

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
Name		Execution Date
INTERNATIONAL BUSINESS MACHINES CORPORATION		12/27/2019
RECEIVING PARTY DATA		
Name:	TESSERA, INC.	
Street Address:	3025 ORCHARD PARKWAY	
City:	SAN JOSE	
State/Country:	CALIFORNIA	
Postal Code:	95134	
PROPERTY NUMBERS Total: 82		
Property Type	Number	
Application Number:	16161111	
Application Number:	14828551	
Application Number:	16454178	
Application Number:	16118998	
Application Number:	16657169	
Application Number:	16662845	
Application Number:	15450829	
Application Number:	16296433	
Application Number:	16265110	
Application Number:	16459685	
Application Number:	16057056	
Application Number:	16261305	
Application Number:	16399845	
Application Number:	16051820	
Application Number:	16052526	
Application Number:	16391622	
Application Number:	16213618	
Application Number:	15842841	
Application Number:	16406115	
Application Number:	16505063	

Property Type	Number
Application Number:	16056940
Application Number:	61980292
Application Number:	16032213
Application Number:	15897526
Application Number:	16689142
Application Number:	16689223
Application Number:	16402267
Application Number:	14547181
Application Number:	16002479
Application Number:	16000371
Application Number:	15222151
Application Number:	15345574
Application Number:	16103085
Application Number:	16042388
Application Number:	16042498
Application Number:	15609672
Application Number:	16002590
Application Number:	15371350
Application Number:	16410178
Application Number:	16234974
Application Number:	16227733
Application Number:	16054394
Application Number:	16054417
Application Number:	16058232
Application Number:	16675630
Application Number:	16421587
Application Number:	16238193
Application Number:	16250351
Application Number:	16106359
Application Number:	16114816
Application Number:	15852151
Application Number:	15852176
Application Number:	16440106
Application Number:	15850446
Application Number:	16352946
Application Number:	13618656
Application Number:	16252663
Application Number:	16244493

Property Type	Number
Application Number:	11855211
Application Number:	11855280
Application Number:	13096757
Application Number:	61982616
Application Number:	14817783
Application Number:	16452251
Application Number:	16014676
Application Number:	16040093
Application Number:	15797648
Application Number:	16684115
Application Number:	16681347
Application Number:	16014020
Application Number:	16014025
Application Number:	16250561
Application Number:	15629280
Application Number:	16685229
Application Number:	16685329
Application Number:	16001426
Application Number:	16682588
Application Number:	16276118
Application Number:	16052161
Application Number:	16508691
Application Number:	16058088
Application Number:	16257221

CORRESPONDENCE DATA

Fax Number:

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.

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ATTORNEY DOCKET NUMBER:	IBM5-TESSERA_US-APPS
NAME OF SUBMITTER:	CHRISTOPHER W. LATTIN
SIGNATURE:	/Christopher W. Lattin/
DATE SIGNED:	01/06/2020
Total Attachments: 13	

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Recordable Patent Assignment and Reservation

For good and valuable consideration, the receipt of which is hereby acknowledged, and subject to the reservations stated in the Patent Assignment Agreement Reference No. L190373 between the parties with an effective time and date of 11:59pm United States Eastern Time on December 19, 2019 ("Effective Time & Date") ("Patent Assignment Agreement"), International Business Machines Corporation, a New York corporation having a place of business at New Orchard Road, Armonk, New York, 10504, U.S.A. (hereinafter "ASSIGNOR"), hereby grants and assigns to TESSERA, INC., a Delaware limited liability company having a place of business at 3025 Orchard Parkway, San Jose, California 95134 (hereinafter "ASSIGNEE"), all of IBM's right, title and interest in and to the United States Letters Patents and the United States Patent Applications identified in Exhibits A and C, attached hereto (hereinafter, collectively, "ASSIGNED PATENTS"), to have and to hold the same, unto ASSIGNEE for its own use and enjoyment and for the use and enjoyment of its successors and assigns, including all damages for infringement of any of the ASSIGNED PATENTS accruing on or after the Effective Time & Date and the sole right to sue therefore under such ASSIGNED PATENTS, for the full term or terms of all such ASSIGNED PATENTS, subject to all rights granted under the ASSIGNED PATENTS to third parties prior to said Effective Time & Date.

ASSIGNOR hereby reserves and retains, for the benefit of itself and its subsidiaries and its and their successors and assigns, the rights and licenses set forth in the Patent Assignment Agreement.

IN WITNESS WHEREOF, ASSIGNOR has caused this Patent Assignment and Reservation to be duly signed on its behalf.

Signature: 

Name: Lisa M. Regan

Date: Dec. 27, 2019

Title: Vice President, Finance & Operations, Research and Intellectual Property

EXHIBIT A

ASSIGNED PATENTS

EXHIBIT A-I

LISTED PATENTS (United States)

IBM Docket Number	Country	Patent Number	Application Number	Filing Date	Issue Date
BUR920080285US2	US	8169055	12/634726	12/10/2009	5/1/2012
BUR920100010US1	US	8188591	12/835306	7/13/2010	5/29/2012
BUR920100010US2	US	8232139	13/426835	3/22/2012	7/31/2012
*BUR920130117US1	US	9159671	14/083929	11/19/2013	10/13/2015
BUR920130117US2	US	9230914	14/526741	10/29/2014	1/5/2016
BUR920130117US3	US	9613853	14/883162	10/14/2015	4/4/2017
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*FIS920050163US2	US	7439173	11/869044	10/9/2007	10/21/2008
FIS920050184US1	US	7456095	11/163038	10/3/2005	11/25/2008
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FIS920090108US2	US	8785289	13/975519	8/26/2013	7/22/2014
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FIS920120324US1	US	9190321	13/858125	4/8/2013	11/17/2015
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FIS920130265US1	US	9385123	14/281931	5/20/2014	7/5/2016
FIS920140039US1	US	9515164	14/198976	3/6/2014	12/6/2016
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FIS920140215US1	US	9455195	14/561550	12/5/2014	9/27/2016
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YOR920161085US1	US	9773893	15/276029	9/26/2016	9/26/2017
YOR920161085US2	US	10510892	15/395637	12/30/2016	12/17/2019
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YOR920161852US1	US	9865598	15/450725	3/6/2017	1/9/2018
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YOR920170044US1	US	9954058	15/620437	6/12/2017	4/24/2018
YOR920170145US02	US	10242909	15/808193	11/9/2017	3/26/2019
YOR920170145US1	US	10090247	15/585704	5/3/2017	10/2/2018

EXHIBIT A-II

LISTED PATENTS (United States)

IBM Docket Number	Country	Patent Number	Application Number	Filing Date	Issue Date
*FIS920070140US1	US	7585716	11/769150	6/27/2007	9/8/2009
FIS920070140US2	US	7812411	12/554292	9/4/2009	10/12/2010
FIS920080279US1	US	7939369	12/465839	5/14/2009	5/10/2011

* inactive

END OF EXHIBIT A

EXHIBIT C-I

ASSIGNED PATENT APPLICATIONS

US Assigned Patent Applications

IBM Docket Number	Country	Application Number	Filing Date	Published Application Number
*BUR920080285US1	US	61/161111	3/18/2009	
*FIS920130265US2	US	14/828551	8/18/2015	20150357328
FIS920140039US03	US	16/454178	6/27/2019	20190318966
FIS920140131US07	US	16/118998	8/31/2018	20180374748
FIS920140131US08	US	16/657169	10/18/2019	
FIS920140148US03	US	16/662845	10/24/2019	
FIS920140148US2	US	15/450829	3/6/2017	20170178960
FIS920150011US06	US	16/296433	3/8/2019	20190206865

FIS920150117US09	US	16/265110	2/1/2019	20190181049
FIS920150198US03	US	16/459685	7/2/2019	20190326406
FIS920150244US03	US	16/057056	8/7/2018	20180342419
FIS920150267US03	US	16/261305	1/29/2019	20190157388
FIS920150267US04	US	16/399845	4/30/2019	20190259831
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FIS920170003US06	US	16/052526	8/1/2018	20180342511
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YOR820162922US01	US	15/842841	12/14/2017	20190189457
YOR820170142US02	US	16/406115	5/8/2019	20190267278
YOR820170167US02	US	16/505063	7/8/2019	20190333824
YOR920130854US08	US	16/056940	8/7/2018	20180350959
*YOR920130854US1	US	61/980292	4/16/2014	
YOR920130973US04	US	16/032213	7/11/2018	20180331039
YOR920140073US04	US	15/897526	2/15/2018	20180174903
YOR920140073US05	US	16/689142	11/20/2019	
YOR920140073US06	US	16/689223	11/20/2019	
YOR920140278US03	US	16/402267	5/3/2019	20190259834
*YOR920140278US1	US	14/547181	11/19/2014	20160141360
YOR920150643US06	US	16/002479	6/7/2018	20180294339
YOR920150643US07	US	16/000371	6/5/2018	20180286958
YOR920150867US2	US	15/222151	7/28/2016	20170148890
YOR920151069US2	US	15/345574	11/8/2016	20170117181
YOR920151318US03	US	16/103085	8/14/2018	20190006463
YOR920151468US02	US	16/042388	7/23/2018	20180331180
YOR920151468US03	US	16/042498	7/23/2018	20180350909
YOR920160079US02	US	15/609672	5/31/2017	20170294382
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YOR920160420US04	US	16/410178	5/13/2019	20190267279
YOR920160479US06	US	16/234974	12/28/2018	20190139832
YOR920160479US07	US	16/227733	12/20/2018	20190131179
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YOR920161085US06	US	16/685329	11/15/2019	
YOR920161307US02	US	16/001426	6/6/2018	20180286682
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YOR920161610US04	US	16/276118	2/14/2019	US20190181263
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