD AND SYSTEM FOR REGISTERING AN UNLICENSED MOBILE ACCESS SUBSCRIBER WITH A NETWORK CONTROLLER	1741238	DE	5/19/2010
59.	Ribbon Communications	RELEASING RADIO RESOURCES IN AN UNLICENSED MOBILE ACCESS	1749372	DE	12/8/2010

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	<u>Owner</u>	<u>Title</u>	<u>Application Number / Patent Number</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
	Operating Company, Inc.	TELECOMMUNICATIONS SYSTEM			
60.	Ribbon Communications Operating Company, Inc.	MESSAGING IN AN UNLICENSED MOBILE ACCESS NETWORK	2293640	DE	7/25/2012
61.	Ribbon Communications Operating Company, Inc.	MESSAGING IN AN UNLICENSED MOBILE ACCESS NETWORK	2293641	DE	7/11/2012
62.	Ribbon Communications Operating Company, Inc.	MESSAGES FOR INTERWORKING BETWEEN UNLICENSED ACCESS NETWORK AND GPRS NETWORK FOR DATA SERVICES	1749371	DE	7/20/2011
63.	Ribbon Communications Operating Company, Inc.	GENERIC ACCESS TO THE IU INTERFACE	2044715	DE	10/5/2011
64.	Ribbon Communications Operating Company, Inc.	LAN-BASED UMA NETWORK CONTROLLER WITH AGGREGATED TRANSPORT	60 2006 044 256.4	DE	1/7/2015
65.	Ribbon Communications Operating Company, Inc.	ADAPTIVE RATE CONTROL BASED ON OVERLOAD SIGNALS	60 2010 049 990.1	DE	4/18/2018
66.	Ribbon Communications Operating Company, Inc.	APPARATUS AND METHOD FOR TRAFFIC SHAPING IN A NETWORK SWITCH	6768717	US	7/27/2004

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	<u>Owner</u>	<u>Title</u>	<u>Application Number / Patent Number</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
67.	Ribbon Communications Operating Company, Inc.	COMMUNICATIONS METHODS AND APPARATUS	15803435	US	11/3/2017
68.	Ribbon Communications Operating Company, Inc.	METHODS AND APPARATUS FOR LOAD BALANCING IN SDN NETWORKS	15821475	US	11/22/2017
69.	Ribbon Communications Operating Company, Inc.	METHODS AND APPARATUS FOR DETECTING AND/OR DEALING WITH DENIAL OF SERVICE ATTACKS	15835392	US	12/7/2017
70.	Ribbon Communications Operating Company, Inc.	COMMUNICATIONS METHODS, AND APPARATUS AND SYSTEMS FOR PROVIDING SCALABLE MEDIA SERVICES IN SDN SYSTEMS	15882571	US	1/29/2018
71.	Ribbon Communications Operating Company, Inc.	COMMUNICATIONS METHODS, SYSTEMS AND APPARATUS FOR PROTECTING AGAINST DENIAL OF SERVICE ATTACKS	15965164	US	4/27/2018
72.	Ribbon Communications Operating Company, Inc.	COMMUNICATIONS METHODS, AND APPARATUS AND SYSTEMS FOR CONSERVING MEDIA RESOURCE FUNCTION RESOURCES	16147829	US	9/30/2018

US-DOCS\107416656.2

GENBAND US LLC - Patents and Patent Applications

	<u>Owner</u>	<u>Application Number / Patent Number</u>	<u>Title</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
1.	Genband US LLC	10263930	System and Method for Blocking Notification Messages During Screen Sharing	United States of America	4/16/2019
2.	Genband US LLC	10257368	System And Method For Communication Between Mobile Devices	United States of America	4/9/2019
3.	Genband US LLC	10255094	Utilizing Physical Systems and Virtual Systems for Virtual Network Functions	United States of America	4/9/2019
4.	Genband US LLC	13/609,083	Managing Telecommunication Services using Proximity-based Technologies	United States of America	9/10/2012 (filed)
5.	Genband US LLC	10225290	Systems and Methods for Extending DSP Capability of Existing Computing Devices	United States of America	3/5/2019
6.	Genband US LLC	10225353	Shared Bearer Node Resources For Control Nodes For Distributed Telecommunication Systems	United States of America	3/5/2019
7.	Genband US LLC	US10182159	Configuration of Shared Trunk Groups in an IP Telephony Network	United States of America	1/15/2019
8.	Genband US LLC	US10171513	METHODS AND APPARATUS FOR CONTROLLING CALL ADMISSION TO A NETWORK BASED ON NETWORK RESOURCES	United States of America	1/1/2019

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	<u>Owner</u>	<u>Application Number / Patent Number</u>	<u>Title</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
9.	Genband US LLC	US10171514	METHOD AND SYSTEM FOR ROUTING MEDIA CALLS OVER REAL TIME SWITCHED CONNECTION	United States of America	1/1/2019
10.	Genband US LLC	US10165014	Methods, Systems, and Computer Readable Media for a Distributed Model Architecture (DCMA) in a Session Over Internet Protocol (SOIP) Network	United States of America	12/25/2018
11.	Genband US LLC	US10165122	Centrally Provided Interactive Call Menu For A Call Structure	United States of America	12/25/2018
12.	Genband US LLC	10140146	Network Management For Elastic Virtual Network Functions	United States of America	11/27/2018
13.	Genband US LLC	10110643	Common Media Platform For Various Distributed Telecommunication Components	United States of America	10/23/2018
14.	Genband US LLC	US10078635	Systems And Methods For Customizing SIP Message Processing	United States of America	9/18/2018
15.	Genband US LLC	US10080118	Methods, Systems, and Computer Readable Media for Managing Associations Between Users in Multiple Over-The-Top Service Platforms	United States of America	9/18/2018
16.	Genband US LLC	US10033770	Systems And Methods For Processing SIP Message Flows	United States of America	7/24/2018

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17.	Genband US LLC	US10015212	Asynchronous Collaboration Session Linked To A Synchronous Collaboration Session	United States of America	7/3/2018
18.	Genband US LLC	US10007925 B2	Local Advertisement Insertion Through Web Request Redirection	United States of America	6/26/2018
19.	Genband US LLC	US9992646	Method for performing configurable actions based upon mobile device detection	United States of America	6/5/2018
20.	Genband US LLC	10063616	Automated URL transmission to enable multimedia services	United States of America	10/17/2014 (filed)
21.	Genband US LLC	US10009313 B2	METHODS, SYSTEMS, AND COMPUTER READABLE MEDIA FOR MANAGING MULTIPLE PERSONAS WITHIN USER END APPLICATIONS	United States of America	6/26/2018
22.	Genband US LLC	US9906463	Method and System for Intelligent Network Edge Traffic and Signaling Management	United States of America	2/27/2018
23.	Genband US LLC	US9900351 B2	Methods, Systems, and Computer Readable Media for Providing Legacy Devices Access to a Session Initiation Protocol (SIP) Based Network	United States of America	2/20/2018
24.	Genband US LLC	US9894700 B2	Direct Routing of Communication Sessions for Mobile IP Communication End Points	United States of America	2/13/2018

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	<u>Owner</u>	<u>Application Number / Patent Number</u>	<u>Title</u>	<u>Jurisdiction</u>	<u>Filing Date / Issue Date</u>
25.	Genband US LLC	US9894104	Systems and Methods for Providing Context to SIP Messages	United States of America	2/13/2018
26.	Genband US LLC	US9871829 B2	Voice Over Ip (Voip) Network Infrastructure Components And Method	United States of America	1/16/2018
27.	Genband US LLC	US9866610 B2	Methods, Systems, and Computer Readable Media for Selecting a Codec Pair Based on Network Conditions	United States of America	1/9/2018
28.	Genband US LLC	16/256,040	Shared Bearer Node Resources For Control Nodes For Distributed Telecommunication Systems	United States of America	1/24/2019
29.	Genband US LLC	15/905,450	Toggleing Enhanced Mode For A CodeC	United States of America	2/26/2018
30.	Genband US LLC	15/896,576	System, Methods, and Computer Program Products For Selecting Codec Parameters	United States of America	2/14/2018
31.	Genband US LLC	15/851,353	Hybrid Distributed Communication	United States of America	12/21/2017
32.	Genband US LLC	15/708,988	Mesh Architecture for distributed Telecommunication Systems	United States of America	9/19/2017
33.	Genband US LLC	15/530,695	NETWORK DOMAIN SELECTION	United States of America	6/26/2017
34.	Genband US LLC	15/431,285	Systems, Methods and Computer Program Products for Computer Resource Node	United States of America	2/13/2017

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			Management		
35.	Genband US LLC	14/144,579	Mobility in Enterprise Networks	United States of America	12/31/2013
36.	Genband US LLC	US9769855	Mobility in enterprise networks	United States of America	9/19/2017

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