

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT7179876

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
BALAZS MATUZ	08/27/2020
GIANLUIGI LIVA	02/07/2022
ONURCAN ISCAN	08/13/2020
RONALD BOEHNKE	08/13/2020
WEN XU	01/13/2022
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	Huawei Technologies Co., Ltd.
<b>Street Address:</b>	Huawei Administration Building
<b>Internal Address:</b>	Bantian, Longgang District
<b>City:</b>	Shenzhen, Guangdong
<b>State/Country:</b>	CHINA
<b>Postal Code:</b>	518129
<b>Name:</b>	DEUTSCHES ZENTRUM FÜR LUFT- UND RAUMFAHRT E.V.
<b>Street Address:</b>	LINDER HÖHE
<b>City:</b>	KÖLN
<b>State/Country:</b>	GERMANY
<b>Postal Code:</b>	51147
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16901934
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(312)616-5700
<i>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.</i>	
<b>Phone:</b>	(312) 616-5600
<b>Email:</b>	assignments@leydig.com
<b>Correspondent Name:</b>	LEYDIG, VOIT & MAYER, LTD.
<b>Address Line 1:</b>	TWO PRUDENTIAL PLAZA, SUITE 4900
<b>Address Line 2:</b>	180 NORTH STETSON AVENUE
<b>Address Line 4:</b>	CHICAGO, ILLINOIS 60601-6731

<b>ATTORNEY DOCKET NUMBER:</b>	HW749991
<b>NAME OF SUBMITTER:</b>	KAJAL AMIN
<b>SIGNATURE:</b>	/KAJAL AMIN/
<b>DATE SIGNED:</b>	02/16/2022
<b>Total Attachments: 8</b> source=Assignment#page1.tif source=Assignment#page2.tif source=Assignment#page3.tif source=Assignment#page4.tif source=Assignment#page5.tif source=Assignment#page6.tif source=Assignment#page7.tif source=Assignment#page8.tif	

**ASSIGNMENT**

**WHEREAS, WE,**

Balazs MATUZ  
Deutsches Zentrum für Luftund  
Raumfahrt e.V., Linder Höhe, 51147 Köln  
Germany; and

Gianluigi LIVA  
Deutsches Zentrum für Luftund Raumfahrt  
e.V., Linder Höhe, 51147 Köln  
Germany; and

Onurcan ISCAN  
Riesstr. 25, 80992 Munich  
Germany; and

Ronald BOEHNKE  
No. 220 Handan Road, Yangpu District,  
Shanghai 200433 China.

Wen XU  
Riesstr. 25, 80992 Munich  
Germany.

have invented and own a certain invention entitled:  
**DESIGN OF BASE PARITY-CHECK MATRICES FOR LDPC CODES THAT HAVE  
SUBSETS OF ORTHOGONAL ROWS**

for which invention we have executed an application (provisional or non-provisional) for a U.S.  
patent, which was filed on 2020-6-15, under U.S. Application No. 16901934 and

**WHEREAS,**

**Huawei Technologies Co., Ltd., of Huawei Administration Building, Bantian,  
Longgang District, Shenzhen, 518129, Guangdong, P.R. China,**

**and**

**Deutsches Zentrum für Luft- und Raumfahrt e.V., of Linder Höhe, 51147 Köln,  
Germany.**

hereinafter referred to as Assignees, are desirous of acquiring the entire domestic and  
foreign right, title, and interest in and under the invention described in the patent application.

**NOW, THEREFORE,** for good and valuable considerations, the receipt and sufficiency of  
which are hereby acknowledged, we assign and transfer to the Assignees and the Assignees'  
legal representatives, successors and assigns the full and exclusive rights in and to the invention  
in the United States and every foreign country and the entire right, title, and interest in and to  
the patent application and other such applications (e.g., provisional applications,  
non-provisional applications, continuations, continuations-in-part, divisionals, reissues,  
reexaminations, National phase applications, including petty patent applications, and utility  
model applications) that may be filed in the United States and every foreign country on the  
invention, and the patents, extensions, or derivations thereof, both foreign and domestic, that  
may issue thereon, and we do hereby authorize and request the Commissioner of Patents to  
issue U.S. patents to the above-mentioned Assignees agreeably with the terms of this  
assignment document.

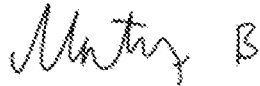
In re Appln. of MATUZ et al.  
Attorney Docket No. HW749991

**WE HEREBY AUTHORIZE** the Assignees to insert in this assignment document the filing date and application number of the application if the date and number are unavailable at the time this document is executed.

**WE DO HEREBY COVENANT** and agree with the Assignees that we will not execute any writing or do any act whatsoever conflicting with the terms of this assignment document set forth herein, and that we will at any time upon request, without further or additional consideration, but at the expense of the Assignees, execute such additional assignments and other writings and do such additional acts as the Assignees may deem necessary or desirable to perfect the Assignees' enjoyment of this assignment, and render all necessary assistance in making application for and obtaining original, continuation, continuation-in-part, divisional, reissued, reexamined, and National phase patents of the U.S. or of any and all foreign countries on the invention, and in enforcing any rights or chooses in action accruing as a result of such applications or patents, and by executing statements and other affidavits, it being understood that the foregoing covenant and agreement shall bind, and inure to the benefit of, the assigns and legal representatives of all parties hereto.

**IN WITNESS WHEREOF**, we have hereunder set our hands on the dates shown below.

Date 27.08.2020



\_\_\_\_\_  
Balazs MATUZ

Date \_\_\_\_\_

\_\_\_\_\_  
Gianluigi LIVA

Date \_\_\_\_\_

\_\_\_\_\_  
Onurcan ISCAN

Date \_\_\_\_\_

\_\_\_\_\_  
Ronald BOEHNKE

Date \_\_\_\_\_

\_\_\_\_\_  
Wen XU

**ASSIGNMENT**

**WHEREAS, WE,**

Balazs MATUZ  
Deutsches Zentrum für Luftund  
Raumfahrt e.V., Linder Höhe, 51147 Köln  
Germany; and

Gianluigi LIVA  
Deutsches Zentrum für Luftund  
Raumfahrt e.V., Linder Höhe, 51147 Köln  
Germany; and

Onurcan ISCAN  
Riesstr. 25, 80992 Munich  
Germany; and

Ronald BOEHNKE  
Riesstr. 25, 80992 Munich  
Germany; and

Wen XU  
Riesstr. 25, 80992 Munich  
Germany.

have invented and own a certain invention entitled:  
**DESIGN OF BASE PARITY-CHECK MATRICES FOR LDPC CODES THAT HAVE  
SUBSETS OF ORTHOGONAL ROWS**

for which invention we have executed an application (provisional or non-provisional) for a U.S.  
patent, which was filed on 2020-6-15, under U.S. Application No. 16901934 and

**WHEREAS,**

**Huawei Technologies Co., Ltd., of Huawei Administration Building, Bantian,  
Longgang District, Shenzhen, 518129, Guangdong, P.R. China,**

**and**

**Deutsches Zentrum für Luft- und Raumfahrt e.V., of Linder Höhe, 51147 Köln,  
Germany.**

hereinafter referred to as Assignees, are desirous of acquiring the entire domestic and  
foreign right, title, and interest in and under the invention described in the patent application.

**NOW, THEREFORE,** for good and valuable considerations, the receipt and sufficiency  
of which are hereby acknowledged, we assign and transfer to the Assignees and the Assignees'  
legal representatives, successors and assigns the full and exclusive rights in and to the  
invention in the United States and every foreign country and the entire right, title, and interest  
in and to the patent application and other such applications (e.g., provisional applications,  
non-provisional applications, continuations, continuations-in-part, divisionals, reissues,  
reexaminations, National phase applications, including petty patent applications, and utility  
model applications) that may be filed in the United States and every foreign country on the  
invention, and the patents, extensions, or derivations thereof, both foreign and domestic, that  
may issue thereon, and we do hereby authorize and request the Commissioner of Patents to  
issue U.S. patents to the above-mentioned Assignees agreeably with the terms of this  
assignment document.

In re Appln. of MATUZ et al.  
Attorney Docket No. HW749991

**WE HEREBY AUTHORIZE** the Assignees to insert in this assignment document the filing date and application number of the application if the date and number are unavailable at the time this document is executed.

**WE DO HEREBY COVENANT** and agree with the Assignees that we will not execute any writing or do any act whatsoever conflicting with the terms of this assignment document set forth herein, and that we will at any time upon request, without further or additional consideration, but at the expense of the Assignees, execute such additional assignments and other writings and do such additional acts as the Assignees may deem necessary or desirable to perfect the Assignees' enjoyment of this assignment, and render all necessary assistance in making application for and obtaining original, continuation, continuation-in-part, divisional, reissued, reexamined, and National phase patents of the U.S. or of any and all foreign countries on the invention, and in enforcing any rights or chooses in action accruing as a result of such applications or patents, and by executing statements and other affidavits, it being understood that the foregoing covenant and agreement shall bind, and inure to the benefit of, the assigns and legal representatives of all parties hereto.

**IN WITNESS WHEREOF**, we have hereunder set our hands on the dates shown below.

Date \_\_\_\_\_

\_\_\_\_\_  
Balazs MATUZ

Date 07.02.2022 \_\_\_\_\_

\_\_\_\_\_  
i.A. *Gianluigi*  
Gianluigi IVA

Date \_\_\_\_\_

\_\_\_\_\_  
Onurcan ISCAN

Date \_\_\_\_\_

\_\_\_\_\_  
Ronald BOEHNKE

Date \_\_\_\_\_

\_\_\_\_\_  
Wen XU

ASSIGNMENT

WHEREAS, WE,

Balazs Matuz  
Deutsches Zentrum für Luftund  
Raumfahrt e.V., Linder Höhe,  
51147 Köln, Germany; and  
Onurcan Iscan  
Riesstr. 25, 80992 Munich,  
Germany; and

Gianluigi Liva  
Deutsches Zentrum für Luftund  
Raumfahrt e.V., Linder Höhe,  
51147 Köln, Germany; and  
Ronald Boehnke  
Riesstr. 25, 80992 Munich,  
Germany; and

Wen Xu  
Riesstr. 25, 80992 Munich,  
Germany.

have invented and own a certain invention entitled:

DESIGN OF BASE PARITY-CHECK MATRICES FOR LDPC CODES THAT HAVE  
SUBSETS OF ORTHOGONAL ROWS

for which invention we have executed an application (provisional or non-provisional) for a U.S.  
patent, which was filed on 6/15/2020, under U.S. Application No. 16901934 and

WHEREAS, HUAWEI TECHNOLOGIES CO.,LTD., Huawei Administration  
Building Bantian, Longgang District Shenzhen, 518129, Guangdong P.R.CHINA,;  
hereinafter referred to as Assignee, is desirous of acquiring the entire domestic and foreign  
right, title, and interest in and under the invention described in the patent application.

NOW, THEREFORE, for good and valuable considerations, the receipt and sufficiency  
of which are hereby acknowledged, we assign and transfer to the Assignee and the Assignee's  
legal representatives, successors and assigns the full and exclusive rights in and to the invention  
in the U.S. and every foreign country and the entire right, title, and interest in and to the patent  
application and other such applications (e.g., provisional applications, non-provisional  
applications, continuations, continuations-in-part, divisionals, reissues, reexaminations,  
National phase applications, including petty patent applications, and utility model applications)  
that may be filed in the United States and every foreign country on the invention, and the  
patents, extensions, or derivations thereof, both foreign and domestic, that may issue thereon,  
and we do hereby authorize and request the Commissioner of Patents to issue U.S. patents to  
the above-mentioned Assignee agreeably with the terms of this assignment document.

WE HEREBY AUTHORIZE the Assignee to insert in this assignment document the filing  
date and application number of the application if the date and number are unavailable at the  
time this document is executed.

WE DO HEREBY COVENANT and agree with the Assignee that we will not execute any  
writing or do any act whatsoever conflicting with the terms of this assignment document set  
forth herein, and that we will at any time upon request, without further or additional  
consideration, but at the expense of the Assignee, execute such additional assignments and  
other writings and do such additional acts as the Assignee may deem necessary or desirable to

In re Appln. of Matuz et al.  
Attorney Docket No. HW749991

perfect the Assignee's enjoyment of this assignment, and render all necessary assistance in making application for and obtaining original, continuation, continuation-in-part, divisional, reissued, reexamined, and National phase patents of the U.S. or of any and all foreign countries on the invention, and in enforcing any rights or chooses in action accruing as a result of such applications or patents, and by executing statements and other affidavits, it being understood that the foregoing covenant and agreement shall bind, and inure to the benefit of, the assigns and legal representatives of all parties hereto.

IN WITNESS WHEREOF, We have hereunder set our hands on the dates shown below.


Date \_\_\_\_\_

\_\_\_\_\_  
Balazs Matuz

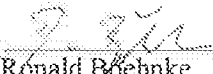
Date \_\_\_\_\_

\_\_\_\_\_  
Gianluigi Liva

Date 13.08.2020

  
\_\_\_\_\_  
Omurcan Iscan

Date 17.08.2020

  
\_\_\_\_\_  
Ronald Boehnke

Date \_\_\_\_\_

\_\_\_\_\_  
Wen Xu



**ASSIGNMENT**

**WHEREAS, We,**

Balazs MATUZ Deutsches Zentrum für Luft- und Raumfahrt e.V., Linder Höhe, 51147 Köln Germany; and	Gianluigi LIVA Deutsches Zentrum für Luft- und Raumfahrt e.V., Linder Höhe, 51147 Köln Germany; and
--	--

Onurcan ISCAN Riesstr. 25, 80992 Munich Germany; and	Ronald BOEHNKE Riesstr. 25, 80992 Munich Germany; and
--	---

Wen XU  
Riesstr. 25, 80992 Munich  
Germany.

have invented and own a certain invention entitled:  
**DESIGN OF BASE PARITY-CHECK MATRICES FOR LDPC CODES THAT HAVE  
SUBSETS OF ORTHOGONAL ROWS**

for which invention we have executed an application (provisional or non-provisional) for a U.S.  
patent, which was filed on 2020-6-15, under U.S. Application No. 16901934 and

**WHEREAS,**

**Huawei Technologies Co., Ltd., of Huawei Administration Building, Bantian,  
Longgang District, Shenzhen, 518129, Guangdong, P.R. China,**

**and**

**Deutsches Zentrum für Luft- und Raumfahrt e.V., of Linder Höhe, 51147 Köln,  
Germany.**

hereinafter referred to as Assignees, are desirous of acquiring the entire domestic and  
foreign right, title, and interest in and under the invention described in the patent application.

**NOW, THEREFORE,** for good and valuable considerations, the receipt and sufficiency of  
which are hereby acknowledged, we assign and transfer to the Assignees and the Assignees'  
legal representatives, successors and assigns the full and exclusive rights in and to the invention  
in the United States and every foreign country and the entire right, title, and interest in and to  
the patent application and other such applications (e.g., provisional applications,  
non-provisional applications, continuations, continuations-in-part, divisionals, reissues,  
reexaminations, National phase applications, including petty patent applications, and utility  
model applications) that may be filed in the United States and every foreign country on the  
invention, and the patents, extensions, or derivations thereof, both foreign and domestic, that  
may issue thereon, and we do hereby authorize and request the Commissioner of Patents to  
issue U.S. patents to the above-mentioned Assignees agreeably with the terms of this  
assignment document.

In re Appln. of MATUZ et al.  
Attorney Docket No. HW749991

WE HEREBY AUTHORIZE the Assignees to insert in this assignment document the filing date and application number of the application if the date and number are unavailable at the time this document is executed.

WE DO HEREBY COVENANT and agree with the Assignees that we will not execute any writing or do any act whatsoever conflicting with the terms of this assignment document set forth herein, and that we will at any time upon request, without further or additional consideration, but at the expense of the Assignees, execute such additional assignments and other writings and do such additional acts as the Assignees may deem necessary or desirable to perfect the Assignees' enjoyment of this assignment, and render all necessary assistance in making application for and obtaining original, continuation, continuation-in-part, divisional, reissued, reexamined, and National phase patents of the U.S. or of any and all foreign countries on the invention, and in enforcing any rights or chooses in action accruing as a result of such applications or patents, and by executing statements and other affidavits, it being understood that the foregoing covenant and agreement shall bind, and inure to the benefit of, the assigns and legal representatives of all parties hereto.

IN WITNESS WHEREOF, we have hereunder set our hands on the dates shown below.

Date \_\_\_\_\_  
Balazs MATUZ

Date \_\_\_\_\_  
Gianluigi LIVA

Date \_\_\_\_\_  
Onurcan ISCAN

Date \_\_\_\_\_  
Ronald BOEHNKE

Date Jan 13, 2022  
Wen XU