

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT7568498

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| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT                     |
| <b>NATURE OF CONVEYANCE:</b>  | RELEASE (REEL 041791 / FRAME 0203) |
| <b>CONVEYING PARTY DATA</b>   |                                    |
| <b>Name</b>   | <b>Execution Date</b>              |
| JPMORGAN CHASE BANK, N.A.   | 09/30/2022                         |
| <b>RECEIVING PARTY DATA</b>   |                                    |
| <b>Name:</b>  | TIBCO SOFTWARE INC.                |
| <b>Street Address:</b>  | 3303 HILLVIEW AVENUE               |
| <b>City:</b>  | PALO ALTO                          |
| <b>State/Country:</b>   | CALIFORNIA                         |
| <b>Postal Code:</b>   | 94304                              |
| <b>PROPERTY NUMBERS Total: 4</b>  |                                    |
| <b>Property Type</b>  | <b>Number</b>                      |
| <b>Application Number:</b>  | 15274120                           |
| <b>Application Number:</b>  | 15344138                           |
| <b>Application Number:</b>  | 15357924                           |
| <b>Application Number:</b>  | 62424331                           |
| <b>CORRESPONDENCE DATA</b>  |                                    |
| <b>Fax Number:</b>  | (800)914-4240                      |
| <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>   | 800-713-0755                       |
| <b>Email:</b>   | Michael.Violet@wolterskluwer.com   |
| <b>Correspondent Name:</b>  | CT CORPORATION                     |
| <b>Address Line 1:</b>  | 4400 EASTON COMMONS WAY            |
| <b>Address Line 2:</b>  | SUITE 125                          |
| <b>Address Line 4:</b>  | COLUMBUS, OHIO 43219               |
| <b>NAME OF SUBMITTER:</b>   | JESSICA DIAS-JAYASINGHE            |
| <b>SIGNATURE:</b>   | /Jessica Dias-Jayasinghe/          |
| <b>DATE SIGNED:</b>   | 09/30/2022                         |
| <b>Total Attachments: 18</b>  |                                    |
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**RELEASE OF SECURITY INTEREST IN PATENTS INTELLECTUAL PROPERTY**

This RELEASE OF SECURITY INTEREST IN PATENTS INTELLECTUAL PROPERTY (this “Release”), dated as of September 30, 2022 (the “Effective Date”), is made by JPMorgan Chase Bank, N.A., in its capacity as collateral agent (the “Agent”), in favor of the grantor party identified on the signature page hereto (the “Grantor”).

WHEREAS, pursuant to that certain Term Loan Security Agreement, dated as of October 30, 2020, by and among the Agent, the Grantor and certain other parties thereto (as amended, amended and restated, or otherwise modified from time to time, the “Security Agreement”), the Grantor granted to the Agent, in its capacity as Collateral Agent, a security interest in and to certain collateral;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of December 5, 2014 (the “Patent Security Agreement”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Patent Security Agreement was recorded with the United States Patent and Trademark Office on December 5, 2014 at Reel/Frame 034536/0438;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of March 22, 2016 (the “Supplemental Patent Security Agreement”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on April 7, 2016 at Reel/Frame 038382/0242;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of May 10, 2016 (the “Second Supplemental Patent Security Agreement”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Second Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on May 19, 2016 at Reel/Frame 038754/0649;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of August 5, 2016 (the “Third Supplemental Patent Security Agreement”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Third Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on August 5, 2016 at Reel/Frame 039592/0810;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of February 23, 2017 (the “Fourth Supplemental Patent Security Agreement”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Fourth Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on February 23, 2017 at Reel/Frame 041791/0203;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of August 7, 2017 (the “Fifth Supplemental Patent Security Agreement”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Fifth Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on August 11, 2017 at Reel/Frame 043540/846;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of October 31, 2017 (the “Sixth Supplemental Patent Security Agreement”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Sixth Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on November 3, 2017 at Reel/Frame 044032/0704;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of May 1, 2018 (the “Seventh Supplemental Patent Security Agreement”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Seventh Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on May 8, 2018 at Reel/Frame 045747/0307;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of February 27, 2019 (the “Eighth Supplemental Patent Security Agreement”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Eighth Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on March 21, 2019 at Reel/Frame 048670/0643;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of April 16, 2019 (the “Ninth Supplemental Patent Security Agreement”), for recordal with the United States Patent and Trademark Office

WHEREAS, the Ninth Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on April 26, 2019 at Reel/Frame 049010/0167;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of August 7, 2019 (the “Tenth Supplemental Patent Security Agreement”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Tenth Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on August 14, 2019 at Reel/Frame 050055/0641;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of October 29, 2019 (the “Eleventh Supplemental Patent Security Agreement”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Eleventh Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on November 1, 2019 at Reel/Frame 050889/0727;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of March 4, 2020 (the “Twelfth Supplemental Patent Security Agreement”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Twelfth Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on March 5, 2020 at Reel/Frame 052096/0061;

WHEREAS, pursuant to the Security Agreement, the Grantor executed and delivered a Patent Security Agreement, dated as of February 26, 2021 (the “Thirteenth Supplemental Patent Security Agreement” and with the Patent Security Agreement, Supplemental Patent Security Agreement, Second Supplemental Patent Security Agreement, Third Supplemental Patent Security Agreement and the Fourth Supplemental Patent Security Agreement, Fifth Patent Security Agreement, Sixth Patent Security Agreement, Seventh Patent Security Agreement, Eighth Patent Security Agreement, Ninth Patent Security Agreement, Tenth Patent Security Agreement, Eleventh Patent Security Agreement and Twelfth Patent Security Agreement, the “Patent Security Agreements”), for recordal with the United States Patent and Trademark Office;

WHEREAS, the Thirteenth Supplemental Patent Security Agreement was recorded with the United States Patent and Trademark Office on June 23, 2022 at Reel/Frame 060297/0084;

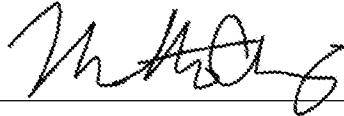
NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Agent hereby agrees as follows:

1. Defined Terms. All capitalized terms used, but not otherwise defined herein, shall have the respective meanings ascribed in or otherwise referenced in the Security Agreement or the Patent Security Agreements, as applicable.
2. Release. The Agent, without representation or warranty of any kind, hereby releases, discharges, terminates and cancels all of its security interest in and to the Patent Collateral, including the patents and patent applications set forth Schedule I attached hereto, arising under the Security Agreement and the Patent Security Agreements. If and to the extent that the Agent has acquired any right, title or interest in and to the Patent Collateral under the Patent Security Agreements, the Agent, without representation or warranty of any kind, hereby re-transfers, re-conveys and re-assigns such right, title or interest to the Grantor.
3. Termination. The Agent, without representation or warranty of any kind, terminates and cancels the Patent Security Agreements.
4. Further Assurances. The Agent agrees to take all further actions, and provide to the Grantor and its successors, assigns or other legal representatives, all such cooperation and assistance (including, without limitation, the execution and delivery of any and all documents or other instruments), reasonably requested by the Grantor, at the Grantor’s sole cost and expense, to more fully and effectively effectuate the purposes of this Release.
5. Governing Law. This Release shall be governed exclusively under the laws of the State of New York, without regard to conflicts of law or choice of law principles.

*[Remainder of page left intentionally blank]*

IN WITNESS WHEREOF, the Agent has caused this Release to be executed by its duly authorized representative as of the Effective Date:

**JPMorgan Chase Bank, N.A., acting in its  
capacity as collateral agent for the Secured  
Parties**

By: \_\_\_\_\_

Name: Matthew Cheung

Title: Vice President

**GRANTORS:**

**TIBCO SOFTWARE INC.**

# SCHEDULE I

## UNITED STATES PATENTS AND PATENT APPLICATIONS

United States Patent Applications and Patents:

Reel/Frame 034536/0438 (Executed December 5, 2014):

|     | Assignee                         | Patent Title  | Serial No. | Filing Date | Patent No. | Issue Date |
|-----|----------------------------------|---|------------|-------------|------------|------------|
| 1.  | TIBCO Software Inc.              | Contest server  | 09443778   | 11/19/1999  | 6532448    | 03/11/2003 |
| 2.  | TIBCO Software Inc.              | Intelligent console for content-based interactivity   | 09518480   | 03/03/2000  | 7823066    | 10/26/2010 |
| 3.  | TIBCO Software Inc.              | Method, apparatus and articles-of-manufacture for network-based distributed computing   | 09583244   | 05/31/2000  | 6757730    | 06/29/2004 |
| 4.  | TIBCO Software Inc.              | Method and apparatus for anonymous subject-based addressing   | 09746757   | 12/21/2000  | 7051118    | 05/23/2006 |
| 5.  | TIBCO Software Inc.              | Intra-process message switch  | 09784988   | 02/15/2001  | 7039050    | 05/02/2006 |
| 6.  | TIBCO Software Inc.              | Single applet to communicate with multiple HTML elements contained inside of multiple categories on a page                                    | 10058152   | 01/25/2002  | 7107543    | 09/12/2006 |
| 7.  | TIBCO Software Inc.              | System and method for determining convergence of image set registration   | 10063834   | 05/16/2002  | 7106891    | 09/12/2006 |
| 8.  | TIBCO Software Inc.              | System and method for mining quantitative information from medical images   | 10271916   | 10/15/2002  | 7158692    | 01/02/2007 |
| 9.  | TIBCO Software Inc.              | Delivery of data and formatting information to allow client-side manipulation   | 10278728   | 10/22/2002  | 8136109    | 03/13/2012 |
| 10. | TIBCO Software Inc.              | Method and apparatus to maintain consistency between an object store and a plurality of caches utilizing transactional updates to data caches | 10305759   | 11/27/2002  | 6970981    | 11/29/2005 |
| 11. | TIBCO Software Inc. <sup>1</sup> | Multistage intelligent database search method   | 10432791   | 05/22/2003  | 7107263    | 09/12/2006 |

<sup>1</sup> F/K/A Netrics.com

|     | Assignee            | Patent Title   | Serial No. | Filing Date | Patent No. | Issue Date |
|-----|---------------------|--|------------|-------------|------------|------------|
| 12. | TIBCO Software Inc. | Efficient transformation of information between a source schema and a target schema            | 10611232   | 06/30/2003  | 7225411    | 05/29/2007 |
| 13. | TIBCO Software Inc. | Method and system to communicate messages in a computer network                                | 10687951   | 10/17/2003  | 8606859    | 12/10/2013 |
| 14. | TIBCO Software Inc. | Score-based scheduling of service requests in a grid services computing platform               | 10728732   | 12/05/2003  | 7130891    | 10/31/2006 |
| 15. | TIBCO Software Inc. | System and method for storing raw log data   | 10898017   | 07/23/2004  | 7599939    | 10/06/2009 |
| 16. | TIBCO Software Inc. | System and method for parsing, summarizing and reporting log data                              | 10992230   | 11/18/2004  | 8234256    | 07/31/2012 |
| 17. | TIBCO Software Inc. | Inferential state machines   | 11180075   | 07/12/2005  | 7472101    | 12/30/2008 |
| 18. | TIBCO Software Inc. | Adaptive shared computing infrastructure for application server-based deployments              | 11395586   | 03/30/2006  | 7870568    | 01/11/2011 |
| 19. | TIBCO Software Inc. | Method and system for handling large data sets in a statistical language                       | 11400070   | 04/07/2006  | 7739311    | 06/15/2010 |
| 20. | TIBCO Software Inc. | Certified message delivery and queuing in multipoint publish/subscribe communications          | 11458062   | 07/17/2006  | 7530078    | 05/05/2009 |
| 21. | TIBCO Software Inc. | Methods for efficient data version verification  | 11468753   | 08/30/2006  | 7606836    | 10/20/2009 |
| 22. | TIBCO Software Inc. | Method for allocating shared computing infrastructure for application server-based deployments | 11487130   | 07/14/2006  | 7584281    | 09/01/2009 |
| 23. | TIBCO Software Inc. | Customized reporting and mining of event data  | 11623010   | 01/12/2007  | 7925678    | 04/12/2011 |
| 24. | TIBCO Software Inc. | Stream processor with compiled programs  | 11644189   | 12/22/2006  | 9038041    | 05/19/2015 |
| 25. | TIBCO Software Inc. | Data parallelism and parallel operations in stream processing                                  | 11644217   | 12/22/2006  | 8769485    | 07/01/2014 |
| 26. | TIBCO Software Inc. | Systems and methods for automating certification authority practices                           | 11675987   | 02/16/2007  | 8984280    | 03/17/2015 |
| 27. | TIBCO Software Inc. | Efficient transformation of information between a source schema and a target schema            | 11734105   | 04/11/2007  | 8392356    | 03/05/2013 |



|     | <b>Assignee</b>                  | <b>Patent Title</b>  | <b>Serial No.</b> | <b>Filing Date</b> | <b>Patent No.</b> | <b>Issue Date</b> |
|-----|----------------------------------|--|-------------------|--------------------|-------------------|-------------------|
| 28. | TIBCO Software Inc.              | Method and system for providing a visual debugger for an interpreted statistical language                  | 11784209          | 04/04/2007         | 8087002           | 12/27/2011        |
| 29. | TIBCO Software Inc.              | Searching for associated events in log data  | 11866337          | 10/02/2007         | 8306967           | 11/06/2012        |
| 30. | TIBCO Software Inc.              | Adaptive polling   | 11981137          | 10/31/2007         | 8195739           | 06/05/2012        |
| 31. | TIBCO Software Inc. <sup>2</sup> | Java virtual machine having integrated transaction management system                                       | 12433094          | 04/30/2009         | 8219852           | 07/10/2012        |
| 32. | TIBCO Software Inc. <sup>3</sup> | Java virtual machine having integrated transaction management system                                       | 12433742          | 04/30/2009         | 8606877           | 12/10/2013        |
| 33. | TIBCO Software Inc.              | Monitoring a message associated with an action   | 12522907          | 05/07/2010         | 8510467           | 08/13/2013        |
| 34. | TIBCO Software Inc.              | Message descriptions   | 12536444          | 08/05/2009         | 8386498           | 02/26/2013        |
| 35. | TIBCO Software Inc. <sup>4</sup> | JAVA virtual machine having integrated transaction management system and facility to query managed objects | 12576186          | 10/08/2009         | 8407723           | 03/26/2013        |
| 36. | TIBCO Software Inc.              | Policy-based storage structure distribution  | 12762249          | 04/16/2010         | 9235623           | 04/16/2010        |
| 37. | TIBCO Software Inc.              | Joining of machines in a connected instance group of a networked computing environment                     | 12840205          | 07/20/2010         | 8996609           | 03/31/2015        |
| 38. | TIBCO Software Inc.              | Intelligent console for content-based interactivity  | 12906862          | 10/18/2010         | 8966368           | 02/24/2015        |
| 39. | TIBCO Software Inc.              | Systems and methods for searching multiple related tables  | 13077918          | 03/31/2011         | 9607044           | 03/28/2017        |
| 40. | TIBCO Software Inc.              | Customized reporting and mining of event data  | 13084288          | 04/11/2011         | 8380752           | 02/19/2013        |
| 41. | TIBCO Software Inc.              | Integrated phonetic matching methods and systems   | 13098435          | 04/30/2011         | 10275518          | 04/30/2019        |

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<sup>2</sup> F/K/A TIBCO Kabira LLC

<sup>3</sup> F/K/A TIBCO Kabira LLC

<sup>4</sup> F/K/A TIBCO Kabira LLC

|     | <b>Assignee</b>                  | <b>Patent Title</b>   | <b>Serial No.</b> | <b>Filing Date</b> | <b>Patent No.</b> | <b>Issue Date</b> |
|-----|----------------------------------|---|-------------------|--------------------|-------------------|-------------------|
| 42. | TIBCO Software Inc.              | Managing static data structures of legacy software in dynamic class loader environments   | 13104369          | 05/10/2011         | 8789010           | 07/22/2014        |
| 43. | TIBCO Software Inc.              | Distillation and reconstruction of provisioning components                                | 13116528          | 05/26/2011         | 8560895           | 10/15/2013        |
| 44. | TIBCO Software Inc.              | Capability model for deploying componentized applications                                 | 13117113          | 05/26/2011         | 8930941           | 01/06/2015        |
| 45. | TIBCO Software Inc.              | Capability model for deploying componentized applications                                 | 13117115          | 05/26/2011         | 8930942           | 01/06/2015        |
| 46. | TIBCO Software Inc.              | Suffix array candidate selection and index data structure                                 | 13173345          | 06/30/2011         | 8745061           | 06/03/2014        |
| 47. | TIBCO Software Inc.              | Adaptive Data Transmission  | 13225147          | 09/02/2011         | 9191323           | 11/17/2015        |
| 48. | TIBCO Software Inc.              | Dynamic Parsing Rules   | 13225174          | 09/02/2011         | 8484230           | 07/09/2013        |
| 49. | TIBCO Software Inc.              | Random Access Data Compression  | 13225261          | 09/02/2011         | 8433823           | 04/30/2013        |
| 50. | TIBCO Software Inc.              | Fast matching for content-based addressing  | 13298230          | 11/16/2011         | 8694536           | 04/08/2014        |
| 51. | TIBCO Software Inc.              | Fast content-based routing  | 13298232          | 11/16/2011         | 8732320           | 05/20/2014        |
| 52. | TIBCO Software Inc.              | Compression of message information transmitted over a network                             | 13298234          | 11/16/2011         | 9049162           | 11/16/2011        |
| 53. | TIBCO Software Inc.              | Hierarchical bitmasks for indicating the presence or absence of serialized data fields    | 13298236          | 11/16/2011         | 8751671           | 06/10/2014        |
| 54. | TIBCO Software Inc.              | Locking and signaling for implementing messaging transports with shared memory            | 13298237          | 11/16/2011         | 8898399           | 11/25/2014        |
| 55. | TIBCO Software Inc.              | Method and system for providing a visual debugger for an interpreted statistical language | 13333993          | 12/21/2011         | 8286142           | 10/09/2012        |
| 56. | TIBCO Software Inc.              | System and method for loading objects for object-relational mapping                       | 13452654          | 04/20/2012         | 8903797           | 12/02/2014        |
| 57. | TIBCO Software Inc. <sup>5</sup> | Java virtual machine having integrated transaction management system                      | 13464814          | 05/04/2012         | 8438421           | 05/07/2013        |

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<sup>5</sup> F/K/A TIBCO Kabira LLC

|     | Assignee            | Patent Title  | Serial No. | Filing Date | Patent No. | Issue Date |
|-----|---------------------|---|------------|-------------|------------|------------|
| 58. | TIBCO Software Inc. | Method and Apparatus For Retrieving and Combining Summarized Log Data In a Distributed Log Data Processing System | 13536720   | 06/28/2012  | 9298691    | 06/28/2012 |
| 59. | TIBCO Software Inc. | System and method for parsing, summarizing and reporting log data   | 13562047   | 07/30/2012  | 8903836    | 12/02/2014 |
| 60. | TIBCO Software Inc. | Collaborative, contextual enterprise networking systems and methods   | 13594589   | 08/24/2012  | 8892670    | 11/18/2014 |
| 61. | TIBCO Software Inc. | Searching for associated events in log data   | 13668847   | 11/05/2012  | 9171037    | 11/05/2012 |
| 62. | TIBCO Software Inc. | Database query optimization and cost estimation   | 13685489   | 11/26/2012  | 8880511    | 11/04/2014 |
| 63. | TIBCO Software Inc. | Virtual clusters to provide fault containment   | 13782958   | 03/01/2013  | 9444694    | 09/13/2016 |
| 64. | TIBCO Software Inc. | Predictive System for Designing Enterprise Applications   | 13837252   | 03/15/2013  | 9317808    | 03/15/2013 |
| 65. | TIBCO Software Inc. | Data replication protocol with efficient update of replica machines   | 13842389   | 03/15/2013  | 9418130    | 08/16/2016 |
| 66. | TIBCO Software Inc. | Data replication protocol with steady state data distribution and quorum formation                                | 13842443   | 03/15/2013  | 9081843    | 07/14/2015 |
| 67. | TIBCO Software Inc. | Semantics-oriented analysis of log message content  | 13946592   | 07/19/2013  | 9336203    | 07/19/2013 |
| 68. | TIBCO Software Inc. | Just in time compilation (JIT) for business process execution   | 13975000   | 08/23/2013  | 9519879    | 12/13/2016 |
| 69. | TIBCO Software Inc. | Message matching  | 14012712   | 08/28/2013  | 10051438   | 08/14/2018 |
| 70. | TIBCO Software Inc. | Modularized XML namespaces  | 14188371   | 02/14/2014  | 9323501    | 02/24/2014 |
| 71. | TIBCO Software Inc. | Hierarchical bitmasks for indicating the presence or absence of serialized data fields                            | 14300051   | 06/09/2014  | 9137337    | 06/09/2014 |
| 72. | TIBCO Software Inc. | Data mapping service  | 14336173   | 07/21/2014  |            |            |
| 73. | TIBCO Software Inc. | Visual development environment for implementing logic modules   | 14479090   | 09/15/2014  | 9141349    | 09/05/2014 |

|     | Assignee            | Patent Title  | Serial No. | Filing Date | Patent No. | Issue Date |
|-----|---------------------|---|------------|-------------|------------|------------|
| 74. | TIBCO Software Inc. | METHOD AND APPARATUS FOR STORING AND DELIVERING DOCUMENTS ON THE INTERNET                         | 08897786   | 7/21/1997   | 6038601    | 3/14/2000  |
| 75. | TIBCO Software Inc. | METHOD AND APPARATUS FOR STORING AND DELIVERING DOCUMENTS ON THE INTERNET                         | 09379376   | 8/23/1999   | 6629138    | 9/30/2003  |
| 76. | TIBCO Software Inc. | WORKFLOW MANAGEMENT SYSTEM WHEREIN AD-HOC PROCESS INSTANCES CAN BE GENERALIZED                    | 09003701   | 1/7/1998    | 6003011    | 12/14/1999 |
| 77. | TIBCO Software Inc. | CERTIFIED MESSAGE DELIVERY AND QUEUING IN MULTIPOINT PUBLISH/SUBSCRIBE COMMUNICATIONS             | 09502873   | 2/11/2000   | 7080385    | 7/18/2006  |
| 78. | TIBCO Software Inc. | MULTI-PERSPECTIVE VIEWER FOR CONTENT-BASED INTERACTIVITY  | 09134188   | 8/14/1998   | 6144375    | 11/7/2000  |
| 79. | TIBCO Software Inc. | ALLOCATION OF WORK ITEMS VIA QUERIES OF ORGANIZATIONAL STRUCTURE AND DYNAMIC WORK ITEM ALLOCATION | 13104325   | 5/10/2011   | —          | —          |
| 80. | TIBCO Software Inc. | PREDICTIVE SYSTEM FOR DEPLOYING ENTERPRISE APPLICATIONS   | 13837344   | 3/15/2013   | —          | —          |
| 81. | TIBCO Software Inc. | ENHANCED AUGMENTED REALITY DISPLAY FOR USE BY SALES PERSONNEL                                     | 13830993   | 3/14/2013   | —          | —          |
| 82. | TIBCO Software Inc. | MULTI-PERSPECTIVE VIEWER FOR CONTENT-BASED INTERACTIVITY  | 10291330   | 11/7/2002   | —          | —          |

|     | Assignee                         | Patent Title  | Serial No. | Filing Date | Patent No. | Issue Date |
|-----|----------------------------------|---|------------|-------------|------------|------------|
| 83. | TIBCO Software Inc.              | SERVICE PERFORMANCE MANAGER WITH OBLIGATION-BOUND SERVICE LEVEL AGREEMENTS AND PATTERNS FOR MITIGATION AND AUTOPROTECTION | 12432738   | 4/29/2009   | —          | —          |
| 84. | TIBCO Software Inc.              | CAPABILITY MODEL FOR DEPLOYING COMPONENTIZED APPLICATIONS   | 13117117   | 5/26/2011   | —          | —          |
| 85. | TIBCO Software Inc.              | SYSTEM AND METHOD FOR INTELLIGENTLY DISTRIBUTING A PLURALITY OF TRANSACTIONS FOR PARALLEL PROCESSING                      | 13452644   | 4/20/2012   | —          | —          |
| 86. | TIBCO Software Inc.              | BUSINESS CONTEXT SENSITIVE INFERENCE ENGINE   | 13594653   | 8/24/2012   | —          | —          |
| 87. | TIBCO Software Inc.              | INFERENTIAL BUSINESS PROCESSES  | 13594658   | 8/24/2012   | —          | —          |
| 88. | TIBCO Software Inc.              | TICKET IDENTIFICATION AND TRACKING  | 61919075   | 12/20/2013  | —          | —          |
| 89. | TIBCO Software Inc.              | APPLICATION CONGESTION CONTROL  | 14180210   | 2/13/2014   |            |            |
| 90. | TIBCO Software Inc. <sup>6</sup> | APPARATUS AND METHOD FOR TESTING COMPUTER SYSTEMS   | 08887958   | 7/31/1997   | 6023580    | 2/8/2000   |
| 91. | TIBCO Software Inc. <sup>7</sup> | LIBRARY OF SERVICES TO GUARANTEE TRANSACTION PROCESSING APPLICATION IS FULLY TRANSACTIONAL                                | 11959345   | 12/18/2007  | —          | —          |

Reel/Frame 038382/0242 (Executed March 22, 2016):

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<sup>6</sup> F/K/A TIBCO Kabira LLC

<sup>7</sup> F/K/A TIBCO Kabira LLC

|    | Assignee            | Patent Title  | Serial No. | Filing Date | Patent No. | Issue Date |
|----|---------------------|---|------------|-------------|------------|------------|
| 1. | TIBCO Software Inc. | Unified interactive data analysis system  | 11361697   | 02/24/2006  | 9043266    | 05/26/2015 |
| 2. | TIBCO Software Inc. | Methods for analyzing, limiting, and enhancing access to an internet API, web service, and data   | 12011956   | 01/29/2008  | 9027039    | 05/05/2015 |
| 3. | TIBCO Software Inc. | Collaborative, contextual enterprise networking systems and methods                               | 14540996   | 11/13/2014  | 9497263    | 11/15/2016 |
| 4. | TIBCO Software Inc. | Method and systems for selecting a data transmission path for navigating a dynamic data structure | 14919493   | 10/21/2015  | 10255568   | 04/09/2019 |
| 5. | TIBCO Software Inc. | Context aware recommendation of analytic components   | 14925901   | 10/28/2015  | 11030552   | 6/8/2021   |
| 6. | TIBCO Software Inc. | Time-based aggregation to feed a rete engine  | 14925903   | 10/28/2015  | 11164090   | 11/2/2021  |
| 7. | TIBCO Software Inc. | Policy-based Storage Structure Distribution   | 14951469   | 11/24/2015  | 10929401   | 2/23/2021  |
| 8. | TIBCO Software Inc. | Policy-based Storage Structure Distribution   | 14952884   | 11/25/2015  | 9367600    | 11/25/2015 |
| 9. | TIBCO Software Inc. | TICKET USER IDENTIFICATION AND TRACKING   | 14577435   | 12/19/2014  | —          | —          |

Reel/Frame 038754/0649 (Executed May 10, 2016):

|    | Assignee            | Patent Title  | Serial No. | Filing Date | Patent No. |            |
|----|---------------------|---|------------|-------------|------------|------------|
| 1. | TIBCO Software Inc. | Authoring and consuming offline an interactive data analysis document | 14976237   | 12/21/2015  | 9983774    | 05/29/2018 |

Reel/Frame 039592/0810 (Executed August 5, 2016):

|    | Assignee            | Patent Title  | Serial No. | Filing Date | Patent No. |            |
|----|---------------------|---|------------|-------------|------------|------------|
| 1. | TIBCO Software Inc. | Compression of message information transmitted over a network                 | 14702500   | 05/01/2015  | 9736097    | 08/15/2017 |
| 2. | TIBCO Software Inc. | Modularized xml namespaces  | 15076296   | 03/21/2016  | 9864581    | 01/09/2018 |
| 3. | TIBCO Software Inc. | CUSTOM-BUILT PROCESS ENGINE WITH MINIMAL MEMORY AND DISK RESOURCE CONSUMPTION | 62336475   | 5/13/2016   | —          | —          |

|    | Assignee            | Patent Title   | Serial No. | Filing Date | Patent No. |   |
|----|---------------------|--|------------|-------------|------------|---|
| 4. | TIBCO Software Inc. | USING A B-TREE TO STORE GRAPH INFORMATION IN A DATABASE                      | 62336473   | 5/13/2016   | —          | — |
| 5. | TIBCO Software Inc. | STEPBACK MECHANISM TO DEVELOP AND DIAGNOSE PROCESS APPLICATIONS              | 62337156   | 5/16/2016   | —          | — |
| 6. | TIBCO Software Inc. | EXECUTION MANAGER FOR BINARY OBJECTS OPERATING ACROSS PRIVATE ADDRESS SPACES | 62338702   | 5/19/2016   | —          | — |

Reel/Frame 041791/0203 (Executed February 23, 2017):

|    | Assignee            | Patent Title  | Serial No. | Filing Date | Patent No. | Issue Date |
|----|---------------------|---|------------|-------------|------------|------------|
| 1. | TIBCO Software Inc. | Custom-built process engine with minimal memory and disk resource consumption | 15274120   | 09/23/2016  | 10216498   | 02/26/2019 |
| 2. | TIBCO Software Inc. | Just in time compilation (JIT) for business process execution                 | 15344138   | 11/04/2016  | 10311392   | 06/04/2019 |
| 3. | TIBCO Software Inc. | Using a b-tree to store graph information in a database                       | 15357924   | 11/21/2016  | 10579680   | 03/03/2020 |
| 4. | TIBCO Software Inc. | ADAPTIVE PAGE REPLACEMENT   | 62424331   | 11/18/2016  | —          | —          |

Reel/Frame 043540/0846 (Executed August 7, 2017):

|    | Assignee            | Patent Title   | Serial No. | Filing Date | Patent No. | Issue Date |
|----|---------------------|--|------------|-------------|------------|------------|
| 1. | TIBCO Software Inc. | Execution manager for binary objects operating across private address spaces | 15582336   | 04/28/2017  | 10528391   | 01/07/2020 |

Reel/Frame 044032/0704 (Executed October 31, 2017):

|    | Assignee            | Patent Title  | Serial No. | Filing Date | Patent No. | Issue Date |
|----|---------------------|---|------------|-------------|------------|------------|
| 1. | TIBCO Software Inc. | Compression of message information transmitted over a network                           | 15647237   | 07/11/2017  | 10097487   | 10/09/2018 |
| 2. | TIBCO Software Inc. | Auto-generation of api documentation via implementation-neutral analysis of api traffic | 15662140   | 07/27/2017  | 11074067   | 7/27/2021  |

|    | Assignee            | Patent Title   | Serial No. | Filing Date | Patent No. | Issue Date |
|----|---------------------|--|------------|-------------|------------|------------|
| 3. | TIBCO Software Inc. | PATCHING JSON DOCUMENTS THAT CONTAIN ARRAYS UNDERGOING CONCURRENT MODIFICATION | 62514662   | 06/02/2017  | —          | —          |

Reel/Frame 045747/0307 (Executed May 1, 2018):

|    | Assignee            | Patent Title                                      | Serial No. | Filing Date | Patent No. | Issue Date |
|----|---------------------|---|------------|-------------|------------|------------|
| 1. | TIBCO Software Inc. | Modularized xml namespaces                        | 15831077   | 12/04/2017  | 10095483   | 10/09/2018 |
| 2. | TIBCO Software Inc. | Distributed processing of a large matrix data set | 15908552   | 02/28/2018  | —          | —          |

Reel/Frame 048670/0643 (Executed February 27, 2019):

|    | Assignee            | Patent Title  | Serial No. | Filing Date | Patent No. | Issue Date |
|----|---------------------|---|------------|-------------|------------|------------|
| 1. | TIBCO Software Inc. | Predictive engine for generating multivariate predictive responses                      | 16141635   | 09/25/2018  | 11093848   | 8/17/2021  |
| 2. | TIBCO Software Inc. | Predictive engine for multistage pattern discovery and visual analytics recommendations | 16168661   | 10/23/2018  | —          | —          |

Reel/Frame 049010/0167 (Executed April 16, 2019):

|    | Assignee            | Patent Title  | Serial No. | Filing Date | Patent No. | Issue Date |
|----|---------------------|---|------------|-------------|------------|------------|
| 1. | TIBCO Software Inc. | System and Method for Agglomerative Clustering                        | 14718804   | 05/21/2015  | 10162878   | 12/25/2018 |
| 2. | TIBCO Software Inc. | SYSTEM AND METHOD FOR SELECTING IMPORTANT PARAMETERS IN WIDE DATASETS | 62/780095  | 12/14/2018  | —          | —          |

Reel/Frame 050055/0641 (Executed August 7, 2019):

|    | Assignee            | Patent Title  | Serial No. | Filing Date | Patent No. | Issue Date |
|----|---------------------|---|------------|-------------|------------|------------|
| 1. | TIBCO Software Inc. | Interactive SAR table   | 10439411   | 05/15/2003  | 7805437    | 09/28/2010 |
| 2. | TIBCO Software Inc. | Data mining and model generation using an in-database analytic flow generator | 13357246   | 01/24/2012  | 9043337    | 05/26/2015 |



|     |                     |  |          |            |          |            |
|-----|---------------------|--|----------|------------|----------|------------|
| 3.  | TIBCO Software Inc. | System for managing effective self-service analytic workflows                                | 15214622 | 07/20/2016 | —        | —          |
| 4.  | TIBCO Software Inc. | Virtual working memory   | 15382269 | 12/16/2016 | —        | —          |
| 5.  | TIBCO Software Inc. | Process modification   | 15406058 | 01/13/2017 | —        | —          |
| 6.  | TIBCO Software Inc. | Stepback mechanism to develop and diagnose process applications                              | 15417635 | 01/27/2017 | 10635160 | 04/28/2020 |
| 7.  | TIBCO Software Inc. | Graph theory and network analytics and diagnostics for process optimization in manufacturing | 15941911 | 03/30/2018 | 10248110 | 04/02/2019 |
| 8.  | TIBCO Software Inc. | Patching json documents that contain arrays undergoing concurrent modification               | 15994686 | 05/31/2018 | 11449470 | 9/20/2022  |
| 9.  | TIBCO Software Inc. | Process control tool for processing big and wide data  | 16352608 | 03/13/2019 | —        | —          |
| 10. | TIBCO Software Inc. | Just in time compilation (JIT) for business process execution                                | 16385411 | 04/16/2019 | 10657476 | 05/19/2020 |
| 11. | TIBCO Software Inc. | SYSTEM FOR EFFICIENT INFORMATION EXTRACTION FROM STREAMING DATA VIA EXPERIMENTAL DESIGNS     | 62816780 | 3/11/2019  | —        | —          |

Reel/Frame 050889/0727 (Executed October 29, 2019):

|    | Assignee            | Patent Title   | Serial No. | Filing Date | Patent No. | Issue Date |
|----|---------------------|--|------------|-------------|------------|------------|
| 1. | TIBCO Software Inc. | System for rapid identification of sources of variation in complex manufacturing processes | 15237978   | 08/16/2016  | 10386822   | 08/20/2019 |
| 2. | TIBCO Software Inc. | MULTI-METHOD SYSTEM FOR OPTIMAL PREDICTIVE MODEL SELECTION                                 | 62858165   | 6/6/2019    | —          | —          |

Reel/Frame 052096/0061 (Executed Mar 4, 2020):

|    | Assignee            | Patent Title                                | Serial No. | Filing Date | Patent No. | Issue Date |
|----|---------------------|---|------------|-------------|------------|------------|
| 1. | TIBCO Software Inc. | Automatic guide for data analysis           | 11173991   | 06/30/2005  | 8296654    | 10/23/2012 |
| 2. | TIBCO Software Inc. | Multi-source data visualization system      | 11824471   | 06/29/2007  | 8190619    | 05/29/2012 |
| 3. | TIBCO Software Inc. | Data visualization system with axis binding | 11824502   | 06/29/2007  | 8566334    | 10/22/2013 |

|     |                     |   |          |            |          |            |
|-----|---------------------|---|----------|------------|----------|------------|
| 4.  | TIBCO Software Inc. | Data mining and model generation using an in-database analytic flow generator   | 13357265 | 01/24/2012 | 9043344  | 05/26/2015 |
| 5.  | TIBCO Software Inc. | Systems and methods for analysis of data at disparate data sources  | 13957280 | 08/01/2013 | —        | —          |
| 6.  | TIBCO Software Inc. | Automatic Optimization of Continuous Processes  | 14665292 | 03/23/2015 | 10481919 | 11/19/2019 |
| 7.  | TIBCO Software Inc. | Adaptive Sampling via Adaptive Optimal Experimental Designs to Extract Maximum Information from Large Data Repositories | 14666918 | 03/24/2015 | 10007681 | 06/26/2018 |
| 8.  | TIBCO Software Inc. | Graph Theory and Network Analytics and Diagnostics for Process Optimization in Manufacturing                            | 14690600 | 04/20/2015 | 9952577  | 04/24/2018 |
| 9.  | TIBCO Software Inc. | Method for Performing In-Database Distributed Advanced Predictive Analytics Modeling via Common Queries                 | 14826770 | 08/14/2015 | 10649973 | 05/12/2020 |
| 10. | TIBCO Software Inc. | Context aware recommendation of analytic components   | 14925901 | 10/28/2015 | 11030552 | 6/8/2021   |
| 11. | TIBCO Software Inc. | Time-based aggregation to feed a rete engine  | 14925903 | 10/28/2015 | 11164090 | 11/2/2021  |
| 12. | TIBCO Software Inc. | Auto Query Construction for In-Database Predictive Analytics  | 15067643 | 03/11/2016 | 10671603 | 06/02/2020 |
| 13. | TIBCO Software Inc. | Method for in-database feature selection in high-dimensional inputs   | 15139672 | 04/27/2016 | 10467226 | 11/05/2019 |
| 14. | TIBCO Software Inc. | Detecting important variables and their interactions in big data  | 15186877 | 06/20/2016 | 10839024 | 11/17/2020 |
| 15. | TIBCO Software Inc. | Parameter driven execution of advanced analytic workflows   | 15217907 | 07/22/2016 | —        | —          |
| 16. | TIBCO Software Inc. | Systems and methods for searching multiple related tables   | 15427818 | 02/08/2017 | 10496648 | 12/03/2019 |
| 17. | TIBCO Software Inc. | Platform-agnostic predictive models based on database management system instructions                                    | 15674861 | 08/11/2017 | 10540155 | 01/21/2020 |
| 18. | TIBCO Software Inc. | Adaptive page replacement   | 15812784 | 11/14/2017 | 10691614 | 06/23/2020 |
| 19. | TIBCO Software Inc. | Compression of message information transmitted over a network   | 15942050 | 03/30/2018 | 10560406 | 02/11/2020 |

|     |                     |  |          |            |          |           |
|-----|---------------------|--|----------|------------|----------|-----------|
| 20. | TIBCO Software Inc. | An interpreter for interpreting a data model algorithm and creating a data shema                           | 16104050 | 08/18/2018 | 10891114 | 1/12/2021 |
| 21. | TIBCO Software Inc. | System and method for managing tasks and task workload items between address spaces and logical partitions | 16116771 | 08/29/2018 | 11169846 | 11/9/2021 |
| 22. | TIBCO Software Inc. | System for efficient information extraction from streaming data via experimental designs                   | 16596641 | 10/08/2019 | —        | —         |
| 23. | TIBCO Software Inc. | Using a b-tree to store graph information in a database  | 16691407 | 11/21/2019 | —        | —         |
| 24. | TIBCO Software Inc. | Execution manager for binary objects operating across private address spaces                               | 16706326 | 12/06/2019 | 11216372 | 1/4/2022  |
| 25. | TIBCO Software Inc. | A system for rapid interactive exploration of big data   | 16738999 | 01/09/2020 | 11429623 | 8/10/2022 |

Reel/Frame 060297/0084 (Executed February 26, 2021):

|    | Assignee           | Patent Title   | Serial No. | Filing Date | Patent No. | Issue Date |
|----|--------------------|--|------------|-------------|------------|------------|
| 1. | TIBO Software Inc. | A multi method system for optimal predictive model selection           | 16895337   | 06/08/2020  | —          | —          |
| 2. | TIBO Software Inc. | AUTOMATED MACHINE LEARNING TOOL FOR LEARNING AND EXPLAINING TEXT INPUT | 63080541   | 9/18/2020   | —          | —          |