

## PATENT ASSIGNMENT COVER SHEET

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<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
LUCA ROSSATO	02/13/2017
GUIDO MEARDI	02/13/2017
<b>RECEIVING PARTY DATA</b>	
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<b>Property Type</b>	<b>Number</b>
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<b>Total Attachments: 4</b>	
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**ASSIGNMENT**

WHEREAS, we, Luca Rossato and Guido Meardi, have invented certain improvements in the following patent applications:

- VNO11-00; U.S. App. No. 13/188,188, filed July 21, 2011, now U.S. Patent No. 8,977,065, issued March 10, 2015, entitled: INHERITANCE IN A TIERED SIGNAL QUALITY HIERARCHY
- VNO11-01; U.S. App. No. 13/188,201, filed July 21, 2011, now U.S. Patent No. 8,948,248, issued February 3, 2015, entitled: TIERED SIGNAL DECODING AND SIGNAL RECONSTRUCTION
- VNO11-02; U.S. App. No. 13/188,207, filed July 21, 2011, now Patent No. 8,711,943, issued April 29, 2014, entitled: SIGNAL PROCESSING AND TIERED SIGNAL ENCODING
- VNO11-03; U.S. App. No. 13/188,220, filed July 21, 2011, now U.S. Patent No. 9,129,411, issued September 08, 2015, entitled: UPSAMPLING IN A TIERED SIGNAL QUALITY HIERARCHY
- VNO11-04; U.S. App. No. 13/188,226, filed July 21, 2011, now U.S. Patent No. 8,531,321, issued September 10, 2013, entitled: SIGNAL PROCESSING AND INHERITANCE IN A TIERED SIGNAL QUALITY HIERARCHY
- VNO11-05p; U.S. App. No. 61/563,169, filed November 23, 2011, entitled: TIER-BASED SYSTEM TO SEPARATE A MULTIDIMENSIONAL SIGNAL INTO STABLE/PREDICTABLE INFORMATION AND TRANSIENT INFORMATION
- VNO11-05; U.S. App. No. 13/352,944, filed January 18, 2012, now U.S. Patent No.: 9,510,018, issued November 29, 2016, entitled: SIGNAL ANALYSIS AND GENERATION OF TRANSIENT INFORMATION
- VNO11-05DIV; U.S. App. No. 15/296,633, filed October 18, 2016, entitled: SIGNAL ANALYSIS AND GENERATION OF TRANSIENT INFORMATION
- VNO11-06; U.S. App. No. 13/188,237, filed July 21, 2011, entitled: TRANSMISSION OF RECONSTRUCTION DATA IN A TIERED SIGNAL QUALITY HIERARCHY
- VNO11-07p; U.S. App. No. 61/558,302, filed November 10, 2011, entitled: UPSAMPLING AND DOWNSAMPLING OF MOTION MAPS AND OTHER AUXILIARY MAPS IN A TIERED SIGNAL QUALITY HIERARCHY
- VNO11-07; U.S. App. No. 13/303,554, filed November 23, 2011, now U.S. Patent No.: 9,300,980, issued March 29, 2016, entitled: UPSAMPLING AND DOWNSAMPLING OF

MOTION MAPS AND OTHER AUXILIARY MAPS IN A TIERED SIGNAL QUALITY HIERARCHY

- VNO11-07CON; U.S. App. No. 15/071,369, filed March 16, 2016, entitled: UPSAMPLING AND DOWNSAMPLING OF MOTION MAPS AND OTHER AUXILIARY MAPS IN A TIERED SIGNAL QUALITY HIERARCHY
- VNO11-09p; U.S. App. No. 61/587,989, filed January 18, 2012, entitled: DISTINCT ENCODING / DECODING OF STABLE/PREDICTABLE INFORMATION AND TRANSIENT/STOCHASTIC INFORMATION
- VNO11-09; U.S. App. No. 13/744,808, filed January 18, 2013, entitled: DISTINCT ENCODING AND DECODING OF STABLE INFORMATION AND TRANSIENT/STOCHASTIC INFORMATION
- VNO11-10p; U.S. App. No. 61/592,477, filed January 30, 2012, entitled: SIGNAL DECODING AND SIGNAL RECONSTRUCTION BASED ON JOINT SPACE-TIME CORRELATION AND ON RECONSTRUCTION OF TRANSIENT/STOCHASTIC INFORMATION
- VNO12-01p; U.S. App. No. 61/646,797, filed May 14, 2012, entitled: SIGNAL ENCODING, DECODING AND RECONSTRUCTION OF TIME-BASED AND/OR MULTIDIMENSIONAL SIGNALS BASED ON MULTIDIMENSIONAL TIER-BASED INHERITANCE
- VNO12-02p; U.S. App. No. 61/647,426, filed May 15, 2012, entitled: ESTIMATION, ENCODING, DECODING AND USAGE OF MOTION INFORMATION IN MULTIDIMENSIONAL SIGNALS THROUGH MOTION ZONES, MOTION MATRIXES, WARP MAPS AND MOTION TRANSFORMS
- VNO12-04; U.S. App. No. 13/893,665, filed May 14, 2013, now U.S. Patent No.: 9,313,495, issued April 12, 2016, entitled: ENCODING AND DECODING BASED ON BLENDING OF SEQUENCES OF SAMPLES ALONG TIME
- VNO12-04DIV; U.S. App. No. 15/071,364, filed March 16, 2016, entitled: ENCODING AND DECODING BASED ON BLENDING OF SEQUENCES OF SAMPLES ALONG TIME
- VNO12-05; U.S. App. No. 13/893,669, filed May 14, 2013, now U.S. Patent No.: 9,509,990, issued November 29, 2016, entitled: DECOMPOSITION OF RESIDUAL DATA DURING SIGNAL ENCODING, DECODING AND RECONSTRUCTION IN A TIERED HIERARCHY

- VNO12-05DIV; U.S. App. No. 15/296,643, filed October 18, 2016, entitled: DECOMPOSITION OF RESIDUAL DATA DURING SIGNAL ENCODING, DECODING AND RECONSTRUCTION IN A TIERED HIERARCHY
- VNO12-07; U.S. App. No. 13/894,417, filed May 14, 2013, entitled: ENCODING AND RECONSTRUCTION OF RESIDUAL DATA BASED ON SUPPORT INFORMATION
- VNO12-08; U.S. App. No. 13/893,672, filed May 14, 2013, entitled: ESTIMATION, ENCODING AND DECODING OF MOTION INFORMATION IN MULTIDIMENSIONAL SIGNALS THROUGH MOTION ZONES, AND AUXILIARY INFORMATION THROUGH AUXILIARY ZONES
- VNO12-09; U.S. App. No. 13/893,677, filed May 14, 2013, entitled: MOTION COMPENSATION AND MOTION ESTIMATION LEVERAGING A CONTINUOUS COORDINATE SYSTEM
- VNO13-01p; U.S. App. No. 61/812,046, filed April 15, 2013, entitled: SIGNAL ENCODING AND DECODING IN A TIERED HIERARCHY WITH USE OF DIFFERENT TECHNIQUES FOR DIFFERENT LEVELS OF QUALITY
- VNO13-01; U.S. App. No. 14/252,820, filed April 15, 2014, entitled: HYBRID BACKWARD-COMPATIBLE SIGNAL ENCODING AND DECODING

**WHEREAS, V-NOVA INTERNATIONAL LIMITED** (hereinafter "ASSIGNEE"), a limited liability company organized and existing under the laws of **England and Wales** and having a usual place of business at **1 Sheldon Square, Paddington, London, W2 6TT** (registered under number 07888208) desires to acquire an interest therein in accordance with agreements duly entered into with us;

**NOW, THEREFORE**, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said inventions as described in said applications, together with the entire right, title and interest in and to said applications and such Letters Patent as may issue thereon; said inventions, applications and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial

property by filing any such applications for Letters Patent. We hereby acknowledge that this assignments, being of the entire right, title and interest in and to said inventions, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said inventions or any applications or patents directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and the date set forth below.

Inventor: Luca Rossato  
**Luca Rossato**  
(Residence: Milan, Italy)

Dated: 13 FEBRUARY 2017

In the presence of:

Signature: [Handwritten Signature]

Name: LUCA CAPOLUONGO  
Address: VIA DOMENICHINO, 2, MILAN, ITALY  
Occupation: LAWYER

Inventor: Guido Meardi  
**Guido Meardi**  
(Residence: Milan, Italy)

Dated: 13<sup>th</sup> FEBRUARY 2017

In the presence of:

Signature: [Handwritten Signature]

Name: LUCA CAPOLUONGO  
Address: VIA DOMENICHINO, 2, MILAN, ITALY  
Occupation: LAWYER