TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

ETAS ID: TM316038

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	Intellectual Property Security Agreement

CONVEYING PARTY DATA

Name	Formerly	Execution Date	Entity Type
CAMBRIDGE BROADBAND NETWORKS LIMITED		09/03/2014	COMPANY: UNITED KINGDOM

RECEIVING PARTY DATA

Name:	SILICON VALLEY BANK
Street Address:	3003 TASMAN DRIVE
City:	SANTA CLARA
State/Country:	CALIFORNIA
Postal Code:	95054
Entity Type:	CORPORATION: CALIFORNIA

PROPERTY NUMBERS Total: 1

Property Type	Number	Word Mark
Serial Number:	77863869	VECTASTAR

CORRESPONDENCE DATA

Fax Number: 8004947512

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: 202-370-4750
Email: ipteam@nationalcorp.com
Correspondent Name: Joanna McCall
Address Line 1: 1025 Vermont Ave NW, Suite 1130
Address Line 2: National Corporate Research, Ltd.
Address Line 4: Washington, D.C. 20005

OP $40.00 77863869

ATTORNEY DOCKET NUMBER:	F151542
NAME OF SUBMITTER:	ANDREW NASH
SIGNATURE:	/ANDREW NASH/
DATE SIGNED:	09/04/2014

Total Attachments: 12
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INTELLECTUAL PROPERTY SECURITY AGREEMENT

This Intellectual Property Security Agreement ("Agreement") is entered into as of September 3, 2014 by and between **SILICON VALLEY BANK**, a California corporation with its principal place of business at 3003 Tasman Drive, Santa Clara, California 95054 with a loan production office located at 275 Grove Street, Suite 2-200, Newton, Massachusetts 02466 ("Bank") and **CAMBRIDGE BROADBAND NETWORKS LIMITED**, a company registered under the laws of England and Wales under company number 03879840 whose registered office is at Selwyn House, Cambridge Business Park, Cowley Road, Cambridge CB4 0WZ ("Grantor").

RECITALS

A. Bank has agreed to make certain advances of money and to extend certain financial accommodations to Grantor (the "Loans") in the amounts and manner set forth in that certain Loan Agreement by and between Bank and Grantor dated as of May 31, 2012 (as the same has been and may be further amended, modified, restated, or supplemented from time to time, the "Loan Agreement"). Bank is willing to make the Loans, but only upon the condition, among others, that Grantor shall grant to Bank a security interest in its Copyrights, Trademarks, Patents, and Mask Works (as each term is described below) to secure the obligations of Grantor to Bank.

B. Pursuant to the terms of the Loan Agreement and the Mortgage Debenture (as defined in the Loan Agreement and as hereinafter used), Grantor has granted to Bank a security interest in all of Grantor's right, title and interest, whether presently existing or hereafter acquired, in, to and under all of the Collateral (as defined in the Loan Agreement).

NOW, THEREFORE, for good and valuable consideration, receipt of which is hereby acknowledged, and intending to be legally bound, as collateral security for the prompt and complete payment when due of all obligations of Grantor to Bank, Grantor hereby represents, warrants, covenants and agrees as follows:

AGREEMENT

1. Grant of Security Interest. To secure the obligations of Grantor to Bank, Grantor grants and pledges to Bank a security interest in all of Grantor's right, title and interest in, to and under its intellectual property (all of which shall collectively be called the "Intellectual Property Collateral"), including, without limitation, the following:

(a) Any and all copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret, now or hereafter existing, created, acquired or held, including without limitation those set forth on Exhibit A attached hereto (collectively, the "Copyrights");

(b) Any and all trade secrets, and any and all intellectual property rights in computer software and computer software products now or hereafter existing, created, acquired or held;

(c) Any and all design rights that may be available to Grantor now or hereafter existing, created, acquired or held;

(d) All patents, patent applications and like protections including, without limitation, improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the

same, including without limitation the patents and patent applications set forth on Exhibit B attached hereto (collectively, the "Patents");

(e) Any trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Grantor connected with and symbolized by such trademarks, including without limitation those set forth on Exhibit C attached hereto (collectively, the "Trademarks");

(f) All mask works or similar rights available for the protection of semiconductor chips, now owned or hereafter acquired, including, without limitation those set forth on Exhibit D attached hereto (collectively, the "Mask Works");

(g) Any and all claims for damages by way of past, present and future infringements of any of the rights included above, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the intellectual property rights identified above;

(h) All licenses or other rights to use any of the Copyrights, Patents, Trademarks, or Mask Works and all license fees and royalties arising from such use to the extent permitted by such license or rights;

(i) All amendments, extensions, renewals and extensions of any of the Copyrights, Trademarks, Patents, or Mask Works; and

(j) All proceeds and products of the foregoing, including without limitation all payments under insurance or any indemnity or warranty payable in respect of any of the foregoing.

2. Recordation. Grantor authorizes the Commissioner for Patents, the Commissioner for Trademarks and the Register of Copyrights and any other government officials to record and register this Agreement upon request by Bank. Grantor also authorizes Bank to file financing statements, without notice to Grantor, with all appropriate jurisdictions to perfect or protect Bank's interest or rights hereunder and under the Mortgage Debenture, including a notice that any disposition of any Collateral, by either Grantor or any other party, shall be deemed to violate the rights of Bank. Any such financing statements may indicate the Collateral as "all assets of the Debtor" or words of similar effect, or as being of an equal or lesser scope, or with greater detail, all in Bank's discretion.

3. Loan Documents. This Agreement has been entered into pursuant to and in conjunction with the Loan Agreement and the Mortgage Debenture, each of which are hereby incorporated by reference. The provisions of the Loan Agreement and the Mortgage Debenture shall supersede and control over any conflicting or inconsistent provision herein. The rights and remedies of Bank with respect to the Intellectual Property Collateral are as provided by the Loan Agreement, the Mortgage Debenture and related documents, and nothing in this Agreement shall be deemed to limit such rights and remedies.

4. Execution in Counterparts. This Agreement may be executed in counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. Delivery of an executed counterpart of a signature page to this Agreement by facsimile or in electronic (i.e., "pdf" or "tif" format) shall be effective as delivery of a manually executed counterpart of this Agreement.

5. Successors and Assigns. This Agreement will be binding on and shall inure to the benefit of the parties hereto and their respective successors and assigns.

6. Governing Law. This Agreement and any claim, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Agreement and the transactions contemplated hereby and thereby shall be governed by, and construed in accordance with, the laws of the United States and the Commonwealth of Massachusetts, without giving effect to any choice or conflict of law provision or rule (whether of the Commonwealth of Massachusetts or any other jurisdiction).

[Signature page follows.]

IN WITNESS WHEREOF, this Agreement is being as a sealed instrument under the laws of the Commonwealth of Massachusetts as of the first date written above.

GRANTOR:

CAMBRIDGE BROADBAND NETWORKS LIMITED

By:_____

Title: CEO

BANK:

SILICON VALLEY BANK

By:_____

Title:_____

IN WITNESS WHEREOF, this Agreement is being as a sealed instrument under the laws of the Commonwealth of Massachusetts as of the first date written above.

GRANTOR:

CAMBRIDGE BROADBAND NETWORKS LIMITED

By:_____

Title:_____

BANK:

SILICON VALLEY BANK

By: [signature]

Title: Director

EXHIBIT A

Copyrights

Description	Registration/ Application Number	Registration/ Application Date
None.		

EXHIBIT B

Patents

Description	Registration/ Application Number	Registration/ Application Date

See attached.

PATENTS SUMMARY September 3, 2014

#	Number/Case Reference	Title	Description	Country	Official Number
1. G	42557	Modem Architecture / Efficient power control initialisation / Wireless transmission system & method	A method of setting the transmit power of a Subscriber Unit (SU) in a point to multi-point wireless transmission system comprising an Access Point (AP) and a plurality of SUs, the method comprising the steps of: a) causing the AP to transmit sequential downstream data frames, at least some of which contain a power control identifier field, each power control identifier field containing a unique identifier and defining a time at which an associated upstream power control test field occurs; a) causing the SU, as a result of receiving and decoding the power control identifier field, to store the unique identifier and to generate and transmit an upstream test sequence in the power control test field; c) causing the AP to determine the received power of the test sequence; d) causing the AP to transmit a power field at a later time in the frame or in a subsequent frame, the power adjustment field containing the unique identifier from the power control identifier field and data representing a required transmit power adjustment; and e) causing the SU to adjust its output power when it detects a power adjustment field containing the stored unique identifier in accordance with the received power adjustment data.	UK	2376381
2.	42558	Modem equaliser architecture novel equaliser design allowing reduced guard-band between packets/ Wireless communication system	A packet based point to multipoint wireless transmission system comprising an access point (AP) communicating with a plurality of subscriber units (SUs) by means of a time division multiple access protocol, in which at the AP a non-linear decision feedback equaliser including a transversal feedback filter is provided to reduce inter symbol interference and at each SU each packet is linearly pre-distorted to remove pre-cursors, wherein the feedback filter in the decision feedback equaliser is arranged to hold symbol decisions made for all packets received during a given period prior to the packet being currently received in order to enable reduction of inter packet interference.	UK	2373421
3.	42559	Modem pre distortion techniques/ novel root- rotation method: precoding for contention detect Communications system & method	A method of transmitting a predetermined data sequence to a receiver over a transmission channel comprising the steps of: a) determining the impulse response of the channel; b) providing a pre-distortion arrangement at the transmitter having a response that approximates to the inverse of the channel response, the pre-distortion arrangement comprising a filter having a critical pole; c) causing a zero of the predetermined data sequence to coincide with the critical pole of the filter; and d) cancelling the coincident pole-zero pair.	UK	2373420
4. G	42881	Priority allocation – classes, maintaining service differentiation	A method for allocating bandwidth to users in a communications system when the total bandwidth available is less than the aggregate bandwidth sought by users, comprising the steps of: queuing (20) in an active pool all the users seeking bandwidth; allocating (22) to the user at the head of the queue bandwidth to transmit and/or receive a predetermined quantity of data; if, after sending and/or receiving the predetermined quality of data, the user is seeking further bandwidth, moving the user to the end of the queue in the active pool, and otherwise moving (26) the user to an inactive pool; and if a user in the inactive pool seeks or contends for bandwidth, moving (28) the user to the end of the queue in the active pool.	UK Germany France Greece Italy China	2375927 60238604.7 1391135 20110400319 1391135 ZL02810725.X
5. G	42882	Priority allocation – high/low CIR Scheme	A method for providing bandwidth to users in a multi-user communications system, in which each user has a predetermined committed data rate, and in which bandwidth is provided to users in successive service intervals, each comprising a predetermined quantity of bandwidth for user transmissions, comprising the following steps in each service interval: a) providing to each user in turn the bandwidth requested by that user according to a scheduling procedure in which bandwidth is provided to users in a high priority subclass before the users in a low priority subclass, the provision of bandwidth ceasing either when the bandwidth in the service interval is exhausted or when all of the requested bandwidth has been provided to users; b) measuring the average transmitted data rate achieved by each user over a sampling period, the sampling period being longer than the service interval; c) if the average data rate of a user in the high priority subclass exceeds their committed data rate, moving that user to the low priority subclass; d) if the average data range of a user in the low priority subclass is lower than their committed data rate, moving that user to the high priority subclass; and e) assigning users newly seeking bandwidth to the high-priority subclass.	Germany France UK Sweden China USA	60207077.5 1402689 1402689 1402689 ZL02812979.2 7430209

#	Number/Case Reference	Title	Description	Country	Official Number
6. G	42956	In-band signalling MAC frame structure	A communications system in which a downlink signal carries synchronisation bursts at predetermined times characterised in that data is contained in variable length frames interleaved between the synchronisation bursts, each synchronisation burst comprising an offset pointer to the start of the subsequent downlink frame.	UK	1410572
				Italy	1410572
				France	1410572
				Germany	6020706.2
				USA	7529274
7. H	42957	Access Protocol/ ATM used for data & control	A packet switched communications network comprising a controller and a plurality of controlled units arranged in a ring, wherein each of the controlled units comprises a switch at its input, characterised in that the switch includes control means responsive to control instructions contained in packets transmitted by the controller, the control means being arranged to configure the switch so that in a first configuration the switch passes control instructions and data into or out of the unit and in a second configuration the switch bypasses the unit and passes the control instructions and data to a further unit connected to the controller or back to the controller.	UK	1417804
				Italy	1417804
				France	1417804
				Germany	60219326.5
				USA	7317719
8. S	43066	Modem architecture Efficient precodes	A method of setting the characteristics of a precoder in a Subscriber Unit (SU) in a point to multipoint wireless transmission system comprising an Access Point (AP) and a plurality of SUs, the method comprising the steps of: a) causing the AP to transmit sequential downstream data frames, at least some of which contain a training identifier field, each training identifier field containing a unique identifier and defining a time at which an associated upstream training test field occurs; b) causing the SU, as a result of receiving and decoding the training identifier field, to store the unique identifier and to generate and transmit an upstream test sequence in the training test field; c) causing the AP to store samples of the received training test sequence; d) causing the AP to transmit a training response field at a later time in the frame or in a subsequent frame, the training response field containing the unique identifier from the training field data representing the impulse response of the upstream channel; and e) causing the SU to adjust its precoder characteristics when it detects a training response field containing the stored unique identifier in accordance with the upstream channel impulse response data.	UK	2376391
9. M	43199	Optimised pre-coding for data packets	A fixed wireless access (FWA) communications system comprising an access point and a plurality of a subscriber units each transmitting a predetermined data sequence; in which each subscriber unit comprises a precoder for pedistorting the predetermined data sequence to compensate for the characteristics of the upstream transmission channel between the subscriber unit and the access point where the system comprises means for optimising the precoder characteristics specifically for the predetermined data sequence.	GB	2378103
				China	ZL200380105720.4
				Europe	1415449
				USA	7787531
10. M	43653	Optimised precoding for contention detect	A fixed wireless access (FWA) communications system comprising an access point and a plurality of subscriber units each transmitting a predetermined data sequence; in which each subscriber unit comprises a precoder for predistorting the predetermined data sequence to compensate for the characteristics of the upstream transmission channel between the subscriber unit and the access point wherein the system comprises means for optimising the precoder characteristic specifically for the predetermined data sequence and the precoder comprises a memory in which a predistorted version of the predetermined data sequence is stored.	UK	2384666
11. M	43977	Optimised precoding – MPPI	A fixed wireless access (FWA) communications system comprising an access point and a plurality of subscriber units each transmitting a predetermined data sequence; comprising means for determining the impulse response of the upstream channel between the subscriber unit and the access point; means for generating a data sequence for transmission from a subscriber unit to the access point, the data comprising the predetermined data sequence pre-distorted to compensate for the channel impulse response of the upstream channel between the subscriber unit and the access point, means for storing the pre-distorted predetermined data sequence within the subscriber unit, and means for transmitting the stored sequence from the subscriber unit to the access point when it is desired to transmit the predetermined sequence to the access point; in which the means for determining the impulse response of the upstream channel comprises means for transmitting a training data sequence having good auto correlation properties from the subscriber unit to the access point, the training data sequence being known to the access point, and means for deriving the channel impulse response from the received data sequence.	UK	2396277
				China	ZL200380105720.4
				Europe	1573991
				USA	7519129
12. G	44217	Physical layer synchronisation	A packet switched communications system for transmitting synchronous data from a source module to a terminating module over a network, the network comprising plurality of modules interconnected via transmission links, characterised by each module in the	China	ZL03808174.1
				Europe	03720675.2

#	Number/Case Reference	Title	Description	Country	Official Number
			network having a data clock of nominal frequency that is independent of the data clocks of the other module(s) in the network and having a single input and one or more outputs where all the outputs of each module are phase locked to each other but are unsynchronised with respect to the input, means for determining an accumulated phase difference between an input data clock and an output data clock of each module, means for transmitting, the accumulated phase difference to the terminating module, and means for utilising the received accumulated phase difference at the terminating module to lock an output data clock at the terminating module to an input data clock at the source module.	UK	2387516
				USA	7602811
13. S	50657	Circuit emulation service	A communications system comprising a transmitter, a receiver, and a transmission medium between the transmitter and the receiver, the transmitter being arranged to transmit a synchronous transfer mode (ATM) cells in which synchronous transfer mode (STM) channels are assembled; wherein at least some of the ATM cells include a switch command, the switch command indicating a change in activation state of an STM channel.	UK	1946498
				Italy	1946498
				France	1946498
				Germany	602006012530.5
				USA	8009679
				China	CN101310485A
14. M	0921656-5	Base station architecture	A hub unit, for transmitting and receiving wireless user data to and from subscriber units (SU) over multiple channels, where in the hub unit comprises more than one air interface input and more than one air interface output and a sample bus, wherein the sample bus is shared across each air interface input and each air interface output.	UK	GB0921656.5
15. S	2463920	Improved data compression Ethernet protocol independent	Apparatus for processing data in telecommunications network, the apparatus comprising: an input, wherein the input receives data; storage, wherein the storage stores a set of templates, each template having a strength value; a processor, wherein the processor compares at least a portion of the received data to each template in the set of templates; and wherein if that at least a portion of the data matches one of the templates in the set of templates, the processor increases the strength value of the matched template.	UK	GB2463920
16. Applied for	Patent application PCT/GB2013/052122	Interference	Detecting co channel interference in a wireless communications network	Patent applied for in UK	

EXHIBIT C

Trademarks

Description	Registration/ Application Number	Registration/ Application Date
VECTASTAR	77863869	November 3, 2009

EXHIBIT D

Mask Works

Description	Registration/ Application Number	Registration/ Application Date
None.		

1732820.2