IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

PARDALIS TECHNOLOGY LICENSING, L.L.C., Plaintiff, v. INTERNATIONAL BUSINESS MACHINES CORPORATION, Defendant.	§ § § § § § § § § § §	CIVIL ACTION NO. 2:22-cv-452 **JURY TRIAL DEMANDED**

PLAINTIFF'S COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Pardalis Technology Licensing, L.L.C., files this Complaint against Defendant International Business Machines Corporation for infringement of U.S. Patent No. 6,671,696 ("the '696 Patent"); U.S. Patent No. 7,136,869 ("the '869 Patent"); U.S. Patent No. 7,949,668 ("the '668 Patent"); U.S. Patent No. 8,307,000 ("the '000 Patent"); U.S. Patent No. 9,690,765 ("the '765 Patent"); U.S. Patent No. 10,409,902 ("the '902 Patent"); and U.S. Patent No. 11,126,790 ("the '790 Patent"), collectively, the "Asserted Patents."

THE PARTIES

1. Plaintiff Pardalis Technology Licensing, L.L.C. ("Pardalis") is a Delaware limited liability company, with its principal place of business at 700 Kihekah Avenue, Pawhuska, Oklahoma 74056.

2. On information and belief, Defendant International Business Machines Corporation ("IBM") is a corporation organized under the laws of the State of New York, having its principal place of business in Armonk, New York 10504. IBM also maintains a regular and established place of business in the Eastern District of Texas, including at 1700 Summit Avenue, Plano, Texas 75074.

IBM has a registered agent for service, CT Corporation System, located at 1999 Bryan Street, Suite 900, Dallas, TX 75201.

JURISDICTION AND VENUE

3. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*., including, without limitation, 35 U.S.C. §§ 271, 281, 284, and 285. This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

4. This Court has specific and general personal jurisdiction over IBM consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute because, *inter alia*, (i) IBM has engaged in continuous, systematic, and substantial business in Texas; (ii) IBM is registered to do business in Texas; (iii) IBM maintains regular and established places of business in this District, including at 1700 Summit Avenue, Plano, Texas 75074; 931 Litsey Road, Roanoke, Texas 76262, Texas; and 615 E. State Highway 121, Suite 33, Coppell, Texas, 75019, Texas; (iv) IBM has committed, directly or through intermediaries (including subsidiaries, agents, distributors, affiliates, retailers, suppliers, integrators, customers, and others), acts of patent infringement in this State. Such acts of infringement include making, offering to sell, selling, testing, and/or using Accused Products (as more particularly identified and described throughout this Complaint, below) in this State and this District and/or inducing others to commit acts of patent infringement in this State. Indeed, IBM has purposefully and voluntarily placed, one or more Accused Products into the stream of commerce through IBM's established distribution channels (including the Internet) with the expectation and intent that such products will be sold to and purchased by consumers in this State, and this District; and with the knowledge and expectation that such products (whether in standalone form or as integrated in downstream products) will be imported into this State, and this District.

5. IBM has derived substantial revenues from its infringing acts occurring within this State and this District. It has substantial business in this State and this District, including: (i) at least part of its infringing activities alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent conduct, and/or deriving substantial revenue from infringing goods offered for sale, sold, and imported, and services provided to Texas residents vicariously through and/or in concert with its agents, intermediaries, distributors, importers, customers, subsidiaries, and/or consumers.

6. This Court has personal jurisdiction over IBM, directly or through intermediaries (e.g., subsidiaries, agents, distributors, affiliates, retailers, suppliers, integrators, customers, and others), including its subsidiaries, e.g., SoftLayer Technologies, Inc. ("Softlayer") and Red Hat, Inc. ("Red Hat"). Including through direction and control of such subsidiaries, IBM has committed acts of direct and/or indirect patent infringement within this State, this District and elsewhere within the United States giving rise to this action and/or has established minimum contacts with this forum such that the exercise of personal jurisdiction over IBM would not offend traditional notions of fair play and substantial justice.

7. Softlayer is a wholly owned subsidiary of the IBM. The primary business of Softlayer is providing cloud computing, storage, and infrastructure solutions, including the provision of the cloud infrastructure for the Accused Products and related services. Upon information and belief, IBM compensates Softlayer for sales, service, marketing, product development, and/or product support. As such, IBM has a direct financial interest in Softlayer, and vice versa.

8. Red Hat is a wholly owned subsidiary of the IBM. The primary business of Red Hat is providing enterprise software products and service solutions, including the provision of the

cloud foundation for the Accused Products via its software products (e.g., Red Hat OpenShift Container Platform). Upon information and belief, IBM compensates Red Hat for sales, service, marketing, product development, and/or product support. As such, IBM has a direct financial interest in Red Hat, and vice versa.

9. In addition, IBM has knowingly induced, and continues to knowingly induce, infringement within this District by advertising, marketing, offering for sale, and/or selling Accused Products that incorporate the fundamental technologies covered by the Asserted Patents. Such advertising, marketing, offering for sale and/or selling of Accused Products is directed to consumers, customers, manufacturers, integrators, suppliers, distributors, resellers, partners, and/or end users, and this includes providing tutorials, instructions, user manuals, advertising, and/or marketing materials facilitating, directing, and encouraging use of infringing functionality with IBM's knowledge thereof.

10. IBM has, thus, in the multitude of ways described above, availed itself of the benefits and privileges of conducting business in this State and willingly subjected itself to the exercise of this Court's personal jurisdiction over it. Indeed, IBM has sufficient minimum contacts with this forum through its transaction of substantial business in this State and this District and its commission of acts of patent infringement as alleged in this Complaint that are purposefully directed towards this State and District.

11. Venue is proper in the Eastern District of Texas pursuant to 28 U.S.C. § 1400(b) because, among other things, (i) IBM is subject to personal jurisdiction in this District; (ii) IBM has committed acts of patent infringement in this District and/or has induced acts of patent infringement by others in this District; and (iii) IBM has a regular and established place of business in Texas and in this District, including (a) at 1700 Summit Avenue, Plano, Texas 75074; (b) as a

result of substantial employees in this District; (c) as a result of IBM's agents' offices and operations in the District, such as the Cyrus One facility in Carrolton, Texas; and (d) substantial property holdings in this District (e.g., as shown in the below screenshots from searches of the Collin County and Denton County Appraisal District websites)

Collin County Appraisal District:[1]

	Property ID ↓ Geographic ID ↓	Owner Name	Property Address	Legal Description	2022 Market Value
1	2124588 P-9000-201-8972-1	IBM CORPORATION	Various Locations Crc Spl	BPP at Various Locations Crc Spl	$5,312
2	2643209 P-9000-208-7247-1	IBM CORPORATION	Various Locations Cfr Sfr	BPP at Various Locations Cfr Sfr	$140
3	2851703 P-9000-222-0191-1	IBM CORPORATION	1700 Summit Ave Plano, TX 75074	BPP at 1700 Summit Ave - Lease Works Brad Checks	$36,420,333
4	2003114 P-9000-293-2421-1	IBM CORPORATION	Various Locations Cpl Spl	BPP at Various Locations Cpl Spl	$15,611,956
5	2079616 P-9000-299-4870-1	IBM CORPORATION	Various Locations Cmc Smc	BPP at Various Locations Cmc Smc	$20,822

Denton County Appraisal District:[2]

Property ID	Geographic ID	Type	Property Address	Owner Name	DBA Name	Appraised Value
583724		Personal	ROANOKE TX	IBM CORPORATION	IBM CORPORATION	$33,183
583730		Personal	COPPELL TX	IBM CORPORATION	IBM CORPORATION	$135,729
583748		Personal	LEWISVILLE TX	IBM CORPORATION	IBM CORPORATION	$1,034,276
943691	P943691	Personal	CARROLLTON TX	IBM CORPORATION	IBM CORPORATION	$3,496,924
976738	1366316-101120-02452	Personal		IBM CORPORATION		$661,610
976953	1297526-98867-024520	Personal		IBM CORPORATION		$4,711,170

THE ASSERTED PATENTS AND TECHNOLOGY

12. Pardalis is the sole and exclusive owner of all right, title, and interest in the '696 Patent, the '869 Patent, the '668 Patent, the '000 Patent, the '765 Patent, the '902 Patent, and the '790 Patent and holds the exclusive right to take all actions necessary to enforce its rights in, and to, the Asserted Patents, including the filing of this patent infringement lawsuit. Pardalis also has the right to recover all damages for past infringements of the Asserted Patents.

[1] Collin County Appraisal District website, available at https://www.collincad.org/propertysearch.
[2] Denton County Appraisal District website, available at available at https://www.dentoncad.com/.

13. The ’696 Patent is entitled, “Informational Object Authoring and Distribution System.” The ’696 Patent lawfully issued on December 30, 2003, and stems from U.S. Patent Application No. 09/934,951, which was filed on August 20, 2001. A copy of the ’696 patent is attached hereto as Ex. A.

14. The ’869 Patent is entitled, “Common Point Authoring System for Tracking and Authenticating Objects in a Distribution Chain.” The ’869 Patent lawfully issued on November 14, 2006, and stems from U.S. Patent Application No. 10/684,045, which was filed on October 10, 2003. The ’869 Patent is a continuation-in-part of the ’696 Patent. A copy of the ’869 patent is attached hereto as Ex. B.

15. The ’668 Patent is entitled, “Common Point Authoring System for the Complex Sharing of Hierarchically Authored Data Objects in a Distribution Chain.” The ’668 Patent lawfully issued on May 24, 2011, and stems from U.S. Patent Application No. 11/595,569, which was filed on November 10, 2006. The ’668 Patent is a continuation-in-part of the ’869 Patent. A copy of the ’668 Patent is attached hereto as Ex. C.

16. The ’000 Patent is entitled, “Common Point Authoring System for the Complex Sharing of Hierarchically Authored Data Objects in a Distribution Chain.” The ’000 Patent lawfully issued on November 6, 2012, and stems from U.S. Patent Application No. 13/086,997, which was filed on April 14, 2011. The ’000 Patent is a continuation of the ’668 Patent. A copy of the ’000 patent is attached hereto as Ex. D.

17. The ’765 Patent is entitled, “Common Point Authoring System for the Complex Sharing of Hierarchically Authored Data Objects in a Distribution Chain.” The ’765 Patent lawfully issued on June 27, 2017, and stems from U.S. Patent Application No. 13/669,098, which

was filed on November 5, 2012. The '765 Patent is a continuation of the '000 Patent. A copy of the '765 patent is attached hereto as Ex. E.

18. The '902 Patent is entitled, "Common Point Authoring System for the Complex Sharing of Hierarchically Authored Data Objects in a Distribution Chain." The '902 Patent lawfully issued on September 10, 2019, and stems from U.S. Patent Application No. 15/604,557, which was filed on May 24, 2017. The '902 Patent is a continuation of the '765 Patent. A copy of the '902 patent is attached hereto as Ex. F.

19. The '790 Patent is entitled, "Common Point Authoring System for the Complex Sharing of Hierarchically Authored Data Objects in a Distribution Chain." The '790 Patent lawfully issued on September 21, 2021, and stems from U.S. Patent Application No. 16/563,788, which was filed on September 6, 2019. The '790 Patent is a continuation of the '902 Patent. A copy of the '790 patent is attached hereto as Ex. G.

20. Pardalis and its predecessors complied with the requirements of 35 U.S.C. § 287, to the extent necessary, such that Pardalis may recover pre-suit damages.

21. The inventions claimed in the Asserted Patents relate generally to new and novel approaches to authoring, identifying, authenticating, tracking, and controlling informational objects that are authored in an and along an ownership segmented commercial supply, distribution, or consumption chain. *See, e.g.*, '668 Patent, 1:18-26.

22. The claims of the Asserted Patents are directed to patent eligible subject matter under 35 U.S.C. § 101. They are not directed to an abstract idea, and the technologies covered by the claims consist of ordered combinations of features and functions that, at the time of the invention, were not, alone or in combination, well-understood, routine, or conventional.

23. Indeed, the specifications of the Asserted Patents disclose shortcomings in the prior art and then explain, in detail, the technical way the claimed inventions resolve or overcome those shortcomings. For example, the '688 Patent explains that there were numerous problems in the art, including that "[i]t is a problem in the field of product creation, product distribution, and/or product consumption to immutably author, maintain, and distribute intangible Informational Objects that identify a particular physical product or processed product as it progresses through an ownership segmented commercial supply, distribution, and consumption chain." '668 Patent, 1:32-38. More specifically, it was a problem to authenticate those informational objects, update the objects regarding history of a product, use the objects to track the products, and enable the objects to "become [their] own distinct commodity separate and apart from the commodity of the physical or proceed product to which the [] Object has reference." *Id.* at 1:55-57.

24. Using the beef livestock industry as an example,[3] the patent explains that these deficiencies lead to "information [that] is rarely passed up or down the supply distribution chain," "variable product quality," and "inefficiencies in information flow." *Id.* at 2:23-67. The applicants state that "the lack of information flow is not solvable without technologically addressing the issue of data ownership and control over Informational Objects." *Id.* at 3:32-34. Prior to Pardalis' inventions, however, "there [was] no globally accessible, centralized system in which Owners of animals or animal products, or Consumers of animal products, may uniquely identify and authenticate, track own and control, advertise, sell, and/or purchase Informational Objects having

[3] The specification states that "the beef livestock industry is illustrative of the nature of this problem and is used as an example for the purpose of illustrating the operation of the present Common Point Authoring system but is not intended to limit the scope of the described system. The Common Point Authoring system may have application to any industry where information having reference to a physical or processed product has need to be authored, uniquely identified, authenticated, tracked, Owner controlled, advertised, sold, and/or purchased for compliance with governmental regulations and/or for commercial reasons." '668 Patent, at 3:6 –4:3.

reference to animals and their products within the beef livestock industry's supply, distribution, and consumption chain." *Id.* at 3:45-51.

25. To solve these problems, the '668 Patent discloses, among other things, a system that "automates the authoring, maintenance, and distribution of the Livestock Informational Objects by using an Internet-based paradigm and a centralized repository of unique-identified, immutable Data Elements." *Id.* at 4:52-56. And further, that "[t]he system's interconnectivity allows for the use of an Internet-based paradigm for the purchase and sale of the data as commodities." *Id.* at 4:63-65. "The Common Point Authoring system uses an object-oriented framework for communication," and the Objects "are not document files or database files, but instead are objects that contain sequences of instructions and information on which the instructions operate." Further, each "Object contains pointers that identify a plurality of immutable "building blocks" of information that, when collected, comprise the [Object]." *Id.* at 5:12-25.

26. Such a solution is embodied, for example, in claim 1 of the '668 Patent:

> 1. A common point authoring system for complex sharing of hierarchically authored data objects in a distribution chain, comprising:
>
> authoring means for enabling an authorized authoring member to create data comprising a draft informational object, which uniquely identifies a product for tracking purposes;
>
> authenticating means for enabling an authorized individual to authenticate said draft informational object created by said authorized authoring member;
>
> completion means for converting said authenticated informational object created by said authorized authoring member to a corresponding immutable informational object which is identified by a unique identifier;
>
> database management means for writing said created immutable informational object into a memory for use by authorized accessing members;
>
> draft data element means for enabling an authorized authoring member to create data comprising at least one draft data element;
>
> wherein said authoring means incorporates said at least one draft data element into said draft informational object;

> wherein said authenticating means comprises:
>
> data element authenticating means for enabling an authorized individual to authenticate said draft data element created by said authorized authoring member; and
>
> wherein said completion means converts said authenticated at least one draft data element to a corresponding immutable draft data element which is identified by a unique identifier.

27. The patent also provides a robust description of one embodiment of the invention set forth in claim 1 of the '668 Patent. For example, the "authoring means" for creating data that comprises an informational object is described in Figure 5 and at column 17, line 63 through column 19, line 5. First, "the Member's identity is checked by the authentication server 141 against an authorized Member database 123." *Id.* at 18:7-9. Then "the authoring client software module executing on the Member's terminal device T1 is checked to identify the version of the software so that the authoring session executing of the Common Point Authoring system 10 can be compatible with the Member's software." *Id.* at 18:15-20. The Member can then "initiate[s] the authoring process" whereby the system "inserts various basic into the unregistered Livestock Informational Object." *Id.* at 18:25-30.

28. Similarly, the specification describes an embodiment of the "authentication means" for authenticating the informational object that the member created. The informational object is checked "for proper content, format, and permissions," and if it is proper, "the authoring server 143 of the Common Point Authoring System 10 generates a unique Livestock Informational Object identification and substitutes this for the filename created by the ember." *Id.* at 19:24-30. With respect to the "completion means for converting" the authenticated informational object into immutable form, the specification explains that the authoring server "date and time stamps" the informational object and "stores [it] in immutable form in the registered Informational Object database." *Id.* at 19:30-35.

29. And the specification also describes how the "database management means" can write the immutable informational object into memory. "This subroutine creates a standard immutable Data Element that comprises the Member name for use in creating one or more Informational Objects, since the Member's name appears on each Informational Object that the author creates. At step 411, the prospective Member enters the unique enrollment number assigned at step 305; and at step 412, the Common Point Authoring system 10 assigns the unique enrollment number as an identifier to the prospective Member's name Data Element. At step 413, the prospective Member's name and registered Data Element identifier are permanently added to the Member database 123, the subroutine ends, and processing exits at Step 414." *Id.* at 17:31-43.

30. At a minimum, the claims of the Asserted Patents are directed to solutions to specific issues with computer functionality and address improvements to computer functionality (e.g., improvements in decentralized computing) through claims that teach specifically how to achieve the desired result.

31. Each of the Asserted Patents have limitations such as these, as well as others that are substantial, meaningful, and concrete, and which tie the claims down and remove them from essentially affecting a monopoly on the allegedly abstract idea of merely doing business.

32. The claims of the Asserted Patents are complex and do more than merely recite the performance of a known business practices on the Internet. Indeed, they are best understood as being necessarily rooted in computer technology in order to solve specific problems in the realm of computer networks.

33. Indeed, the claims of the seven Asserted Patents were never rejected under 35 U.S.C § 101.

THE IBM ACCUSED PRODUCTS

34. IBM makes, uses, sells, offers for sale, and/or imports certain IBM products, their components and processes, including software and application integration systems that incorporate the fundamental technologies covered by the Asserted Patents and/or practice the subject matter claimed by the Asserted Patents including, but not limited to, (i) IBM Blockchain on Bluemix; (ii) IBM Blockchain Platform v1.0; (iii) IBM Blockchain Platform for IBM Cloud; (iv) IBM Blockchain Platform for Anywhere; (v) IBM Blockchain Platform for IBM Cloud Private; (vi) IBM Blockchain Platform for Multicloud; (vii) IBM Blockchain Platform: Hyperledger Fabric Support Edition; and (viii) IBM's Blockchain Solutions (i.e., specialized applications of IBM Blockchain), including, but not limited to, IBM Blockchain Transparent Supply, IBM Food Trust, IBM Blockchain World Wire, IBM Digital Health Pass, as well as internal use by IBM (collectively, the "Accused Products").

35. On information and belief, each Accused Product implements a permissioned blockchain platform that is "a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network."[4] As IBM explains, "[d]ata on the blockchain is replicated, shared and synchronized among parties on a distributed ledger without the need for a central administrator. Unlike owned and managed databases, blockchain provides an independent data-sharing platform."[5]

36. As IBM explains, "[t]he blockchain solution we built captures information about the asset as it moves from party to party in the supply chain (from manufacturer to IBM) and as

[4] Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 3 (2020), available at https://www.ibm.com/topics/what-is-blockchain.
[5] *IBM Food Trust: Onboarding Overview* at p. 3, IBM (2020), available at https://www.ibm.com/downloads/cas/ZPY6EAMW.

the state of the asset is modified (for example, capitalized). Capturing this information in the blockchain gives IBM and its supply chain partners a single source of truth with regard to core asset information."[6] To do so, each Accused Product implements the use of distributed ledger technology, immutable records, and smart contracts to generate and share a series of connected blocks within a permissioned and distributed ledger across a peer-to-peer network, as shown below:

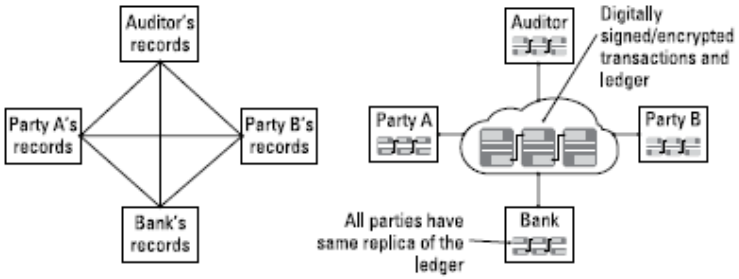


FIGURE 1-1: Business networks before and after blockchain.

Manav Gupta, *Blockchain for Dummies: IBM Limited Edition*, at p. 7 (2017).

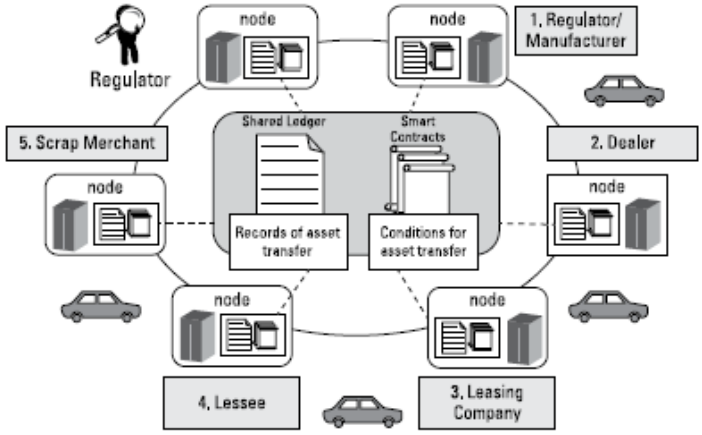


FIGURE 1-3: Tracking vehicle ownership with blockchain.

Manav Gupta, *Blockchain for Dummies: IBM Limited Edition*, at p. 8 (2017).

[6] *Adopting blockchain for enterprise asset management (EAM)*, IBM (last updated Feb. 6, 2019), available at https://developer.ibm.com/tutorials/cl-adopting-blockchain-for-enterprise-asset-management-eam/.

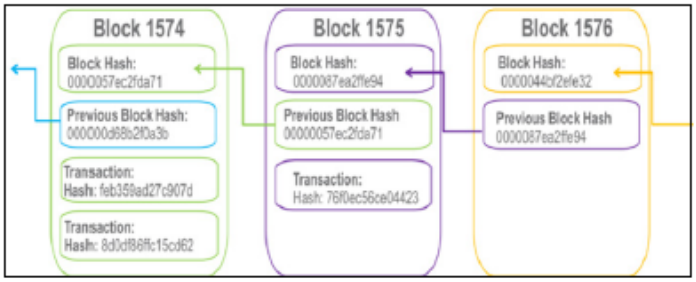
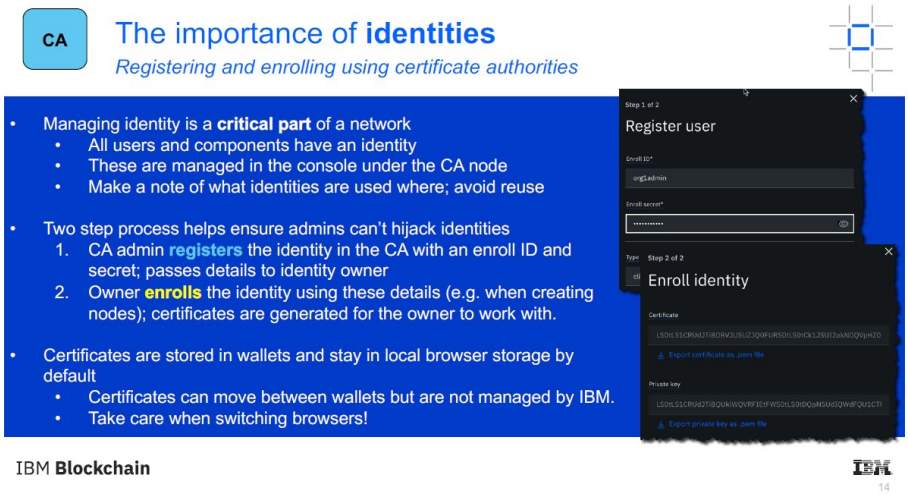


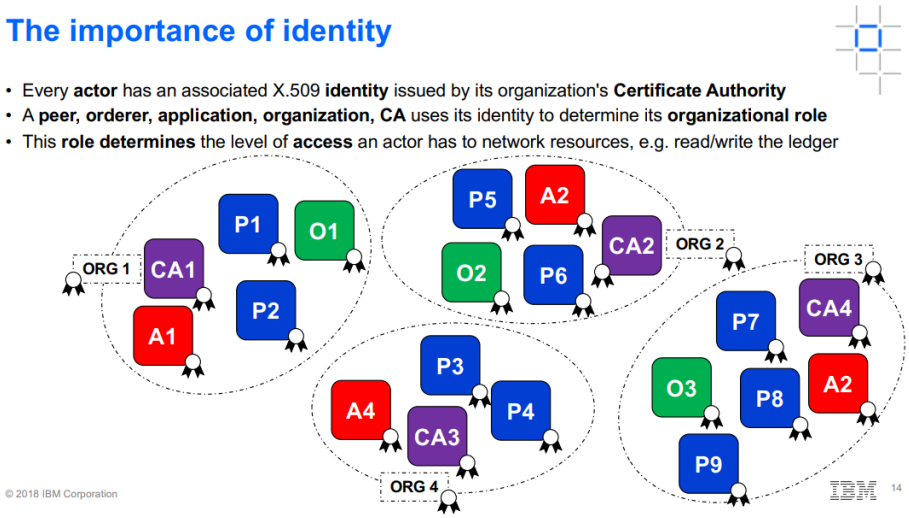
FIGURE 2-1: Blockchain stores transaction records in a series of connected blocks.

Manav Gupta, *Blockchain for Dummies: IBM Limited Edition*, at p. 14 (2017).

37. On information and belief, each Accused Product is based on trusted identities. For example, each Accused Product utilizes one or more certificate authorities to generate unique identities as well as any associated certificates for each permissioned user, which enables the use of policies to constrain network participation (e.g., to read and/or write the shared ledger), as shown below:



IBM Blockchain Platform Technical Series: Using IBM Blockchain Platform at p. 14 (Nov. 21, 2019, version 1.1).



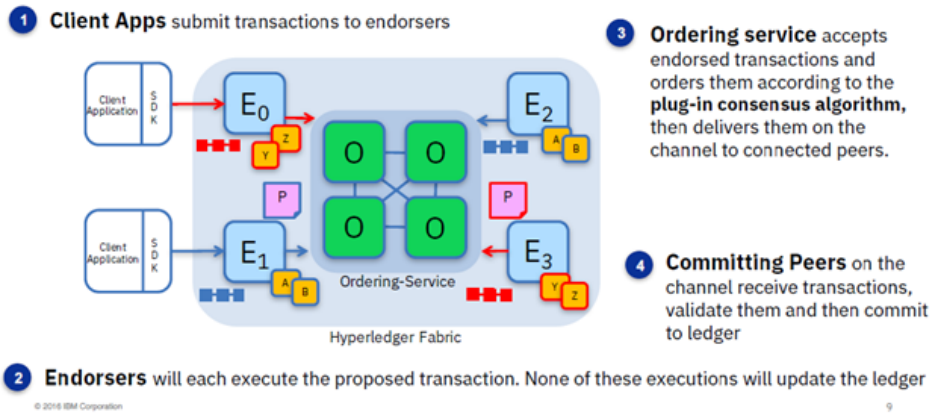
IBM Blockchain Platform: Technical Introduction, at p. 14 (2019, version 1.1).

Role to permission mapping

Role	Permissions
Manager	As a Manager, you have permissions beyond the Writer role. You can do everything a Reader and Writer can do as well as: • Provision new components such as CAs, peers, and ordering services, by using the console or APIs. • Delete provisioned components by using the console or APIs. • Add/remove users and change user access policies. • Change console logging levels by using the console or APIs. • Restart the console by using an API.
Writer	As a Writer, you have permissions beyond the Reader role, including: • Import components by using the console or APIs. • Remove imported components by using the console or APIs. • Register users on a CA. • Add or remove notifications by using the console or APIs.
Reader	As a reader, you can perform read-only actions including: • View console UI. • View console log. • Export components. • Issue any GET API.

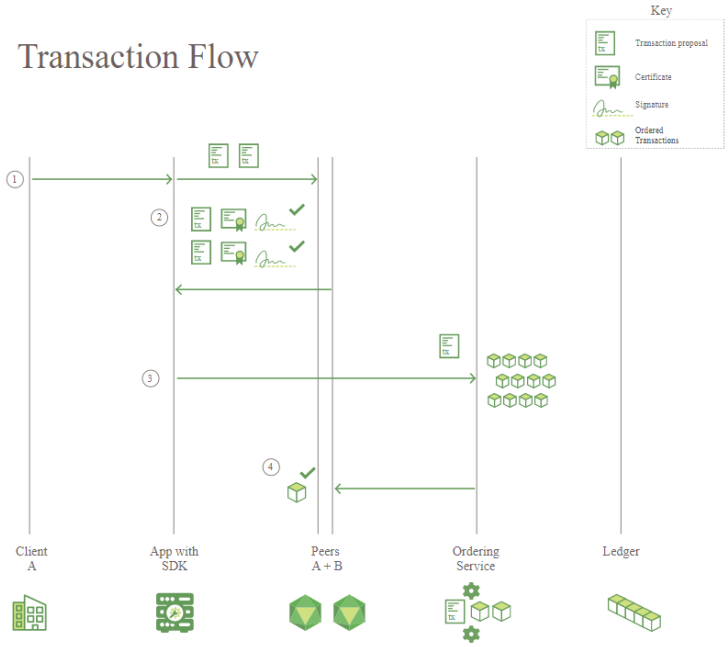
Administering Your Console, IBM (last updated Nov. 2, 2020), available at https://cloud.ibm.com/docs/blockchain-sw?topic=blockchain-sw-console-icp-manage.

38. On information and belief, each Accused Product leverages a checks and balances protocol that ensures transactions are valid, accurate, and verified. For example, as IBM explains, "a transaction process includes: [i] initiation by an authorized client, [ii] verification and signing by endorsers, [iii] inspection and validation of endorser responses, then [iv] validation of the transaction by all peers on the network. All of this must perform successfully before a new block can be appended to the blockchain. For enterprise use, distributed ledger technology must be capable of ensuring data is secure, transparent and final."[7] Examples of this transaction process are illustrated below:



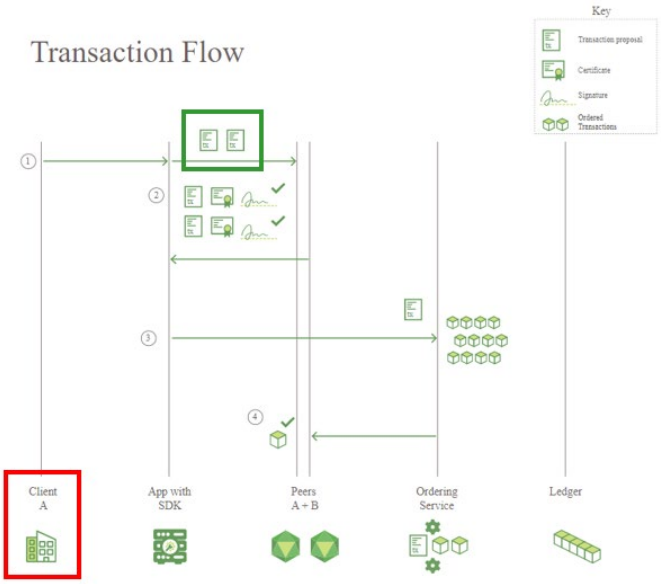
IBM Blockchain Overview, IBM, at p. 9 (2017).

[7] *IBM Blockchain Platform: Technical Overview* at p. 3, IBM (2022), available at https://www.ibm.com/downloads/cas/Q9DGBLV7.

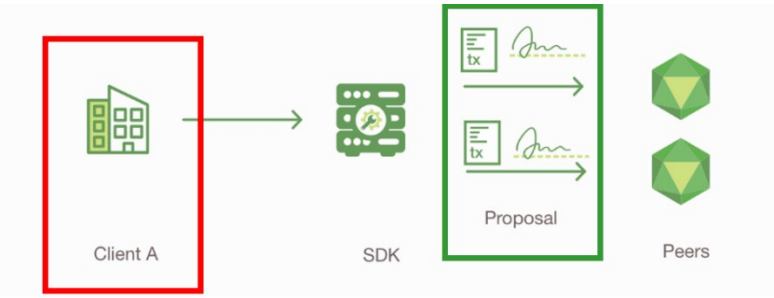


IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority.

39. On information and belief, each Accused Product enables a permissioned client to create data via the submission of a transaction proposal. For example, the transaction proposal may be generated by a smart contract—a business logic component that is agreed upon by the participants of the blockchain network. Once the transaction proposal is generated, it is submitted to other permissioned users, (e.g., Peers A and B illustrated below), on the specified channel for endorsement using an application specification interface such as SDK, as shown below:



IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

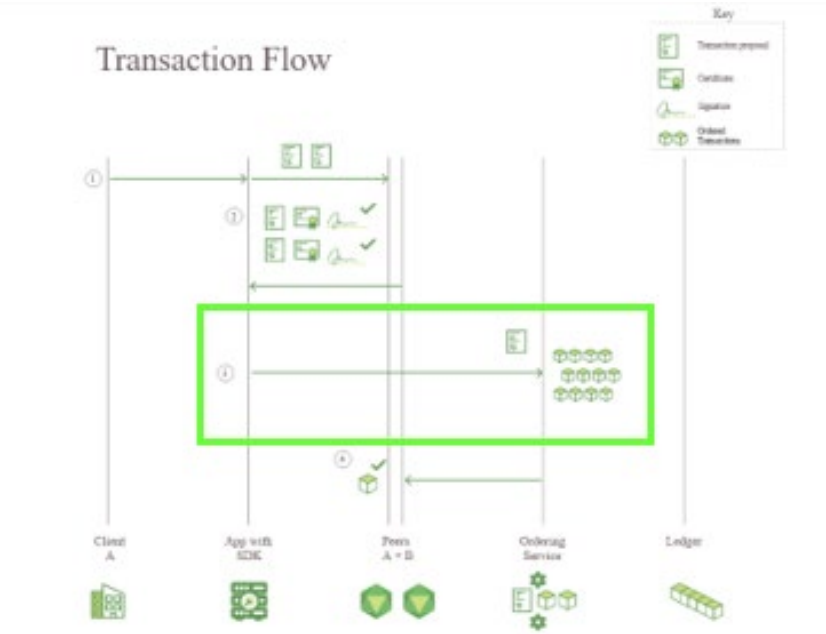


Transaction Flow, available at https://hyperledger-fabric.readthedocs.io/en/release-1.4/txflow.html (emphasis added).

40. On information and belief, each Accused Product employs an endorsement mechanism that enables each permissioned peer to verify the signature of each received transaction proposal and to simulate the execution of the input transaction against a smart contract. As IBM

explains, the endorsement mechanism "is an important part of the network consensus algorithm in the IBM Blockchain Platform"[8] to ensure the authenticity of the transaction proposal.

41. On information and belief, once the transaction proposal is endorsed, the Accused Products enable the application specification interface (e.g., SDK) to forward the endorsed transaction(s) to an ordering service, which converts the endorsed transaction(s) into an ordered transaction (containing the endorsed transaction proposals), as shown below:

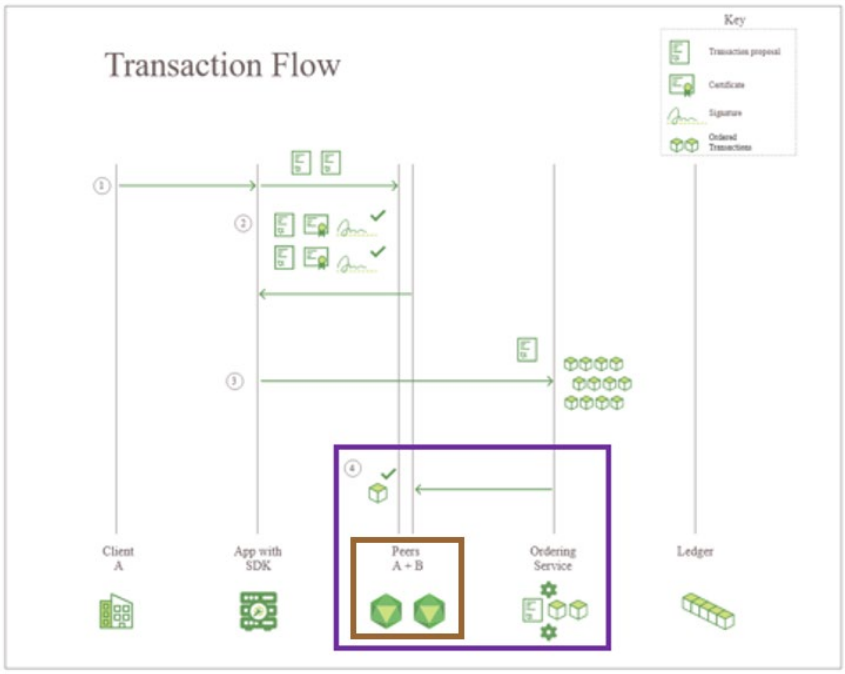


IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

[8] David Gorman, *Introduction to the endorsement of transactions in a business network*, IBM Developer (2018), available at https://developer.ibm.com/articles/an-introduction-to-the-endorsement-of-transactions-in-a-business-network/.

Transaction Flow, available at https://hyperledger-fabric.readthedocs.io/en/release-1.4/txflow.html (emphasis added).

42. On information and belief, once the endorsed transaction(s) are converted into an ordered transaction, each Accused Product distributes the ordered transaction containing one or more endorsed transaction proposals from the ordering service to the channel peers on the network for validation, as shown below:



IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

Transaction Flow, available at https://hyperledger-fabric.readthedocs.io/en/release-1.4/txflow.html.

43. On information and belief, each Accused Product employs a consensus protocol/mechanism to check the validity of each endorsed transaction proposal within the ordered transaction. As IBM explains, "[a] consensus protocol agreed to by all participating members of the business network ensures that the ledger is updated only with network-verified transactions."[9] Once authenticated via the aforementioned validation process, each Accused Product converts the ordered transaction into an immutable block (which is identified by a block hash) and appends it to the record (i.e., block) preceding it on the shared ledger of the network via each peer on the channel, as shown below:

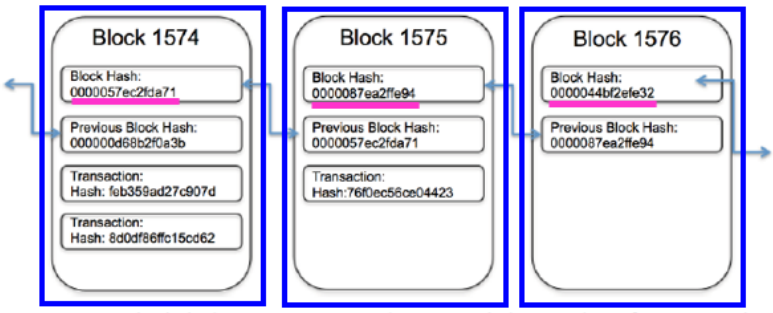


FIGURE 2-1: Blockchain stores transaction records in a series of connected blocks.

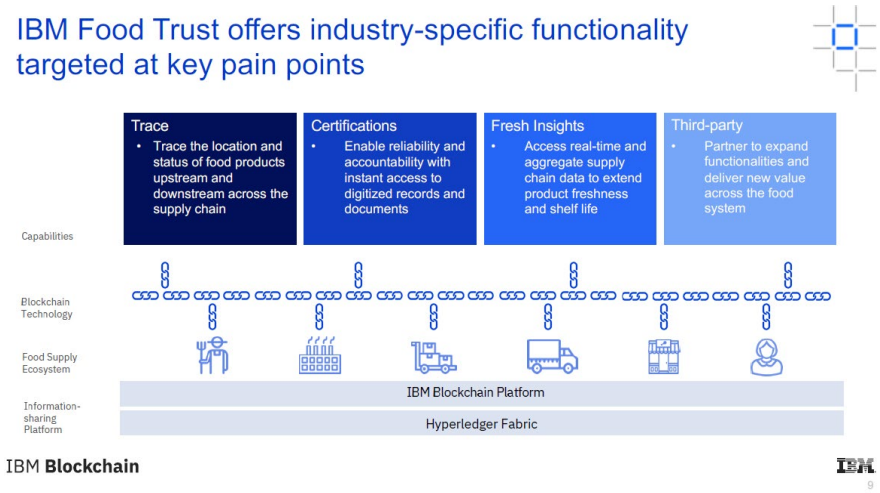
Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain (emphasis added).

[9] *Blockchain Basics: Introduction to Distributed Ledgers*, IBM (last updated June 1, 2019), available at https://developer.ibm.com/tutorials/cl-blockchain-basics-intro-bluemix-trs.

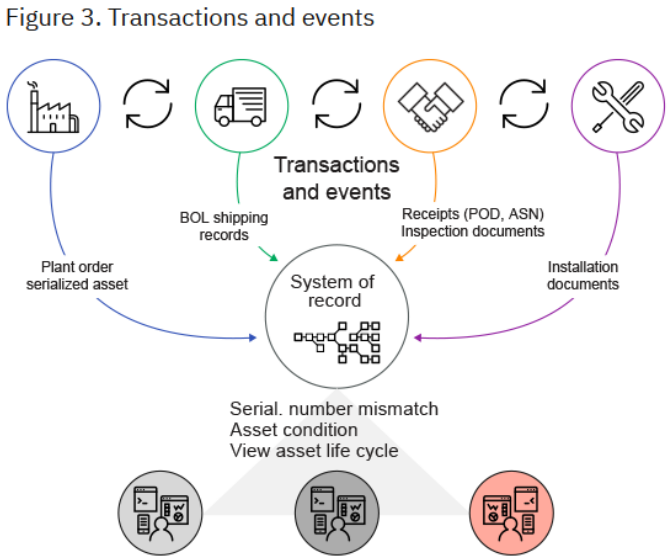
44. As illustrated above, each immutable block contains its own hash as well as the hash of the previous immutable block. "The previous block hash links the blocks together and prevents any block from being altered or a block being inserted between two existing blocks. In this way, each subsequent block strengthens the verification of the previous block and hence the entire blockchain."[10] This prevents any authoring or accessing user from tampering with any already-recorded transaction. By doing so, the Accused Products ensure that all data is permanently recorded as immutable blocks—meaning data will never be altered or deleted. As IBM explains, "[t]his means that once data is entered on the blockchain, it cannot be deleted (unlike data in a database). Edits can be made only by appending new or updated information. With blockchain, you have a permanent record or audit trail of all data entered and edited. No one can edit information without your knowledge."[11] Once appended to the shared distributed ledger, the immutable block has been written into a permanent memory where it is maintained for use by users (e.g., to access, inspect, or add to the data via the creation of a new block).

45. On information and belief, each Accused Product further enables permissioned users to track a transaction and/or asset using the unique identifier associated with that a transaction/asset. For example, IBM's Food Trust blockchain solution (an IBM blockchain industry-specific solution) uses IBM's blockchain technology to improve transparency, standardization and efficiency throughout the food supply chain, as shown below:

[10] Manav Gupta, Blockchain for Dummies: 3rd IBM Limited Edition, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain.
[11] *IBM Food Trust: Onboarding Overview* at p. 3, IBM (2020), available at https://www.ibm.com/downloads/cas/ZPY6EAMW.



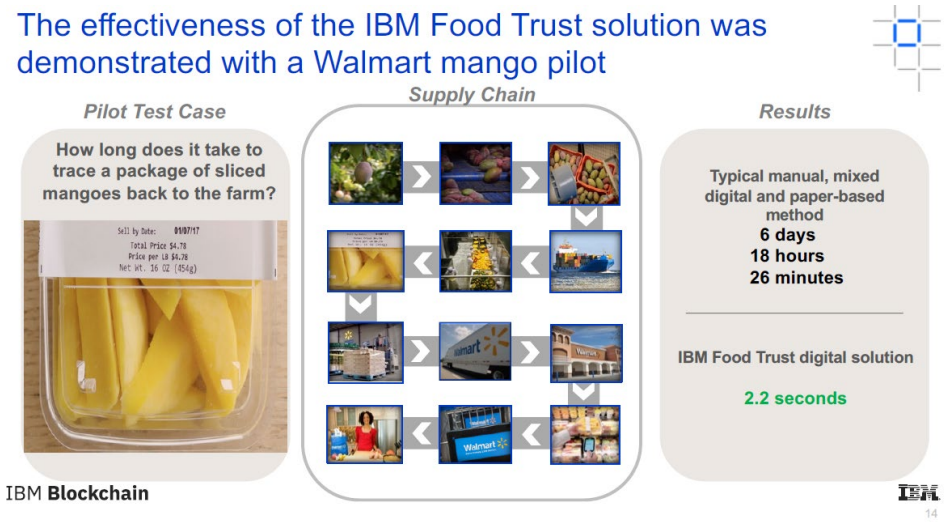
Blockchain Explained Series: Solutions Explained at p. 9, IBM (Aug. 8, 2019, v0.6).



Adopting blockchain for enterprise asset management (EAM), IBM (last updated Feb. 6, 2019), available at https://developer.ibm.com/tutorials/cl-adopting-blockchain-for-enterprise-asset-management-eam/.

Specifically, IBM's Food Trust blockchain solution enables users to track a food product's information as it travels throughout the supply chain from the farmer, processor, retailer, and consumer. In doing so, IBM's Food Trust blockchain solution provides authorized users with immediate access to actionable food supply chain data, including "complete history and current

location of any food item along with its accompanying information."[12] For example, IBM's Food Trust blockchain solution enabled user(s) to "trace a package of sliced mangos back to the farm,"[13] as shown below:



Blockchain Explained Series: Solutions Explained at p. 9, IBM (Aug. 8, 2019, v0.6).

46. Along with IBM's Food Trust blockchain solution, IBM also offers additional industry specific solutions that target other sectors such as banking and financial services, automotive industries, government, healthcare and life sciences, insurance, media and entertainment, retail and consumer goods, telecommunications, travel and transportation, supply chain, oil and gas, and manufacturing. These solutions include, but are not limited to, IBM Transparent Supply, IBM Blockchain World Wire, and IBM Digital Health Pass.

47. The technology discussion above and the exemplary Accused Products provide context for Plaintiff's infringement allegations contained herein.

[12] *About IBM Food Trust* at p. 3, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[13] *Blockchain Explained Series: Solutions Explained* at p. 9, IBM (Aug. 8, 2019, v0.6).

COUNT I

(INFRINGEMENT OF U.S. PATENT NO. 6,671,696)

48. Plaintiff incorporates the preceding paragraphs herein by reference.

49. This cause of action arises under the patent laws of the United States, and, in particular, 35 U.S.C. §§ 271, *et seq*.

50. Pardalis is the owner of all substantial rights, title, and interest in and to the '696 Patent including the right to exclude others and to enforce, sue, and recover damages for past infringements.

51. The '696 Patent is valid, enforceable, and was duly and legally issued by the United States Patent and Trademark Office on December 30, 2003, after full and fair examination.

52. IBM has directly and/or indirectly infringed (by inducing infringement) one or more claims of the '696 Patent in this District and elsewhere in Texas and the United States by making, offering to sell, selling, testing, and/or using, and by actively inducing others to make, use, sell, offer to sell, and/or import, IBM products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the '696 Patent, including, but not limited to, the Accused Products.

Direct Infringement (35 U.S.C. § 271(a))

53. IBM has directly infringed one or more claims of the'696 Patent in this District and elsewhere in Texas and the United States.

54. IBM has directly infringed, either by itself or via its agent(s), at least claim 12 of the '696 Patent[14] as set forth under 35 U.S.C. § 271(a) by making, offering to sell, selling, testing, and/or using the Accused Products.

[14] Throughout this Complaint, wherever Pardalis identifies specific claims of the Asserted Patents infringed by IBM, Pardalis expressly reserves the right to identify additional claims and products

55. By way of illustration only, IBM, via the Accused Products, perform each and every element of claim 12 of the '696 Patent. The Accused Products perform "a method for generating information objects, each of which contains a set of immutable data." For example, each Accused Product generates a series of connected blocks [information objects] within an append-only distributed system of records (i.e., a shared ledger), via a common point authoring system, wherein each block contains a set of immutable data related to a transaction or series of transactions [immutable data] as demonstrated below:

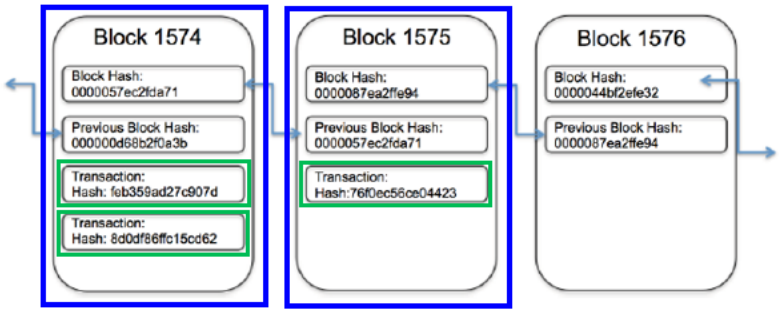
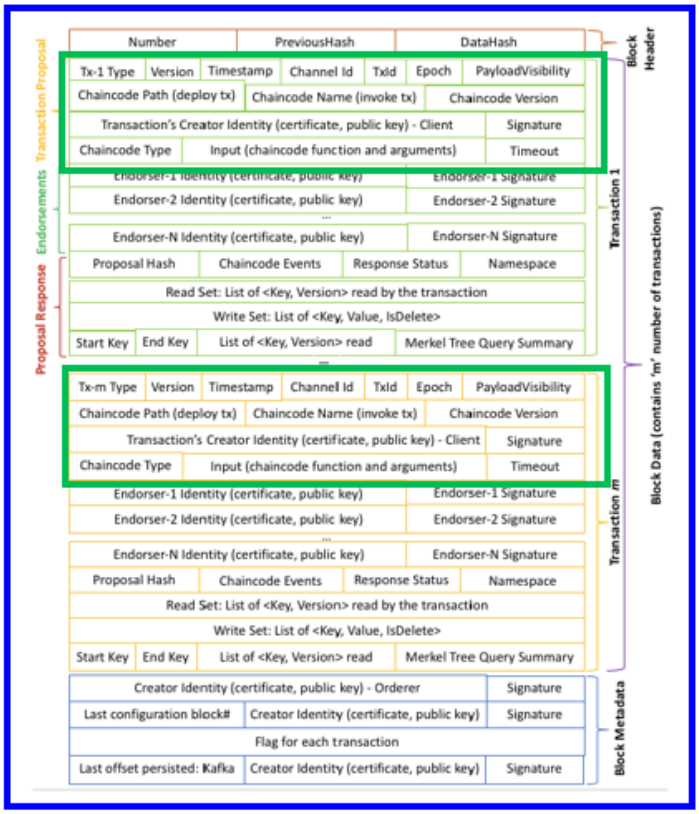


FIGURE 2-1: Blockchain stores transaction records in a series of connected blocks.

Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain (emphasis added).

in its infringement contentions in accordance with applicable local rules and the Court's case management order. Specifically identified claims throughout this Complaint are provided for notice pleading only.



Parth Thakkar, et al., *Performance Benchmarking and Optimizing Hyperledger Fabric Blockchain Platform*, at p. 3 (2018) (emphasis added).

56. The Accused Products practice "maintaining in a read-only mode, a plurality of immutable data elements, each of which is identified by a unique identifier." For example, each Accused Product maintains information related to a transaction or series of transactions [data element] (e.g., who, what, when, where, cost, and condition)[15] in a read-only mode, via an append-only shared ledger that prevents any modification to the transaction data once it has been recorded to the shared ledger. If a transaction is in error within the Accused Products, a new transaction

[15] *What is Blockchain Technology?*, IBM, available at https://www.ibm.com/topics/what-is-blockchain ("The data block can record the information of your choice: who, what, when, where, how much and even the condition – such as the temperature of a food shipment.").

must be used to reverse the error, and both transactions are then visible on the shared ledger. As demonstrated below, each transaction is further identified by a unique hash/transaction ID:

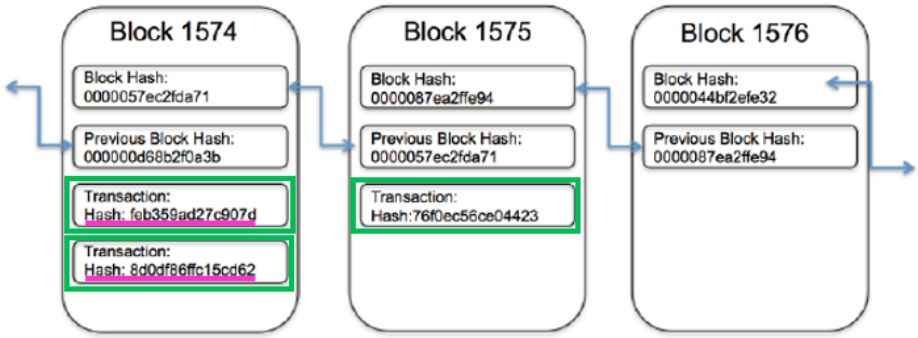
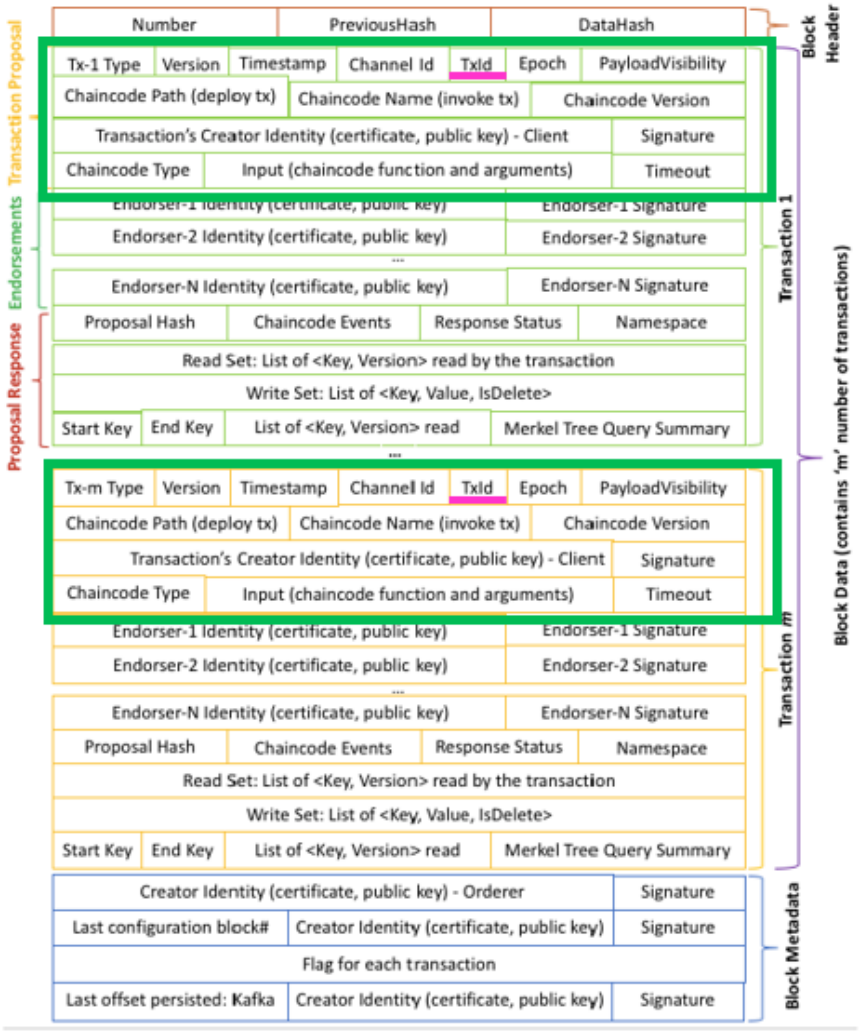


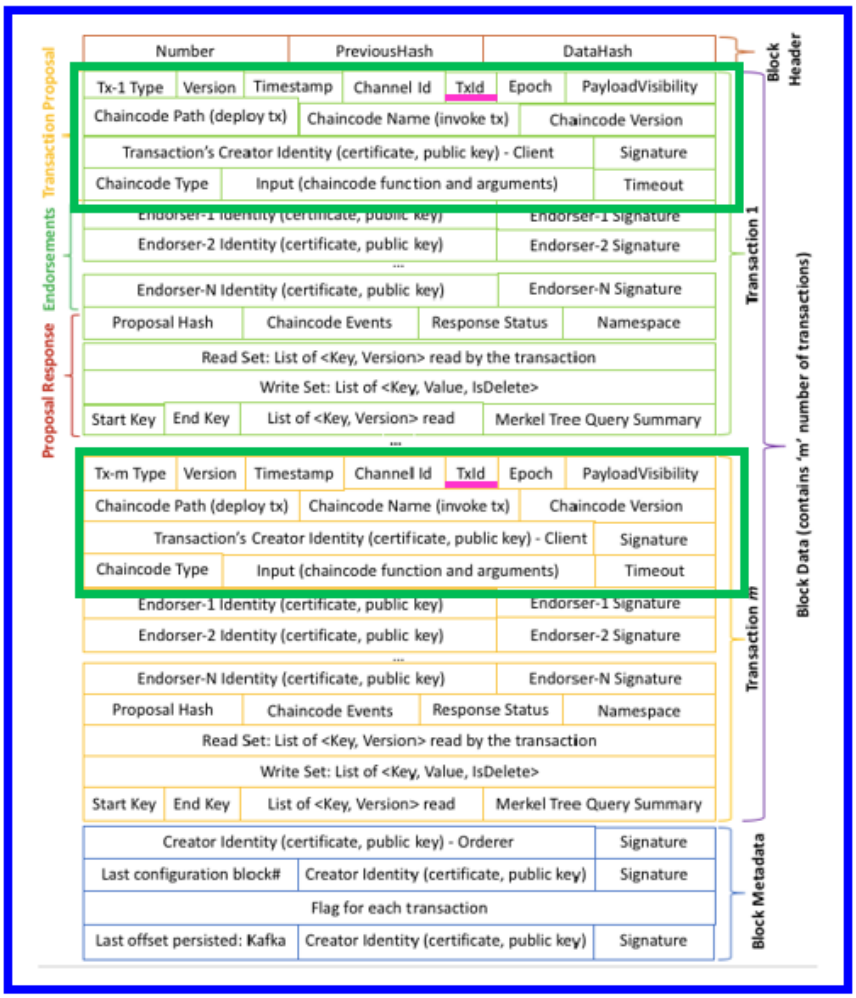
FIGURE 2-1: Blockchain stores transaction records in a series of connected blocks.

Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain (emphasis added).



Parth Thakkar, et al., *Performance Benchmarking and Optimizing Hyperledger Fabric Blockchain Platform*, at p. 3 (2018) (emphasis added).

57. The Accused Products practice "maintaining in a read-only mode, a set of data that defines an informational object, said set of data comprising a plurality of unique identifiers that correspond to a selected set of said plurality of data elements." For example, each Accused Product maintains information related to a series of multiple transactions that defines a block in a read-only mode, wherein the multiple transactions are each identified by a unique transaction hash/transaction ID (e.g., TxId) within the defined block, as illustrated below:

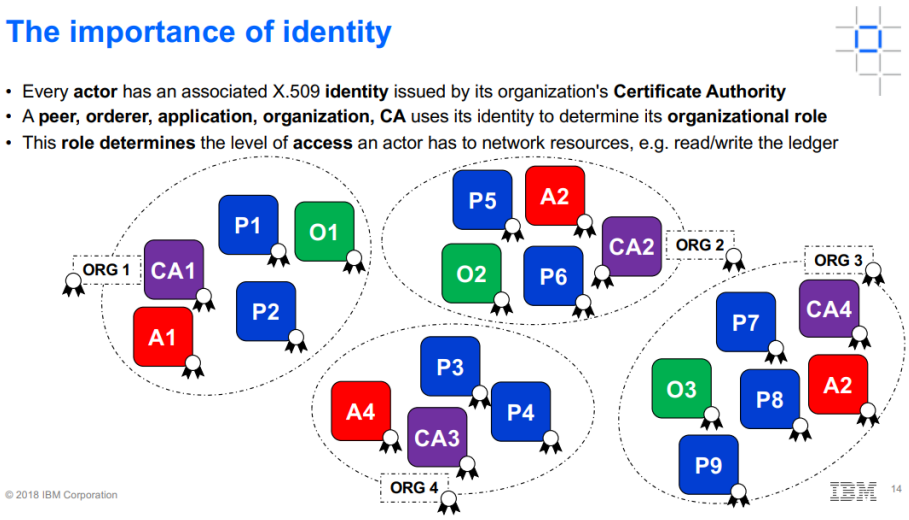


Parth Thakkar, et al., *Performance Benchmarking and Optimizing Hyperledger Fabric Blockchain Platform*, at p. 3 (2018) (emphasis added).

58. As discussed above, the Accused Products maintain in a read-only mode, a plurality of data elements that is each identified by a unique identifier. That set of data that is comprised of a plurality of data elements defines a block. Multiple transactions may be bundled together to form one block. For example, Block 1574 of Figure 2-1 in the illustration above demonstrates a plurality of transactions within one block, each of which is identified by its corresponding unique transaction hash/transaction ID.

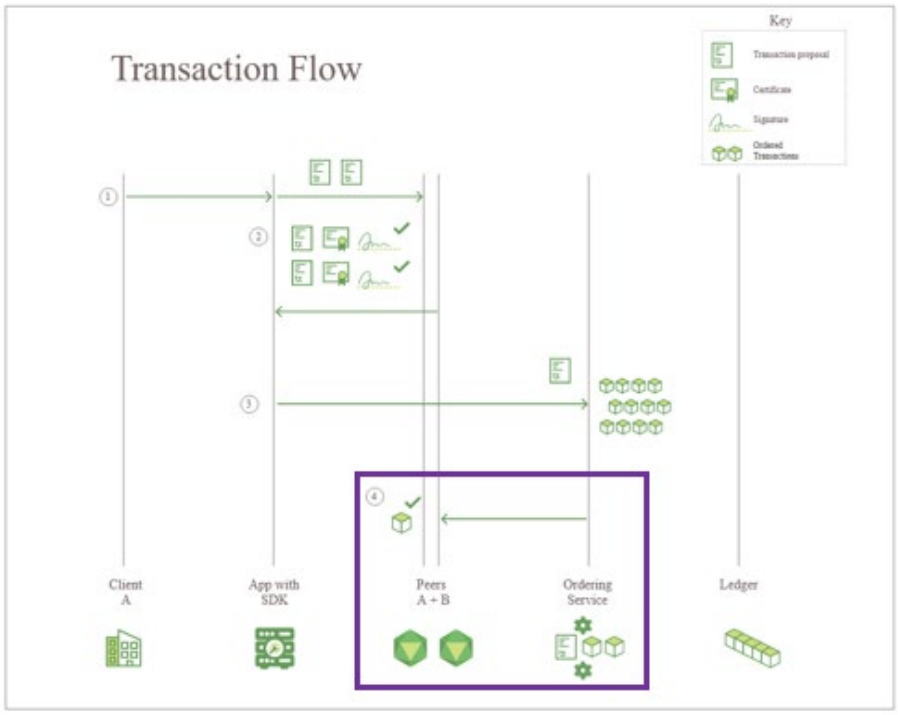
59. The Accused Products practice "enabling an authorized authoring member to create data comprising at least one of a draft data element and a draft informational object." For example,

each Accused Product enables a permissioned client [authorized authoring member], via one or more certificate authorities, to create one or more transaction proposals [draft data element] and one or more ordered transactions [draft informational object]. Specifically, the Accused Products utilize one or more certificate authorities to generate unique identities for each permissioned user, which enables the use of policies to constrain network participation (e.g., to read and/or write the shared ledger) and access to transaction details, as shown below:



IBM Blockchain Platform: Technical Introduction, at p. 14 (2019, version 1.1).

60. The Accused Products practice "authenticating said at least one of a draft data element and a draft informational object created by said authorized authoring member." For example, each Accused Product authenticates each endorsed transaction proposal within the ordered transaction via a consensus protocol. Specifically, each Accused Product distributes the ordered transaction containing one or more endorsed transaction proposals from the ordering service to the channel peers on the network for validation, as shown below:



IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

61. During the validation process, each Accused Product employs a consensus protocol/mechanism to check the validity of each endorsed transaction proposal within the ordered transaction. As IBM explains, "[a] consensus protocol agreed to by all participating members of the business network ensures that the ledger is updated only with network-verified transactions."[16] Therefore, the Accused Products authenticate as required by claim 12 of the '696 Patent via the validation process.

62. The Accused Products practice "converting said authenticated at least one of a draft data element and a draft informational object created by said authorized authoring member to a corresponding immutable at least one of a data element and an informational object." For example,

[16] *Blockchain Basics: Introduction to Distributed Ledgers*, IBM (last updated June 1, 2019), available at https://developer.ibm.com/tutorials/cl-blockchain-basics-intro-bluemix-trs.

once the peers authenticate each endorsed transaction proposal [draft data element] within the ordered transaction [draft informational object] via the aforementioned validation process, each Accused Product converts this ordered transaction containing the endorsed transaction proposals into an immutable block containing validated transactions.

63. The Accused Products practice "writing said created immutable at least one of a data element and an informational object into a memory for use by said first and said second means for maintaining." For example, each Accused Product appends [writes] each authenticated block containing validated transactions [created immutable] to the record (i.e., block) preceding it on the shared ledger of the network [into a memory for use by said first and said second means for maintaining] via each peer on the channel. Specifically, for each valid transaction, "the write sets are committed to current state database."[17] Once the block is committed to the shared ledger, it is immutably written into a memory that cannot be tampered with or changed.

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

64. In addition and/or in the alternative to its direct infringements, IBM has indirectly infringed one or more claims of the '696 Patent by knowingly and intentionally inducing others, including its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers, to directly infringe by making, using, offering to sell, selling and/or importing into the United States the Accused Products.

65. At a minimum, IBM has had knowledge of the '696 Patent based at least on its conduct before the United States Patent and Trademark Office ("USPTO"). For example, U.S. Patent Application Publication No. US2007/0061360 A1 (the publication of the '668 Patent) was

[17] *Transaction Flow*, available at https://hyperledger-fabric.readthedocs.io/en/release-1.4/txflow.html.

cited by the Examiner during the prosecution of U.S. Patent Application Publication No. 2012/0150925 A1, entitled "Proactive Method for Improved Reliability for Sustained Persistence of Immutable Files in Storage Clouds" and assigned to IBM. In addition, IBM has constructive knowledge of the '696 Patent given Pardalis' compliance with 35 U.S.C. § 287.

66. Upon information and belief, since at least the above-mentioned instances when IBM was on notice of the '696 Patent, IBM has actively induced the direct infringements of its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers as set forth under U.S.C. § 271(b). Such inducements have been committed with the knowledge, or with willful blindness to the fact, that the acts induced constitute infringement of the '696 Patent. Indeed, IBM intended to cause and took affirmative steps to induce infringement by, among other things, creating and disseminating advertisements and instructive materials that promote the infringing use of the Accused Products;[18] creating and/or maintaining established distribution channels for the Accused Products into and within the United States; manufacturing the Accused Products in conformity with U.S. laws and regulations; distributing or making available technical documentation supporting use of the Accused Products that promote their features, specifications, and applications—including webinars, interactive sessions, white papers, brochures, and manuals;[19] providing developer tools for the Accused Products—including

[18] *See, e.g.*, *Implementation Guide for IBM Blockchain Platform for Multicloud*, IBM Redbooks, available at www.redbooks.ibm.com/redbooks/pdfs/sg248458.pdf; *Developing a Blockchain Business Network with Hyperledger Composer using the IBM Blockchain Platform Starter Plan*, IBM Redbooks, available at www.redbooks.ibm.com/abstracts/redp5492.html; *Zero to Blockchain, IBM Redbooks Cours*e, available at www.redbooks.ibm.com/Redbooks.nsf/Redbook Abstracts/crse0401.html.

[19] *See, e.g.*, *IBM Blockchain Platform: Technical Overview*, IBM (2022), available at https://www.ibm.com/downloads/cas/Q9DGBLV7; *Getting started with IBM Blockchain Platform*, IBM Documentation, available at https://cloud.ibm.com/docs/blockchain; Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 7 (2020), available at https://www.ibm. com /topics/what-is-blockchain; *IBM Blockchain Platform Console Video*

software development kits (SDKs) and application programming interfaces (APIs); testing and certifying blockchain features in the Accused Products; and by providing technical support, onboarding services, product updates, tutorials, training, and/or related services for these products to purchasers in the United States.[20]

Damages

67. Pardalis has been damaged as a result of IBM's infringing conduct described in this Count. IBM is, thus, liable to Pardalis in an amount that adequately compensates Pardalis for IBM's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II

(INFRINGEMENT OF U.S. PATENT NO. 7,136,869)

68. Plaintiff incorporated the preceding paragraphs herein by reference.

69. This cause of action arises under the patent laws of the United States, and, in particular, 35 U.S.C. §§ 271, et seq.

70. Pardalis is the owner of all substantial rights, title, and interest in and to the '869 Patent including the right to exclude others and to enforce, sue, and recover damages for past infringements.

71. The '869 Patent is valid, enforceable, and was duly and legally issued by the United States Patent and Trademark Office on November 14, 2006, after full and fair examination.

Series, IBM (last updated July 1, 2020), available at https://developer.ibm.com/series/ibm-blockchain-platform-console-video-series/.

[20] *See., e.g., IBM Support for Hyperledger Fabric*, available at www.ibm.com/cloud/blockchain-platform/hyperledger-fabric-support; *Blockchain Tutorials*, IBM Developer, available at https://developer.ibm.com/technologies/blockchain/tutorials/; *IBM Blockchain 101: Quick-start guide for developers*, IBM Developer, available at https://developer.ibm.com/tutorials/cl-ibm-blockchain-101-quick-start-guide-for-developers-bluemix-trs/.

72. IBM has directly and/or indirectly infringed (by inducing infringement) one or more claims of the '869 Patent in this District and elsewhere in Texas and the United States by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell, and/or import, IBM products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the '869 Patent, including, but not limited to, the Accused Products.

Direct Infringement (35 U.S.C. § 271(a))

73. IBM has directly infringed one or more claims of the '869 Patent in this District and elsewhere in Texas and the United States.

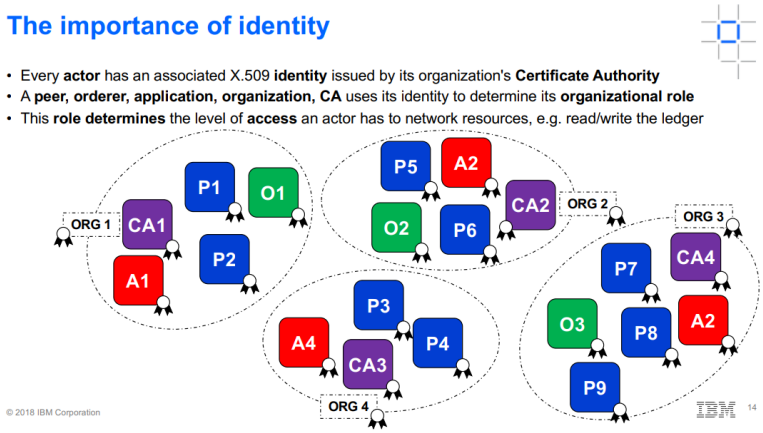
74. IBM has directly infringed, either by itself or via its agent(s), at least claim 9 of the '869 Patent as set forth under 35 U.S.C. § 271(a) by making, offering to sell, selling, testing, and/or using the Accused Products.

75. By way of illustration only, the Accused Products perform each and every element of claim 9 of the '869 Patent. The Accused Products perform "a method for maintaining data for use by authoring and accessing members to track uniquely identified products." For example, each Accused Product maintains a series of ordered and back-linked blocks within an append-only distributed system of records (i.e., a shared ledger) across a peer-to-peer network for permissioned clients and users [authoring and accessing members] to track uniquely identified assets [products]. On information and belief, permissioned users may use the unique transaction hash/transaction ID, associated with a specific transaction (e.g., specific product(s)) on the blockchain, for tracking purposes. For example, IBM's Food Trust blockchain solution maintains data (e.g., food supply chain data) on a blockchain ledger to provide a permission-based, shared view of food ecosystem information for permissioned users to track uniquely identified food products. As IBM explains,

"Food Trust solution users can quickly locate items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code (UPC) [unique identification], using the product name and filtering on dates."[21] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date."[22]

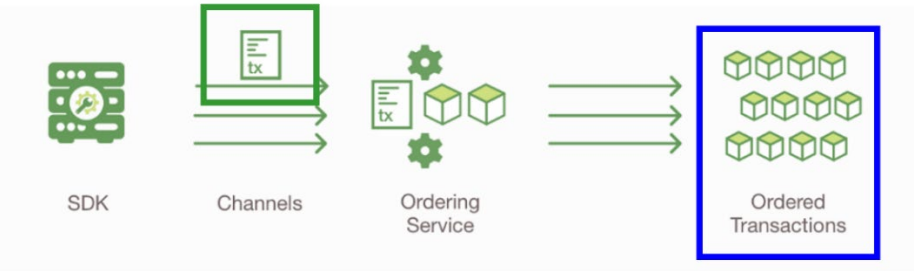
76. The Accused Products practice "enabling an authorized authoring member to create data comprising a draft informational object, which uniquely identifies a product for tracking purposes." For example, each Accused Product enables a permissioned client [authorized authoring member], via one or more certificate authorities, to create an ordered transaction containing one or more endorsed transaction proposals [data comprising a draft informational object] that uniquely identifies an asset [product] for tracking purposes. Specifically, the Accused Products utilize one or more certificate authorities to generate unique identities for each permissioned client, which enables the use of policies to constrain network participation (e.g., to read and/or write the shared ledger) and access to transaction details, as shown below:

[21] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[22] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.

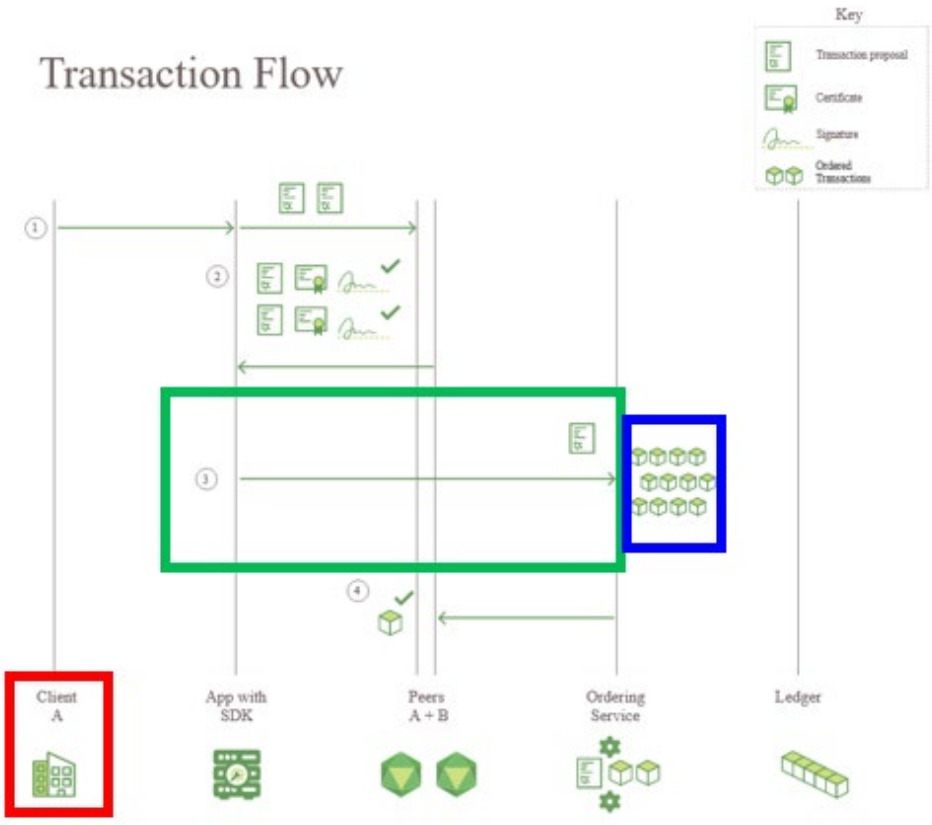


IBM Blockchain Platform: Technical Introduction, at p. 14 (2019, version 1.1).

77. When a client is authorized to write the ledger based on its unique identity [authorized authoring member], each Accused Product enables that permissioned client to create the ordered transaction containing one or more endorsed transaction proposals, as shown below:



Transaction Flow, available at https://hyperledger-fabric.readthedocs.io/en/release-1.4/txflow.html (emphasis added).

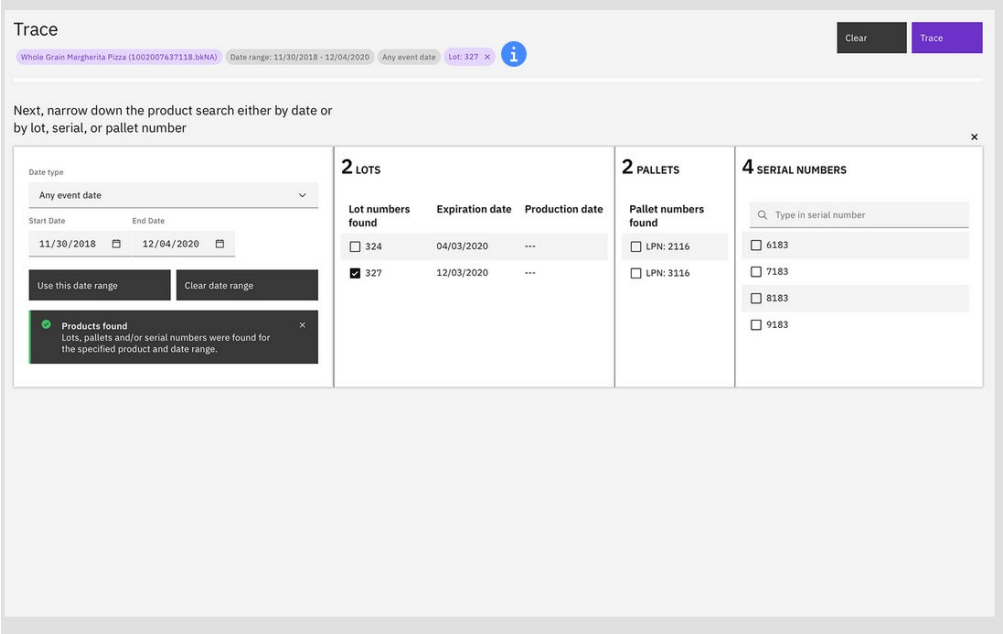


IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

78. For example, IBM's Food Trust blockchain solution enables a permissioned client [authorized authoring member] to create an ordered transaction [draft informational object] that uniquely identifies a food product (e.g., by the product's ID, name or the associated PO number) for tracking purposes. Specifically, IBM's Food Trust solution "assigns predefined roles that grant users authorization to execute specific network tasks on behalf of their organization"[23] in order to "provide[] participants with a permission-based, shared view of food ecosystem information,

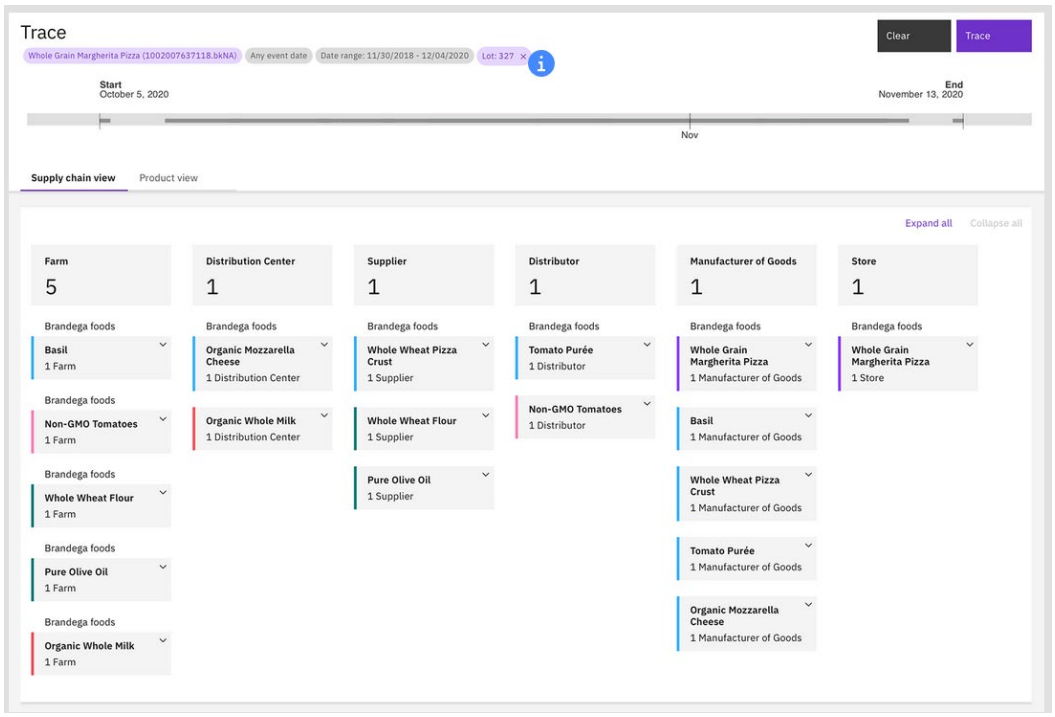
[23] *About IBM Food Trust* at p. 15, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.

allowing convenient data publishing and controlled sharing of information."[24] As IBM explains, "Food Trust solution users can quickly locate items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code (UPC) [unique identification], using the product name and filtering on dates."[25] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date,"[26] as shown below:

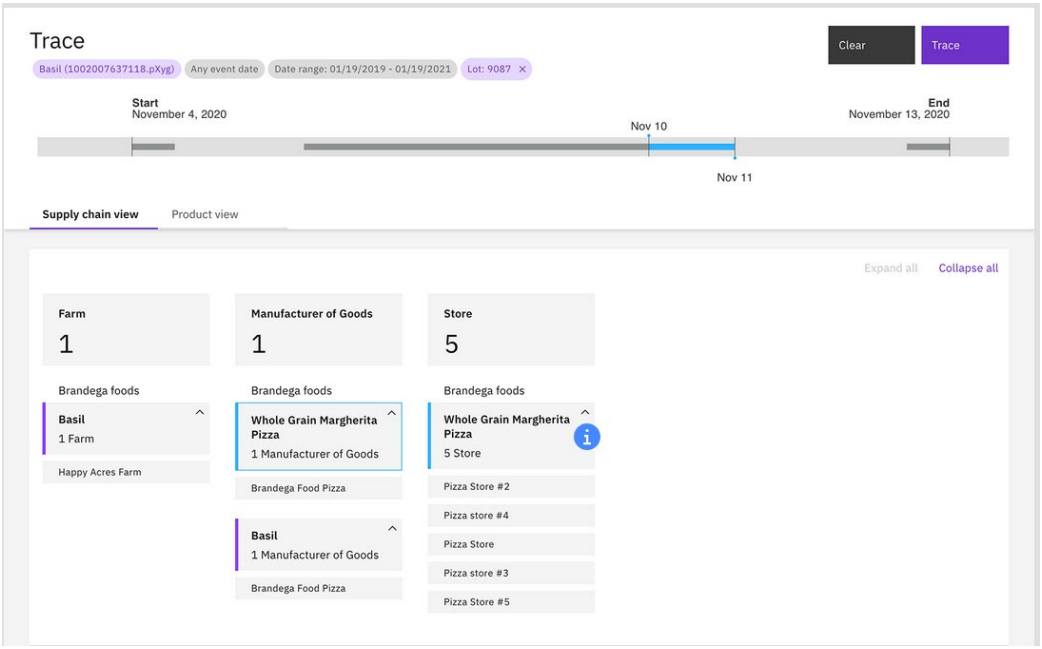


IBM Food Trust: Trace, IBM,
available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.

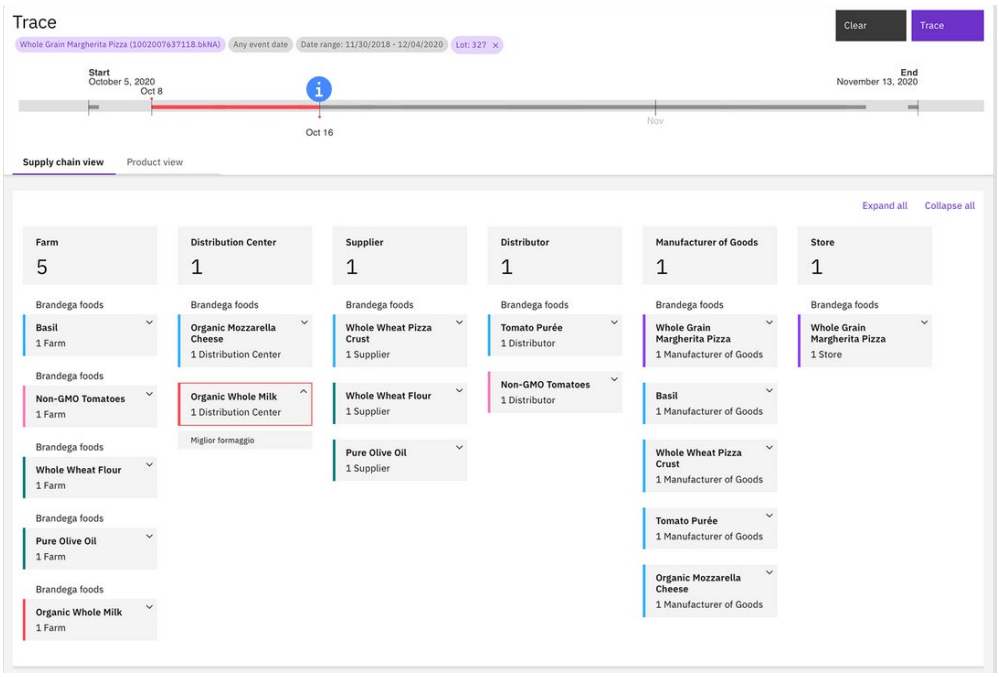
[24] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[25] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[26] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.



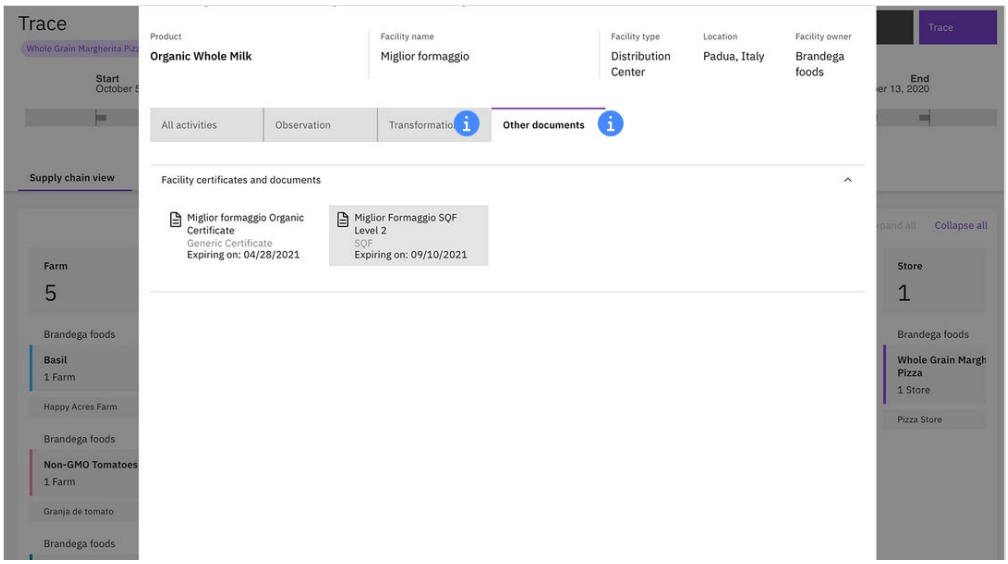
IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



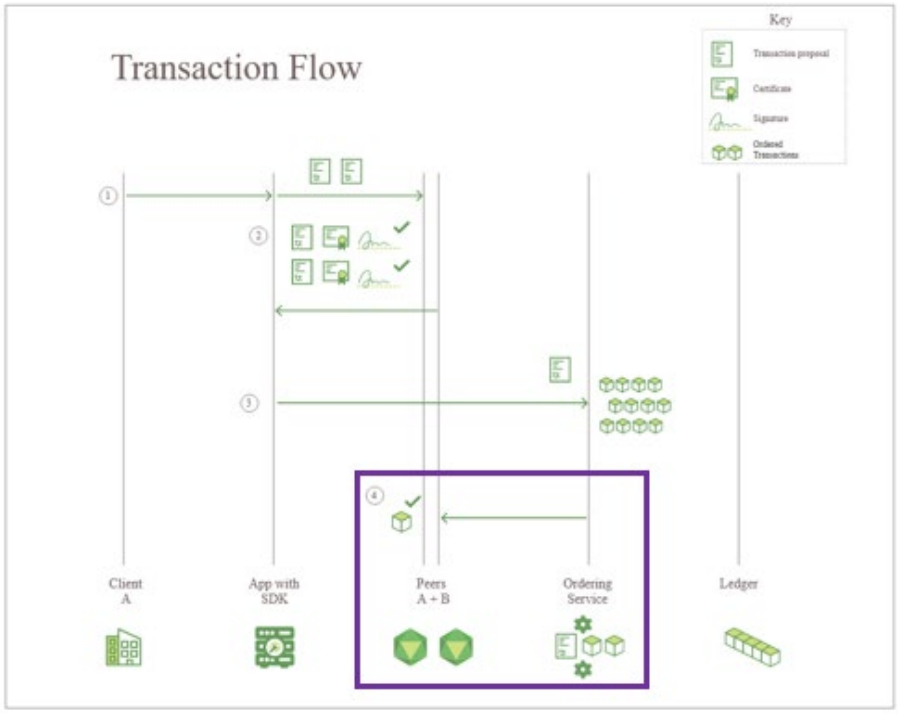
IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.

79. The Accused Products practice "authenticating said draft informational object created by said authorized authoring member." For example, each Accused Product authenticates

each ordered transaction [draft informational object] via a consensus protocol. Specifically, each Accused Product distributes the ordered transaction from the ordering service to the channel peers on the network for validation, as shown below:



IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

80. During the validation process, each Accused Product employs a consensus protocol/mechanism to check the validity of each endorsed transaction proposal within the ordered transaction. As IBM explains, "[a] consensus protocol agreed to by all participating members of the business network ensures that the ledger is updated only with network-verified transactions."[27] Therefore, the Accused Products authenticate as required by claim 9 of the '869 Patent via the validation process.

[27] *Blockchain Basics: Introduction to Distributed Ledgers*, IBM (last updated June 1, 2019), available at https://developer.ibm.com/tutorials/cl-blockchain-basics-intro-bluemix-trs.

81. The Accused Products practice "converting said authenticated informational object created by said authorized authoring member to a corresponding immutable informational object which is identified by a unique identifier." For example, once the peers authenticate the ordered transaction via the aforementioned validation process [authenticated informational object], each Accused Product converts that ordered transaction into an immutable block [immutable informational object], which is identified by a block hash [unique identifier]. As IBM explains, "each block contains a hash (a digital fingerprint or unique identifier),"[28] as shown below:

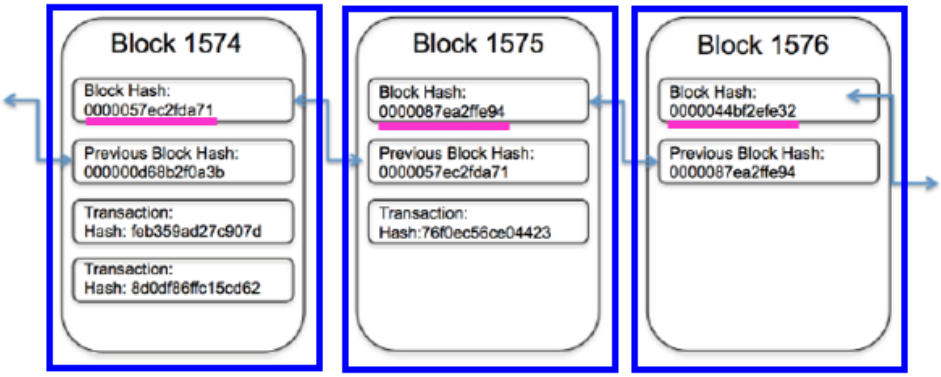


FIGURE 2-1: Blockchain stores transaction records in a series of connected blocks.

Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain (emphasis added).

82. The Accused Products practice "writing said created immutable informational object into a memory for use by authorized accessing members." For example, each Accused Product appends [writes] each authenticated block [created immutable informational object] to the record (i.e., block) preceding it on the shared ledger of the network [into a memory] via each peer on the channel to become accessible [for use] to permissioned users [authorized accessing

[28] Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain (emphasis added).

members] (e.g., to access, inspect, or add to the data via the creation of a new block). Once the block is committed to the shared ledger, it is immutably written into a memory that cannot be tampered with or changed.

83. The Accused Products practice "updating an informational object by creating a new informational object relating back to said informational object and containing new data." For example, each Accused Product updates a previously appended block [informational object] through the creation of an additional block [new informational object] and appending it to the shared ledger following the previous block, as shown below:

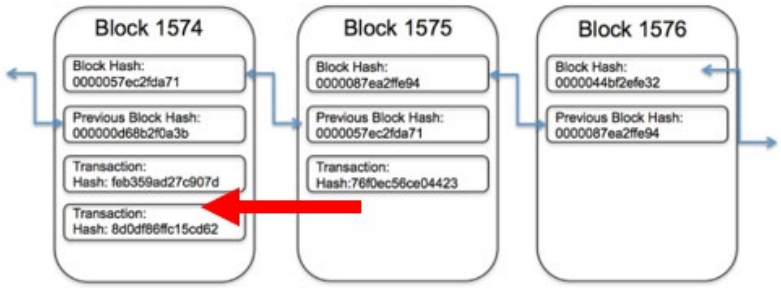


FIGURE 2-1: Blockchain stores transaction records in a series of connected blocks.

Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain (emphasis added).

84. In doing so, the underlying data associated with a previous transaction is updated according to changes or introduction of new data, with the new or changed information of the additional block relating back to the previous block's information. As IBM explains, "[i]f a transaction is in error, a new transaction must be used to reverse the error, and both transactions are then visible."[29]

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

[29] Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 7 (2020), available at https://www.ibm.com/topics/what-is-blockchain.

85. In addition and/or in the alternative to its direct infringements, IBM has indirectly infringed one or more claims of the '869 Patent by knowingly and intentionally inducing others, including its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers, to directly infringe by making, using, offering to sell, selling and/or importing into the United States the Accused Products.

86. At a minimum, IBM has had knowledge of the '869 Patent based at least on its conduct before the United States Patent and Trademark Office ("USPTO"). For example, U.S. Patent Application Publication No. US2007/0061360 A1 (the publication of the '668 Patent) was cited by the Examiner during the prosecution of U.S. Patent Application Publication No. 2012/0150925 A1, entitled "Proactive Method for Improved Reliability for Sustained Persistence of Immutable Files in Storage Clouds" and assigned to IBM.

87. Upon information and belief, since at least the above-mentioned instances when IBM was on notice of the '869 Patent, IBM has actively induced the direct infringements of its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers as set forth under U.S.C. § 271(b). Such inducements have been committed with the knowledge, or with willful blindness to the fact, that the acts induced constitute infringement of the '869 Patent. Indeed, IBM intended to cause and took affirmative steps to induce infringement by, among other things, creating and disseminating advertisements and instructive materials that promote the infringing use of the Accused Products;[30] creating and/or maintaining established

[30] *See, e.g.*, *Implementation Guide for IBM Blockchain Platform for Multicloud*, IBM Redbooks, available at www.redbooks.ibm.com/redbooks/pdfs/sg248458.pdf; *Developing a Blockchain Business Network with Hyperledger Composer using the IBM Blockchain Platform Starter Plan*, IBM Redbooks, available at www.redbooks.ibm.com/abstracts/redp5492.html; *Zero to Blockchain, IBM Redbooks Cours*e, available at www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/crse0401.html.

distribution channels for the Accused Products into and within the United States; manufacturing the Accused Products in conformity with U.S. laws and regulations; distributing or making available technical documentation supporting use of the Accused Products that promote their features, specifications, and applications—including webinars, interactive sessions, white papers, brochures, and manuals;[31] providing developer tools for the Accused Products—including software development kits (SDKs) and application programming interfaces (APIs); testing and certifying blockchain features in the Accused Products; and by providing technical support, onboarding services, product updates, tutorials, training, and/or related services for these products to purchasers in the United States.[32]

Damages

88. Pardalis has been damaged as a result of IBM's infringing conduct described in this Count. IBM is, thus, liable to Pardalis in an amount that adequately compensates Pardalis for IBM's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT III

(INFRINGEMENT OF U.S. PATENT NO. 7,949,668)

89. Plaintiff incorporates the preceding paragraphs herein by reference.

[31] *See, e.g.*, *IBM Blockchain Platform: Technical Overview*, IBM (2022), available at https://www.ibm.com/downloads/cas/Q9DGBLV7; *Getting started with IBM Blockchain Platform*, IBM Documentation, available at https://cloud.ibm.com/docs/blockchain; Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 7 (2020), available at https://www.ibm. com /topics/what-is-blockchain; *IBM Blockchain Platform Console Video Series*, IBM (last updated July 1, 2020), available at https://developer.ibm.com/series/ibm-blockchain-platform-console-video-series/.

[32] *See., e.g., IBM Support for Hyperledger Fabric*, available at www.ibm.com/cloud/blockchain-platform/hyperledger-fabric-support; *Blockchain Tutorials*, IBM Developer, available at https:// developer.ibm.com/technologies/blockchain/tutorials/; *IBM Blockchain 101: Quick-start guide for developers*, IBM Developer, available at https://developer.ibm.com/tutorials/cl-ibm-blockchain-101-quick-start-guide-for-developers-bluemix-trs/.

90. This cause of action arises under the patent laws of the United States, and, in particular, 35 U.S.C. §§ 271, *et seq*.

91. Pardalis is the owner of all substantial rights, title, and interest in and to the '668 Patent including the right to exclude others and to enforce, sue, and recover damages for past infringements.

92. The '668 Patent is valid, enforceable, and was duly and legally issued by the United States Patent and Trademark Office on May 24, 2011, after full and fair examination.

93. IBM has directly and/or indirectly infringed (by inducing infringement) one or more claims of the '668 Patent in this District and elsewhere in Texas and the United States by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell, and/or import, IBM products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the '668 Patent, including, but not limited to, the Accused Products.

Direct Infringement (35 U.S.C. § 271(a))

94. IBM has directly infringed one or more claims of the'668 Patent in this District and elsewhere in Texas and the United States.

95. IBM has directly infringed, either by itself or via its agent(s), at least claim 7 of the '668 Patent as set forth under 35 U.S.C. § 271(a) by making, offering to sell, selling, testing, and/or using the Accused Products.

96. By way of illustration only, the Accused Products perform each and every element of claim 7 of the '668 Patent. The Accused Products perform "a method of operating a common point authoring system for complex sharing of hierarchically authored data objects in a distribution chain." For example, each Accused Product operates a common point authoring system for sharing

a series of ordered and back-linked blocks [distribution chain] that are each authored by a permissioned client within an append-only distributed system of records (i.e., a shared ledger) across a peer-to-peer network, as shown below:

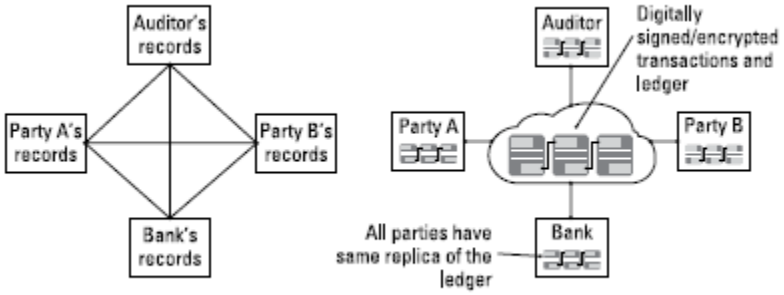


FIGURE 1-1: Business networks before and after blockchain.

Manav Gupta, *Blockchain for Dummies: IBM Limited Edition*, at p. 7 (2017).

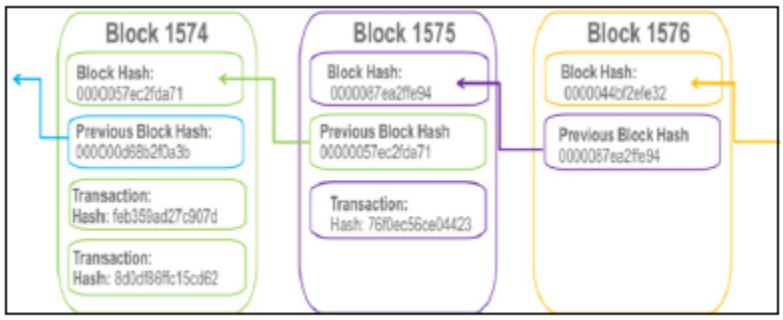
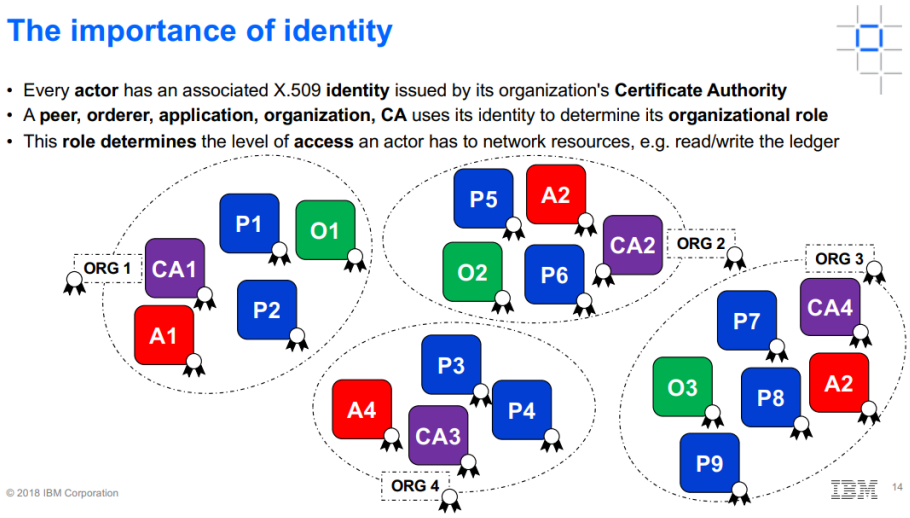


FIGURE 2-1: Blockchain stores transaction records in a series of connected blocks.

Manav Gupta, *Blockchain for Dummies: IBM Limited Edition*, at p. 14 (2017).

97. The Accused Products practice "enabling an authorized authoring member to create data comprising a draft informational object, which uniquely identifies a product for tracking purposes." For example, each Accused Product enables a permissioned client [authorized authoring member], via one or more certificate authorities, to create an ordered transaction containing one or more endorsed transaction proposals [data comprising a draft informational object] that uniquely identifies an asset [product] for tracking purposes. Specifically, the Accused Products utilize one or more certificate authorities to generate unique identities for each

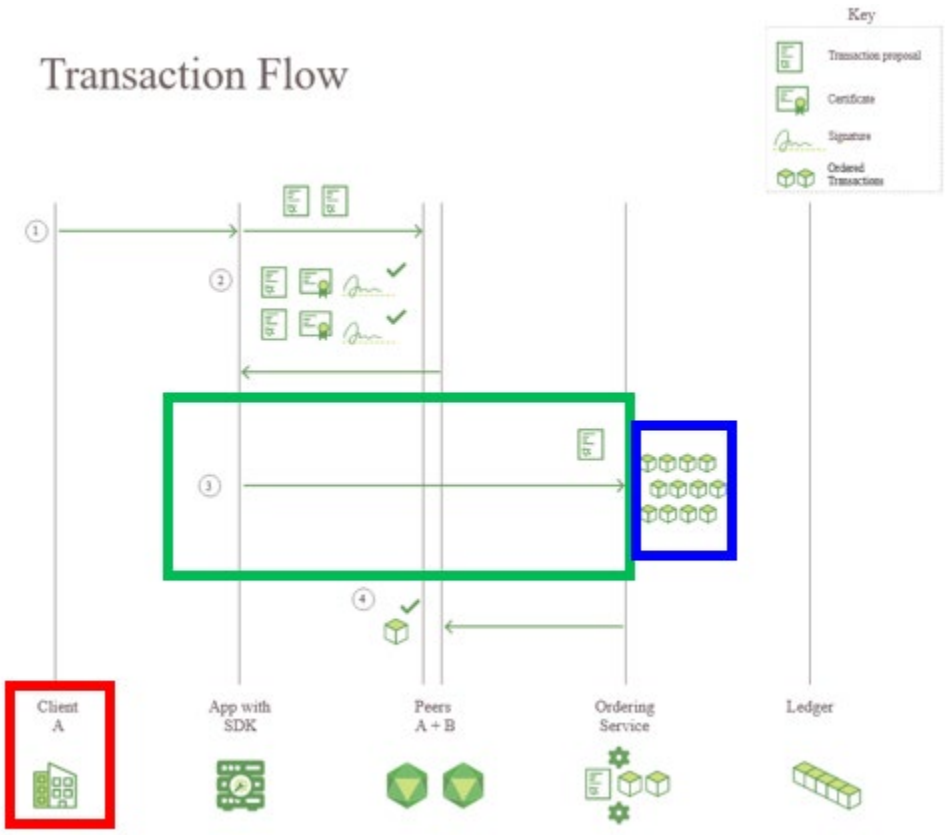
permissioned client, which enables the use of policies to constrain network participation (e.g., to read and/or write the shared ledger) and access to transaction details, as shown below:



IBM Blockchain Platform: Technical Introduction, at p. 14 (2019, version 1.1).

98. When a client is authorized to write the ledger based on its unique identity [authorized authoring member], each Accused Product enables that permissioned client to create the ordered transaction containing one or more endorsed transaction proposals, as shown below:

Transaction Flow, available at https://hyperledger-fabric.readthedocs.io/en/release-1.4/txflow.html (emphasis added).

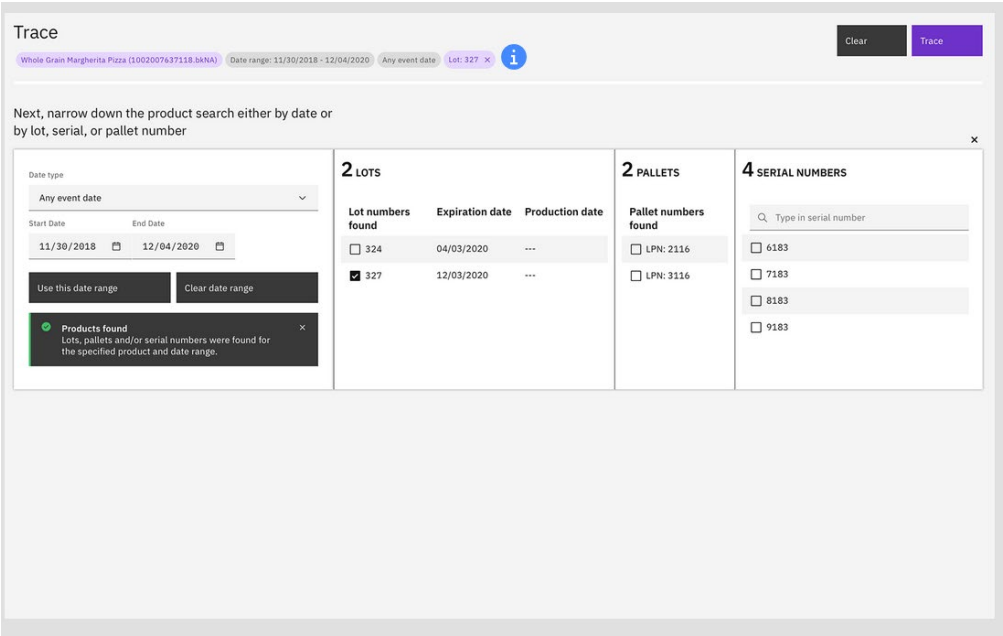


IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

99. For example, IBM's Food Trust blockchain solution enables a permissioned client [authorized authoring member] to create an ordered transaction [draft informational object] that uniquely identifies a food product (e.g., by the product's ID, name or the associated PO number) for tracking purposes. Specifically, IBM's Food Trust solution "assigns predefined roles that grant users authorization to execute specific network tasks on behalf of their organization"[33] in order to "provide[] participants with a permission-based, shared view of food ecosystem information,

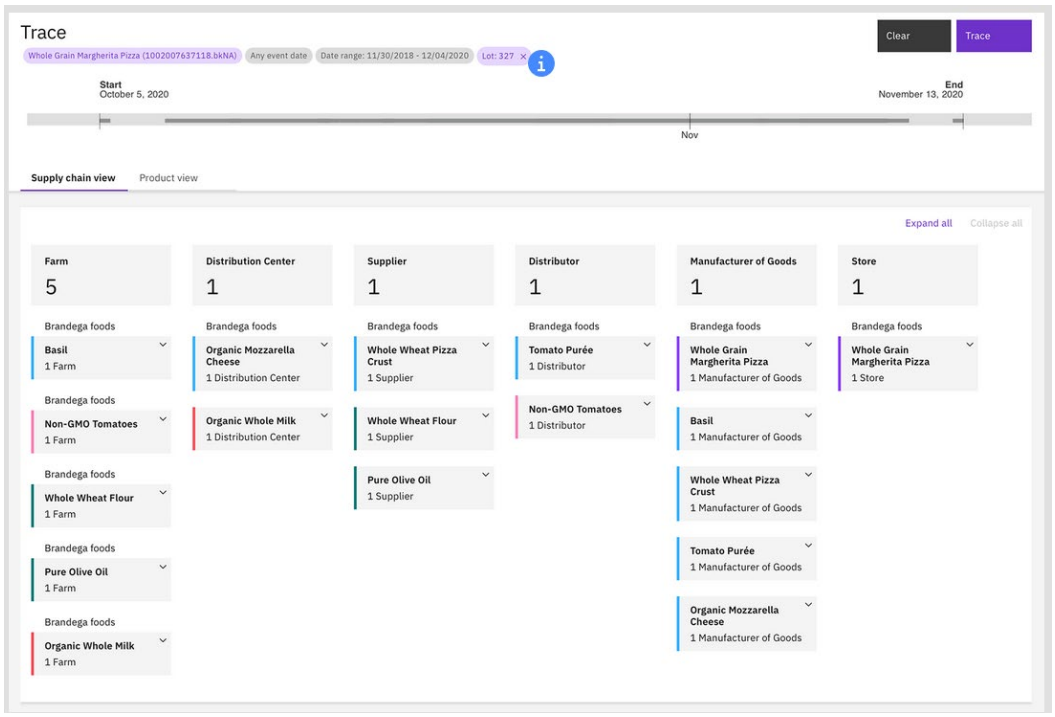
[33] *About IBM Food Trust* at p. 15, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.

allowing convenient data publishing and controlled sharing of information."[34] As IBM explains, "Food Trust solution users can quickly locate items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code (UPC) [unique identification], using the product name and filtering on dates."[35] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date,"[36] as shown below:

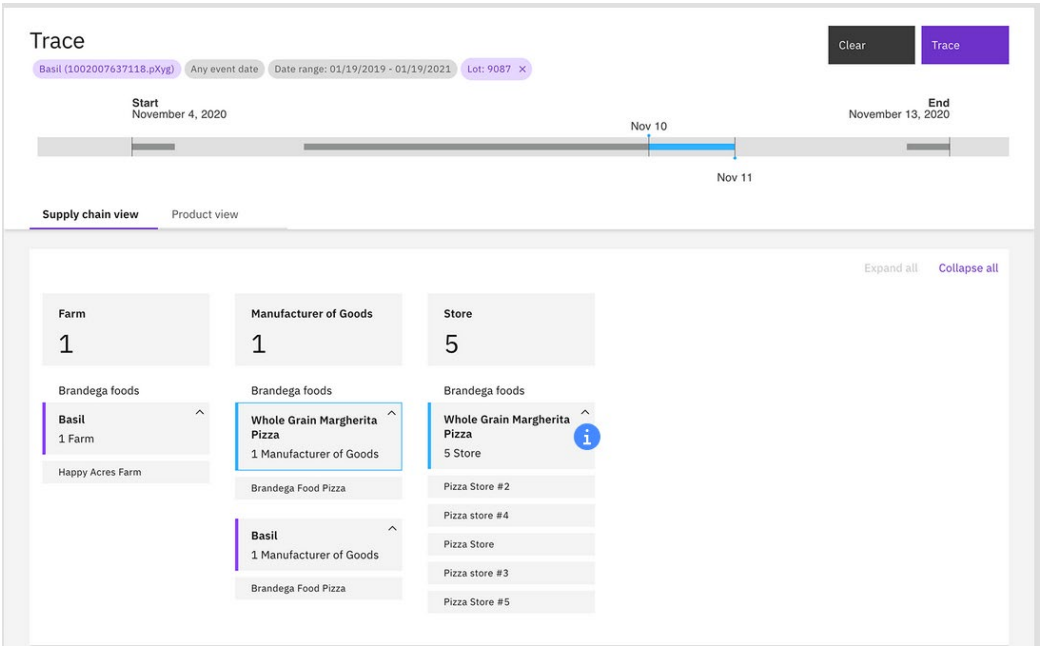


IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.

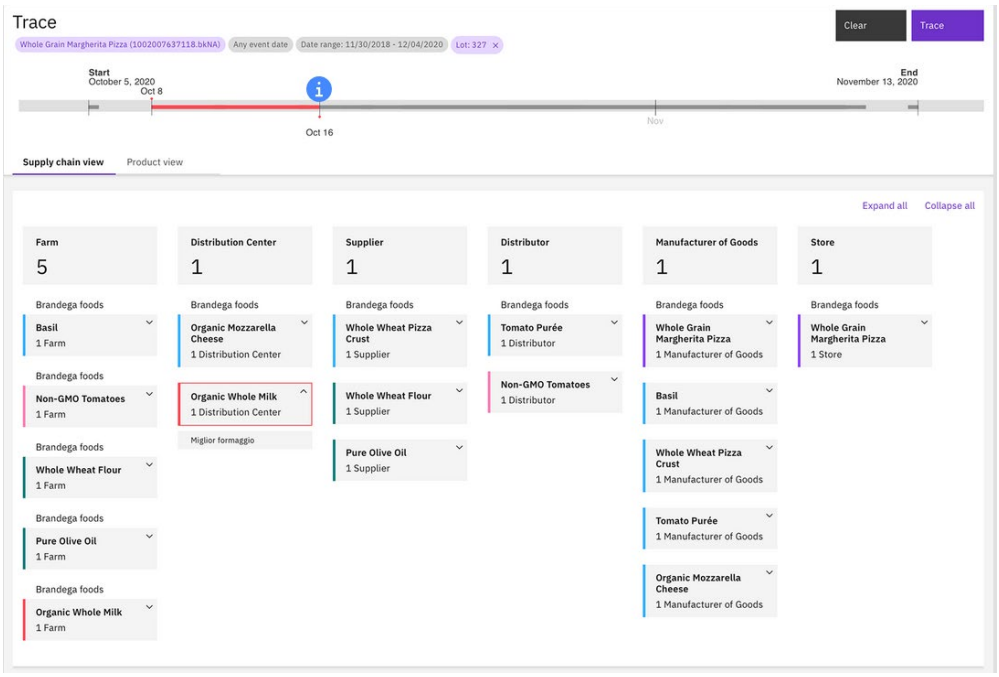
[34] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[35] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[36] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.



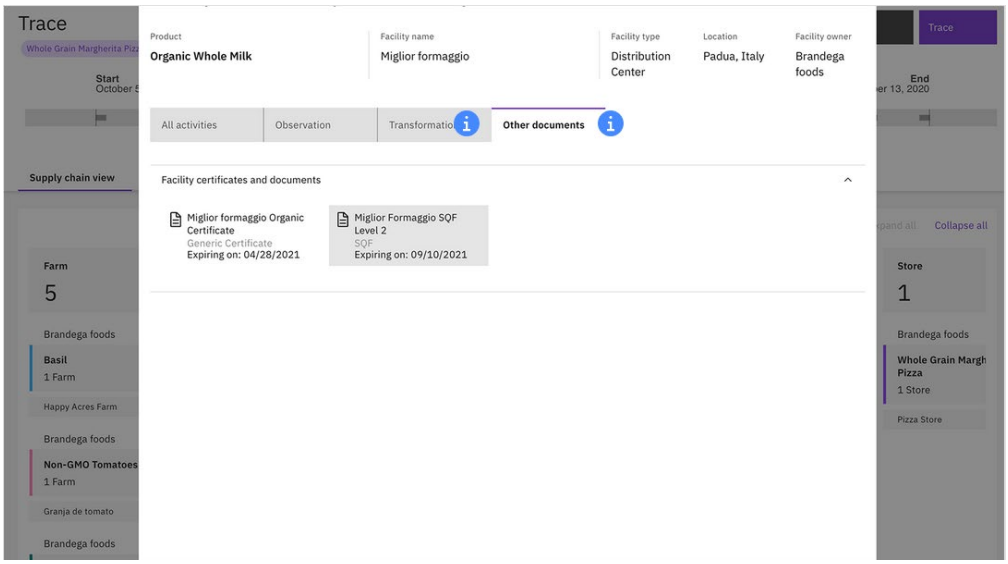
IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



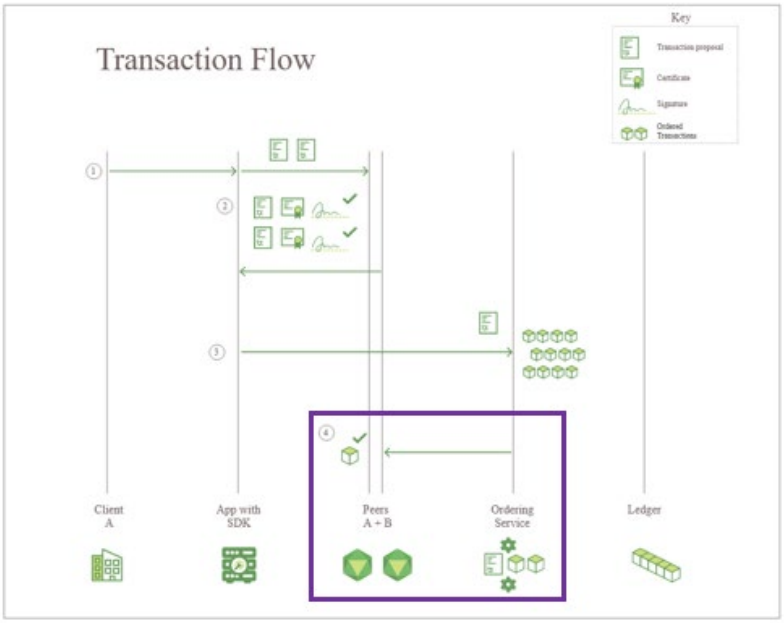
IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.

100. The Accused Products practice "enabling an authorized individual to authenticate said draft informational object created by said authorized authoring member." For example, each

Accused Product enables a permissioned peer [authorized individual], to authenticate the ordered transaction via a consensus protocol. Specifically, each Accused Product distributes the ordered transaction containing one or more endorsed transaction proposals from the ordering service to the channel peers on the network for validation, as shown below:



IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

101. During the validation process, each Accused Product employs a consensus protocol/mechanism to check the validity of each endorsed transaction proposal within the ordered transaction. As IBM explains, "[a] consensus protocol agreed to by all participating members of the business network ensures that the ledger is updated only with network-verified transactions."[37] Therefore, the Accused Products authenticate as required by claim 7 via the validation process.

[37] *Blockchain Basics: Introduction to Distributed Ledgers*, IBM (last updated June 1, 2019), available at https://developer.ibm.com/tutorials/cl-blockchain-basics-intro-bluemix-trs.

102. The Accused Products practice "converting said authenticated informational object created by said authorized authoring member to a corresponding immutable informational object which is identified by a unique identifier." For example, once the peers authenticate the ordered transaction via the aforementioned validation process [authenticated informational object], each Accused Product converts that ordered transaction into an immutable block [immutable informational object], which is identified by a block hash [unique identifier]. As IBM explains, "each block contains a hash (a digital fingerprint or unique identifier),"[38] as shown below:

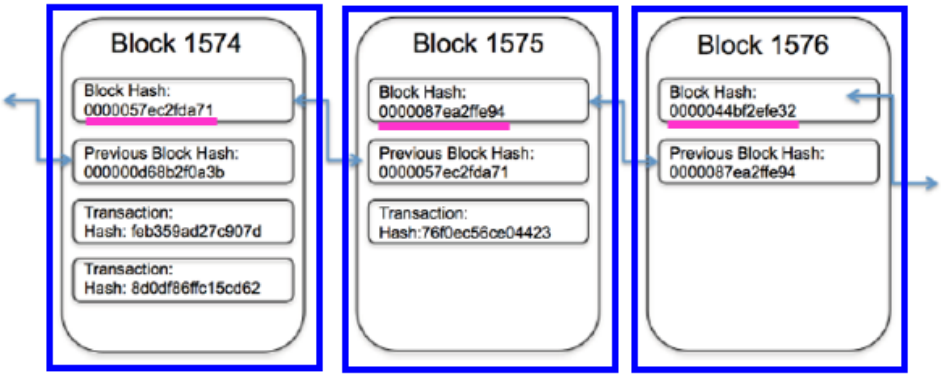


FIGURE 2-1: Blockchain stores transaction records in a series of connected blocks.

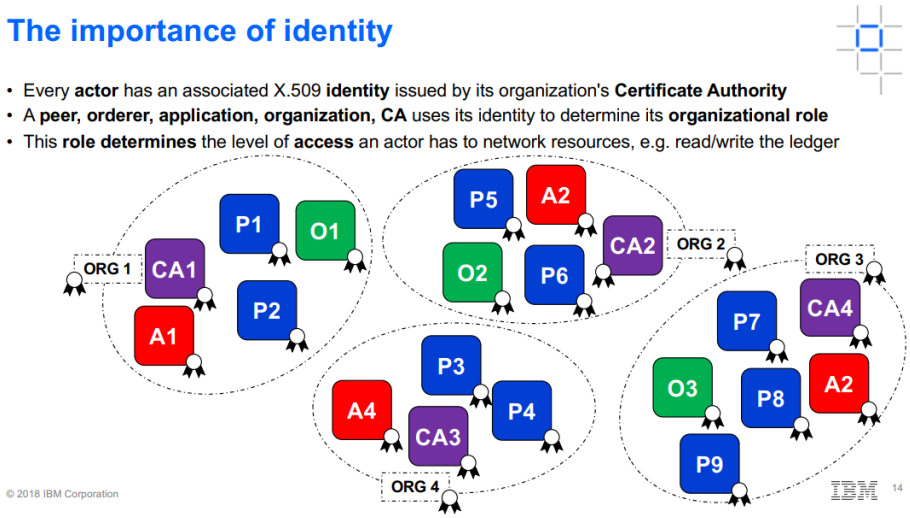
Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain (emphasis added).

103. The Accused Products practice "writing said created immutable informational object into a memory for use by authorized accessing members." For example, each Accused Product appends [writes] each authenticated block [created immutable informational object] to the record (i.e., block) preceding it on the shared ledger of the network [into a memory] via each peer on the channel to become accessible [for use] to permissioned users [authorized accessing members] (e.g., to access, inspect, or add to the data via the creation of a new block). Once the

[38] Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain.

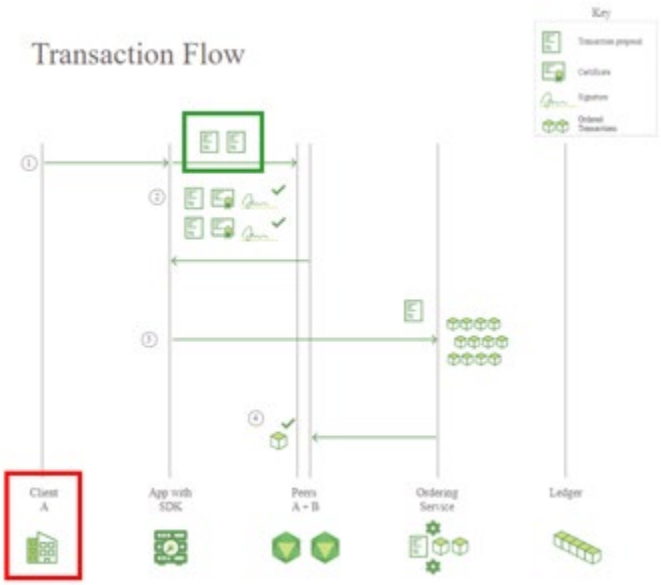
block is committed to the shared ledger, it is immutably written into a memory that cannot be tampered with or changed.

104. The Accused Products practice "enabling an authorized authoring member to create data comprising at least one draft data element." For example, each Accused Product enables a permissioned client [authorized authoring member], via one or more certificate authorities, to create one or more transaction proposals [data comprising at least one draft data element]. Specifically, the Accused Products utilize certificate authorities to generate unique identities for each permissioned client, which enables the use of policies to constrain network participation (e.g., to read and/or write the shared ledger) and access to transaction details, as shown below:



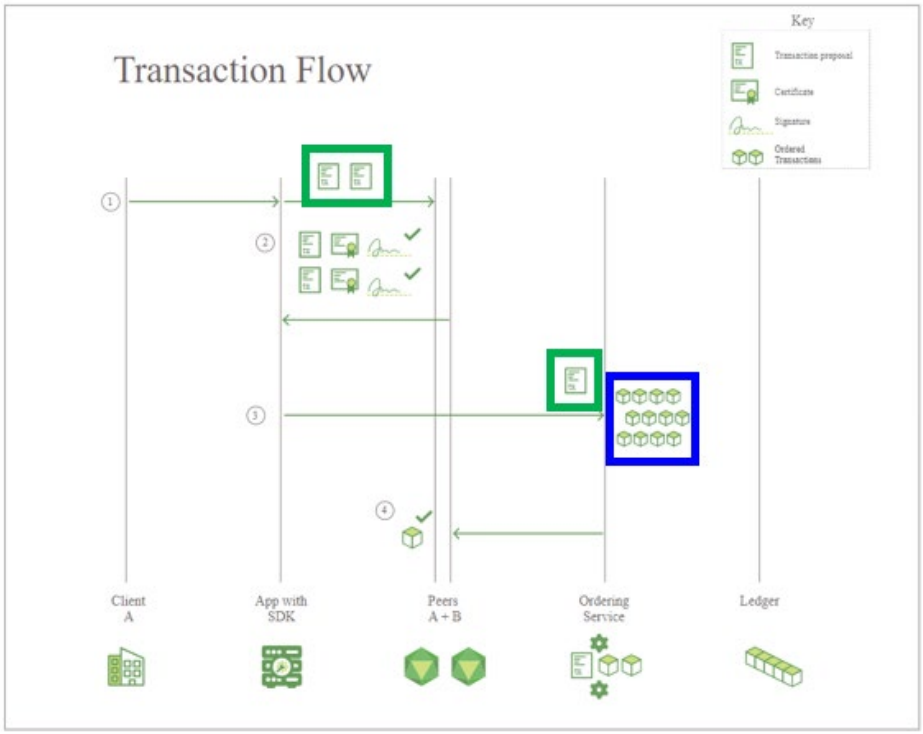
IBM Blockchain Platform: Technical Introduction, at p. 14 (2019, version 1.1).

105. When a client is authorized to write the ledger based on its unique identity [authorized authoring member], each Accused Product enables that permissioned client to create one or more transaction proposals [data comprising at least one draft data element], as shown below:



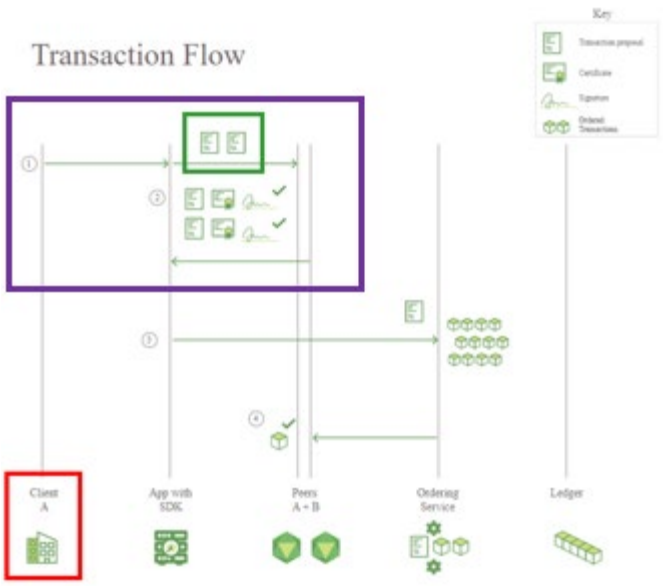
IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

106. The Accused Products practice the element of "wherein said step of enabling an authorized authoring member incorporates said at least one draft data element into said draft informational object." For example, as demonstrated below, each Accused Product enables a permissioned client to create one or more transaction proposals [draft data element] (illustrated below in green) that are incorporated into an ordered transaction [draft informational object] (illustrated below in blue):



IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

107. The Accused Products practice the element of "wherein said step of enabling an authorized individual to authenticate comprises: enabling an authorized individual to authenticate said draft data element created by said authorized authoring member." For example, each Accused Product enables a permissioned peer [authorized individual] to verify and sign [authenticate] each transaction proposal [draft data element] created by the permissioned client [authorized authoring member] via an endorsement mechanism, as shown below:



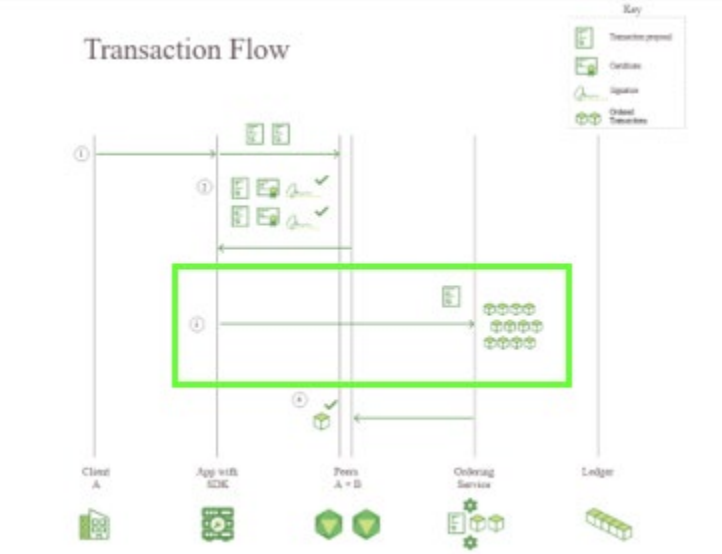
IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

108. During the endorsement process, each Accused Product employs an endorsement mechanism that enables each permissioned peer [authorized individual] to verify the signature of each received transaction proposal and to simulate the execution of the input transaction against a smart contract. As IBM explains, the endorsement mechanism "is an important part of the network consensus algorithm in the IBM Blockchain Platform."[39] Therefore, the Accused Products enable such authentication as required by claim 7 of the '668 Patent via the endorsement process.

109. The Accused Products practice the element of "wherein said step of converting converts said authenticated at least one draft data element to a corresponding immutable draft data element which is identified by a unique identifier." For example, each Accused Product converts each endorsed transaction proposal [authenticated draft data element], via an ordering service, into

[39] David Gorman, *Introduction to the endorsement of transactions in a business network*, IBM Developer (2018), available at https://developer.ibm.com/articles/an-introduction-to-the-endorsement-of-transactions-in-a-business-network/.

an ordered transaction containing the endorsed transaction proposals [immutable draft data element], as shown below:



IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

110. In addition and/or in the alternative to its direct infringements, IBM has indirectly infringed one or more claims of the '668 Patent by knowingly and intentionally inducing others, including its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers, to directly infringe by making, using, offering to sell, selling and/or importing into the United States the Accused Products.

111. At a minimum, IBM has had knowledge of the '668 Patent based at least on its conduct before the United States Patent and Trademark Office ("USPTO"). For example, U.S. Patent Application Publication No. US2007/0061360 A1 (the publication of the '668 Patent) was cited by the Examiner during the prosecution of U.S. Patent Application Publication No. 2012/0150925 A1, entitled "Proactive Method for Improved Reliability for Sustained Persistence

of Immutable Files in Storage Clouds" and assigned to IBM. In addition, IBM has constructive knowledge of the '668 Patent given Pardalis' compliance with 35 U.S.C. § 287.

112. Upon information and belief, since at least the above-mentioned instances when IBM was on notice of the '668 Patent, IBM has actively induced the direct infringements of its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers as set forth under U.S.C. § 271(b). Such inducements have been committed with the knowledge, or with willful blindness to the fact, that the acts induced constitute infringement of the '668 Patent. Indeed, IBM intended to cause and took affirmative steps to induce infringement by, among other things, creating and disseminating advertisements and instructive materials that promote the infringing use of the Accused Products;[40] creating and/or maintaining established distribution channels for the Accused Products into and within the United States; manufacturing the Accused Products in conformity with U.S. laws and regulations; distributing or making available technical documentation supporting use of the Accused Products that promote their features, specifications, and applications—including webinars, interactive sessions, white papers, brochures, and manuals;[41] providing developer tools for the Accused Products—including software development kits (SDKs) and application programming interfaces (APIs); testing and

[40] *See, e.g.*, *Implementation Guide for IBM Blockchain Platform for Multicloud*, IBM Redbooks, available at www.redbooks.ibm.com/redbooks/pdfs/sg248458.pdf; *Developing a Blockchain Business Network with Hyperledger Composer using the IBM Blockchain Platform Starter Plan*, IBM Redbooks, available at www.redbooks.ibm.com/abstracts/redp5492.html; *Zero to Blockchain, IBM Redbooks Cours*e, available at www.redbooks.ibm.com/Redbooks.nsf/Redbook Abstracts/crse0401.html.

[41] *See, e.g.*, *IBM Blockchain Platform: Technical Overview*, IBM (2022), available at https://www.ibm.com/downloads/cas/Q9DGBLV7; *Getting started with IBM Blockchain Platform*, IBM Documentation, available at https://cloud.ibm.com/docs/blockchain; Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 7 (2020), available at https://www.ibm. com /topics/what-is-blockchain; *IBM Blockchain Platform Console Video Series*, IBM (last updated July 1, 2020), available at https://developer.ibm.com/series/ibm-blockchain-platform-console-video-series/.

certifying blockchain features in the Accused Products; and by providing technical support, onboarding services, product updates, tutorials, training, and/or related services for these products to purchasers in the United States.[42]

Damages

113. Pardalis has been damaged as a result of IBM's infringing conduct described in this Count. IBM is, thus, liable to Pardalis in an amount that adequately compensates Pardalis for IBM's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT IV

(INFRINGEMENT OF U.S. PATENT NO. 8,307,000)

114. Plaintiff incorporates the preceding paragraphs herein by reference.

115. This cause of action arises under the patent laws of the United States, and, in particular, 35 U.S.C. §§ 271, *et seq*.

116. Pardalis is the owner of all substantial rights, title, and interest in and to the '000 Patent including the right to exclude others and to enforce, sue, and recover damages for past infringements.

117. The '000 Patent is valid, enforceable, and was duly and legally issued by the United States Patent and Trademark Office on November 6, 2011, after full and fair examination.

118. IBM has directly and/or indirectly infringed (by inducing infringement) one or more claims of the '000 Patent in this District and elsewhere in Texas and the United States by

[42] *See., e.g., IBM Support for Hyperledger Fabric*, available at www.ibm.com/cloud/blockchain-platform/hyperledger-fabric-support; *Blockchain Tutorials*, IBM Developer, available at https://developer.ibm.com/technologies/blockchain/tutorials/; *IBM Blockchain 101: Quick-start guide for developers*, IBM Developer, available at https://developer.ibm.com/tutorials/cl-ibm-blockchain-101-quick-start-guide-for-developers-bluemix-trs/.

making, using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell, and/or import, IBM products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the '000 Patent, including, but not limited to, the Accused Products.

Direct Infringement (35 U.S.C. § 271(a))

119. IBM has directly infringed one or more claims of the '000 Patent in this District and elsewhere in Texas and the United States.

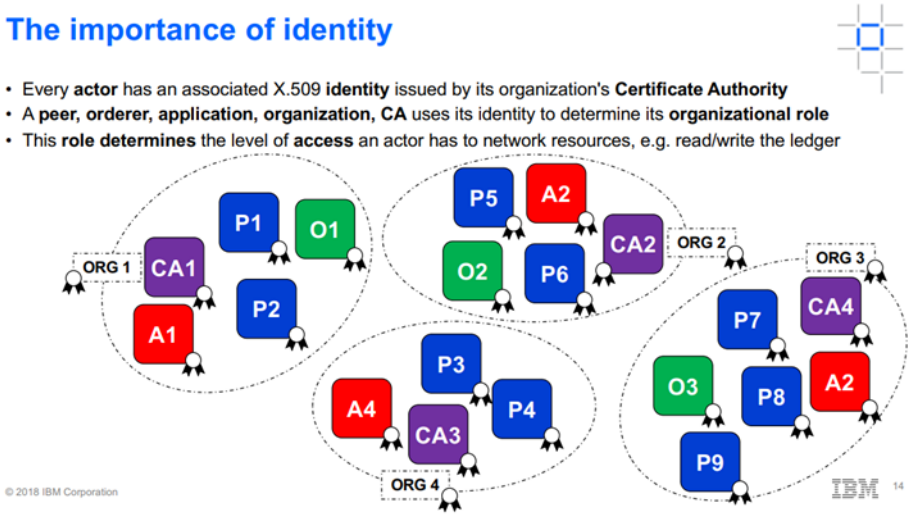
120. IBM has directly infringed, either by itself or via its agent(s), at least claim 1 of the '000 Patent as set forth under 35 U.S.C. § 271(a) by making, offering to sell, selling, testing, and/or using the Accused Products.

121. By way of illustration only, the Accused Products perform each and every element of claim 1 of the '000 Patent. The Accused Products perform "a method for maintaining data for use by authoring and accessing members to track uniquely identified products." For example, each Accused Product maintains a series of ordered and back-linked blocks within an append-only distributed system of records (i.e., a shared ledger) across a peer-to-peer network for permissioned clients and users [authoring and accessing members] to track uniquely identified assets [products]. On information and belief, permissioned users may use the unique transaction hash/transaction ID, associated with a specific transaction (e.g., specific product(s)) on the blockchain, for tracking purposes. For example, IBM's Food Trust blockchain solution maintains data (e.g., food supply chain data) on a blockchain ledger to provide a permission-based, shared view of food ecosystem information for permissioned users to track uniquely identified food products. As IBM explains, "Food Trust solution users can quickly locate items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code

(UPC) [unique identification], using the product name and filtering on dates."[43] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date."[44]

122. The Accused Products practice "enabling an authorized authoring member to create data comprising a draft informational object, which uniquely identifies a product for tracking purposes." For example, each Accused Product enables a permissioned client [authorized authoring member], via one or more certificate authorities, to create an ordered transaction containing one or more endorsed transaction proposals [data comprising a draft informational object] that uniquely identifies an asset [product] for tracking purposes. Specifically, the Accused Products utilize one or more certificate authorities to generate unique identities for each permissioned client, which enables the use of policies to constrain network participation (e.g., to read and/or write the shared ledger) and access to transaction details, as shown below:

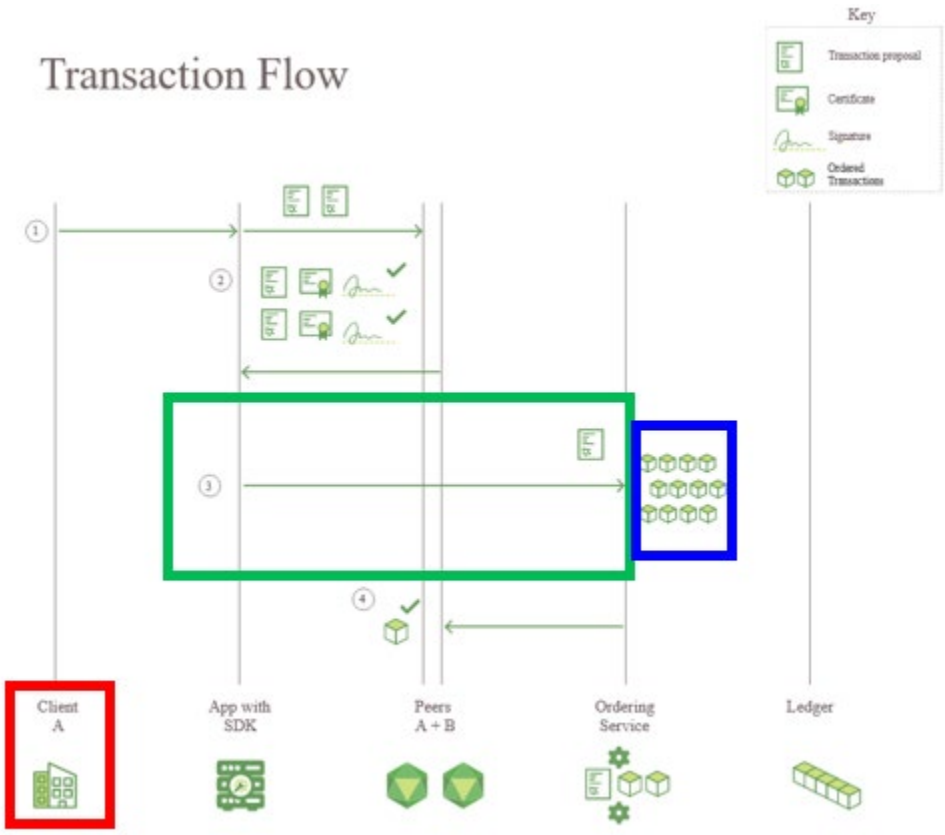
[43] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[44] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.



IBM Blockchain Platform: Technical Introduction, at p. 14 (2019, version 1.1).

123. When a client is authorized to write the ledger based on its unique identity [authorized authoring member], each Accused Product enables that permissioned client to create the ordered transaction containing one or more endorsed transaction proposals, as shown below:

Transaction Flow, available at https://hyperledger-fabric.readthedocs.io/en/release-1.4/txflow.html (emphasis added).

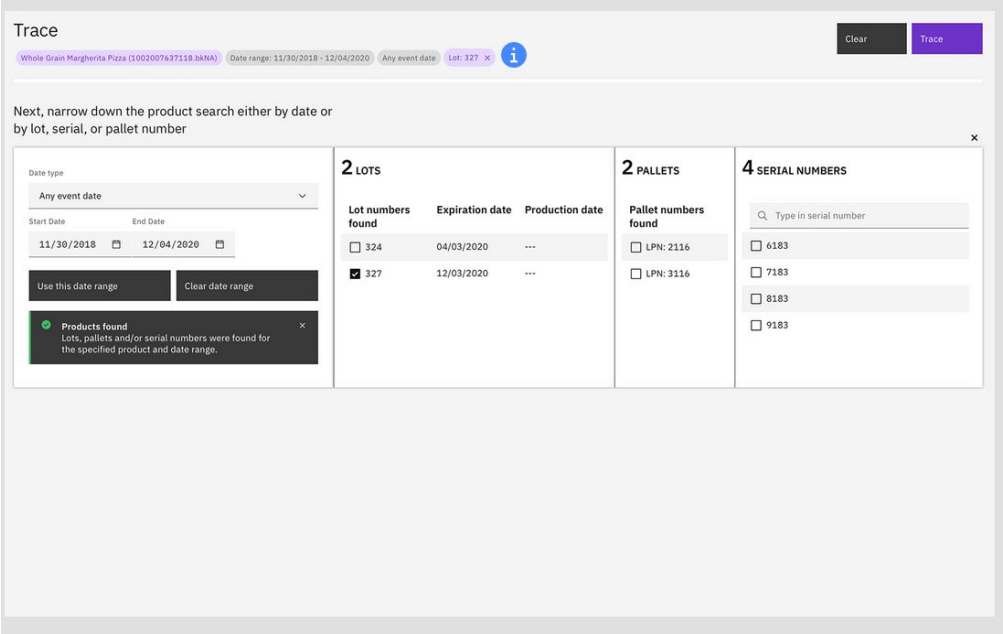


IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

124. For example, IBM's Food Trust blockchain solution enables a permissioned client [authorized authoring member] to create an ordered transaction [data comprising a draft informational object] that uniquely identifies a food product (e.g., by the product's ID, name or the associated PO number) for tracking purposes. Specifically, IBM's Food Trust solution "assigns predefined roles that grant users authorization to execute specific network tasks on behalf of their organization"[45] in order to "provide[] participants with a permission-based, shared view of food ecosystem information, allowing convenient data publishing and controlled sharing of

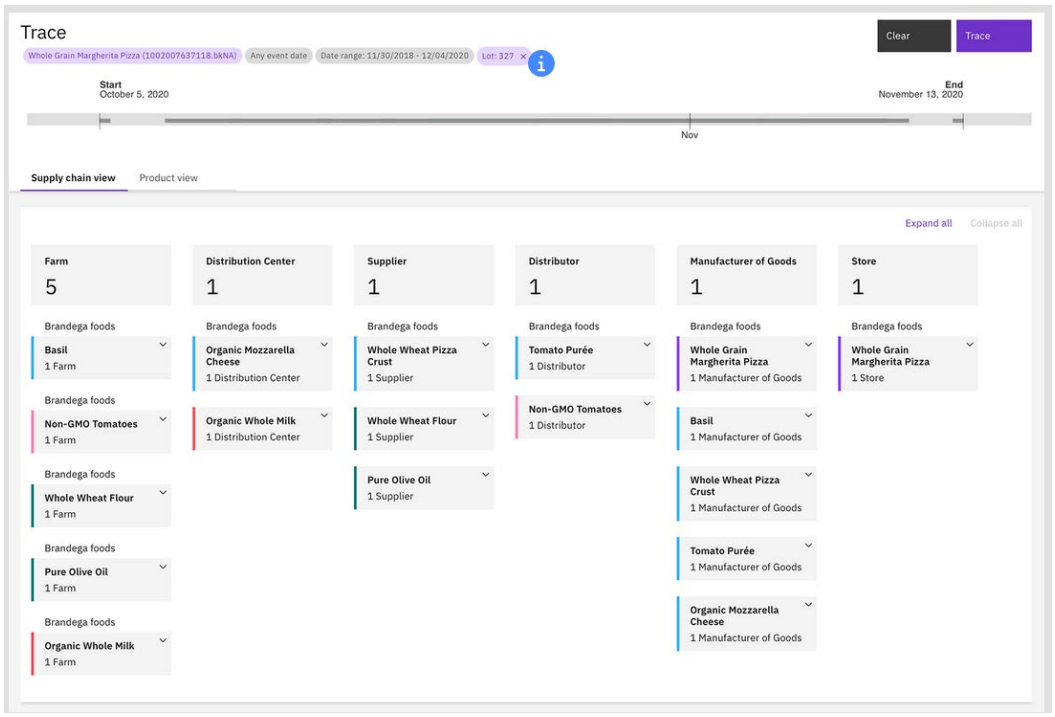
[45] *About IBM Food Trust* at p. 15, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.

information."[46] As IBM explains, "Food Trust solution users can quickly locate items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code (UPC) [unique identification], using the product name and filtering on dates."[47] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date,"[48] as shown below:

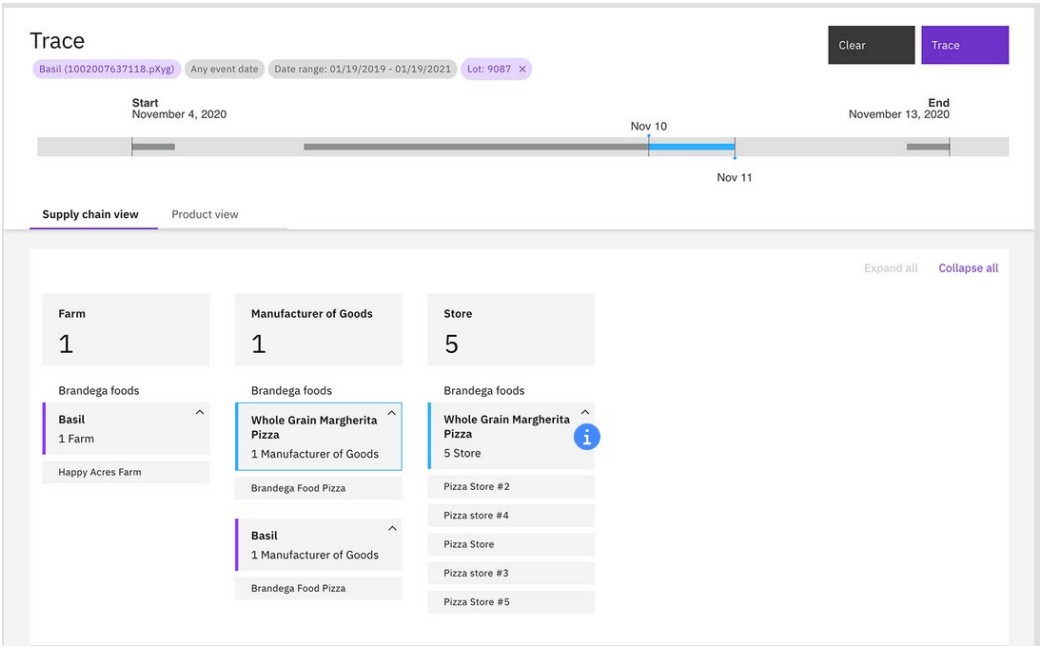


IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.

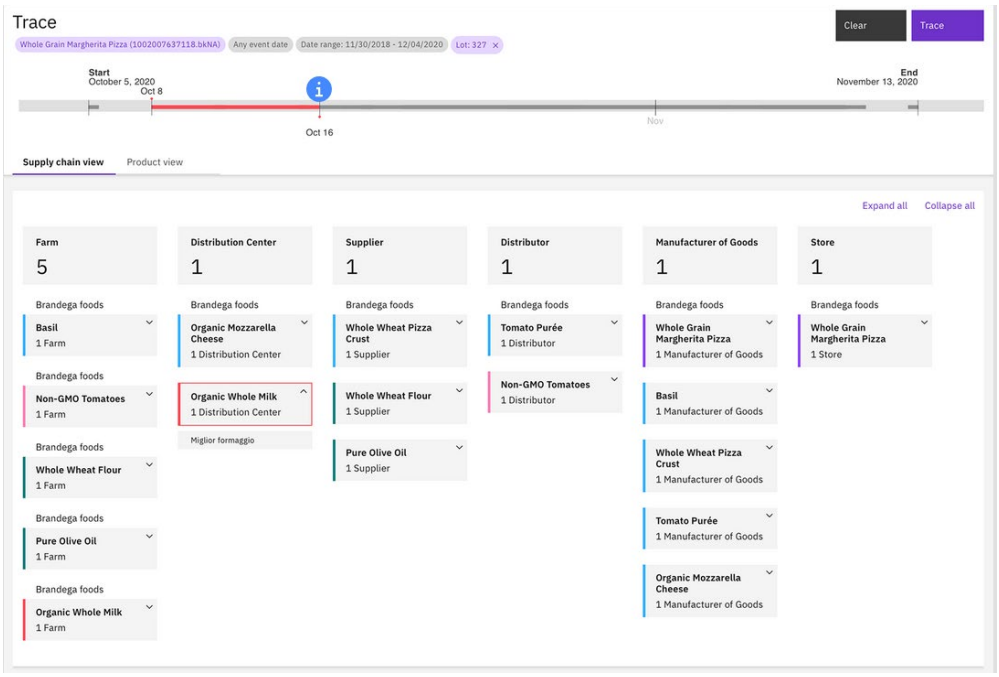
[46] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[47] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[48] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.



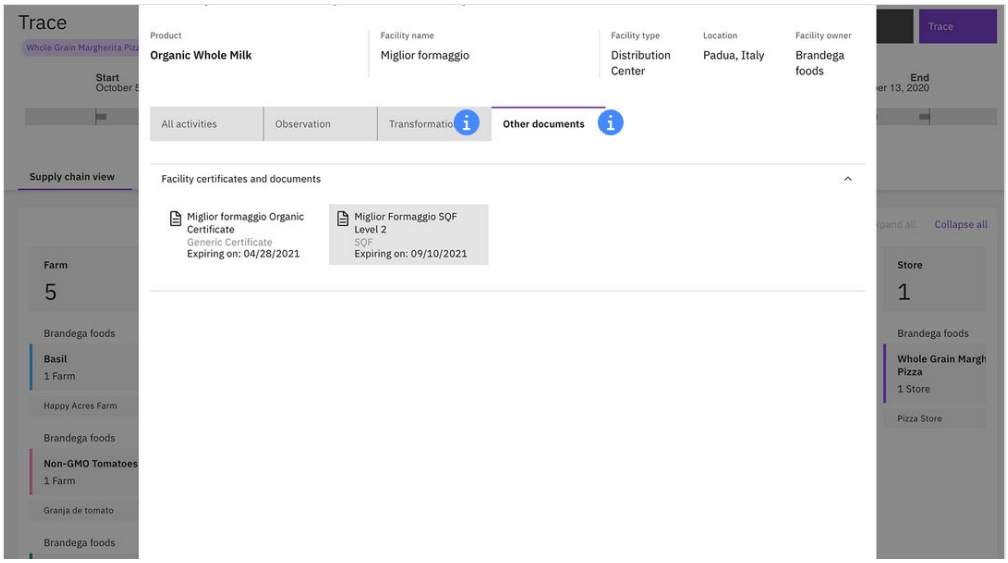
IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



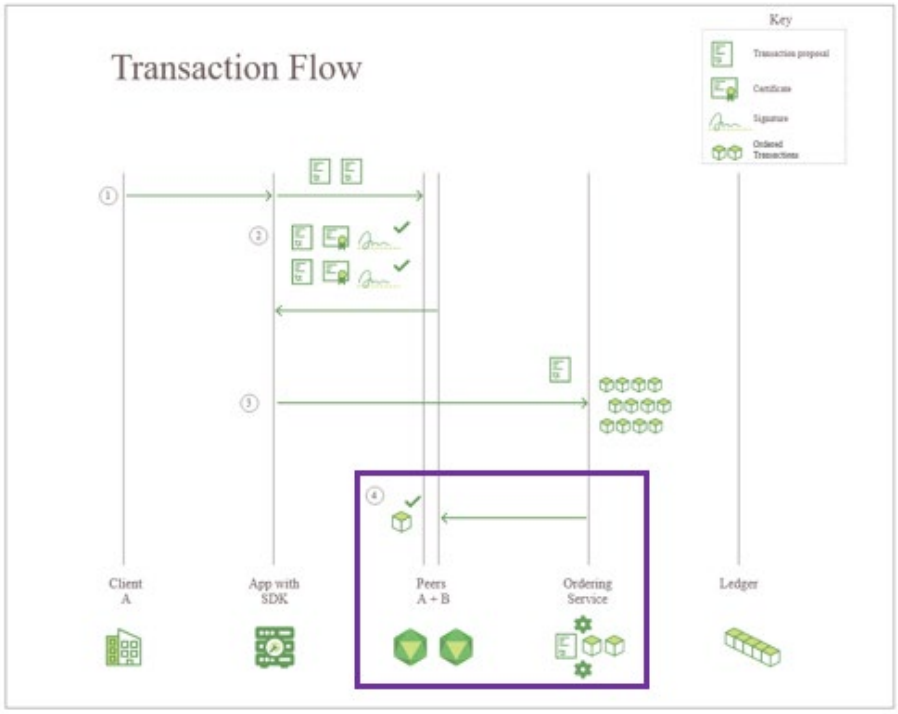
IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.

125. The Accused Products practice "authenticating the draft informational object created by the authorized authoring member." For example, each Accused Product authenticates

each ordered transaction [draft informational object] via a consensus protocol. Specifically, each Accused Product distributes the ordered transaction from the ordering service to the channel peers on the network for validation, as shown below:



IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

126. During the validation process, each Accused Product employs a consensus protocol/mechanism to check the validity of each endorsed transaction proposal within the ordered transaction. As IBM explains, "[a] consensus protocol agreed to by all participating members of the business network ensures that the ledger is updated only with network-verified transactions."[49] Therefore, the Accused Products authenticate as required by claim 1 of the '000 Patent via the validation process.

[49] *Blockchain Basics: Introduction to Distributed Ledgers*, IBM (last updated June 1, 2019), available at https://developer.ibm.com/tutorials/cl-blockchain-basics-intro-bluemix-trs.

127. The Accused Products practice "converting the authenticated informational object created by the authorized authoring member to a corresponding immutable informational object which is identified by a unique identifier." For example, once the peers authenticate the ordered transaction via the aforementioned validation process [authenticated informational object], each Accused Product converts that ordered transaction into an immutable block [immutable informational object], which is identified by a block hash [unique identifier] for tracking the immutable block on the blockchain. As IBM explains, "each block contains a hash (a digital fingerprint or unique identifier),"[50] as shown below:

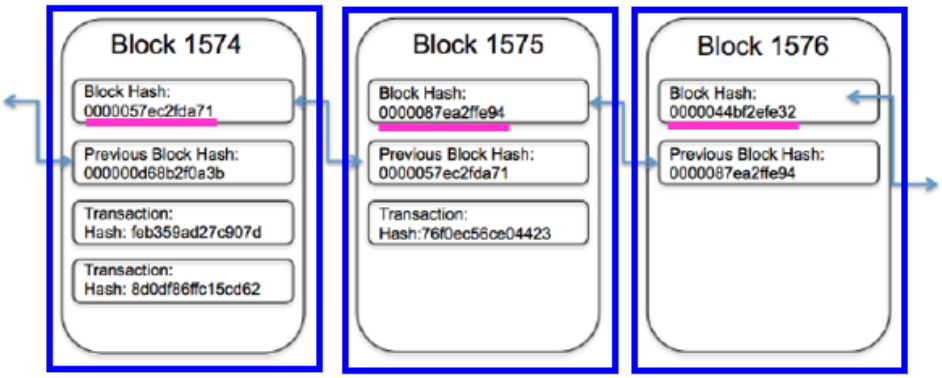


FIGURE 2-1: Blockchain stores transaction records in a series of connected blocks.

Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain (emphasis added).

128. The Accused Products practice "writing the created immutable informational object into a memory for use by authorized accessing members." For example, each Accused Product appends [writes] each authenticated block [created immutable informational object] to the record (i.e., block) preceding it on the shared ledger of the network [into a memory] via each peer on the channel to become accessible [for use] to permissioned users [authorized accessing members]

[50] Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain.

(e.g., to access, inspect, or add to the data via the creation of a new block). Once the block is committed to the shared ledger, it is immutably written into a memory that cannot be tampered with or changed.

129. The Accused Products practice "transmitting offer data from the authorized authoring member to members identified in the offer data to enable the identified members to access and change data corresponding to data that is contained in the immutable informational object." On information and belief, each Accused Product sends permission data to enable certain additional permissioned users [members identified in the offer data] to access and change data contained in the previous block through the creation of an additional block that reuses data contained in the previous block [copy of the immutable informational object]. Specifically, each Accused Product enables a console administrator (e.g., a permissioned client) [authorized authoring member] to set permissions, via permission mapping, to constrain network participation, such as allowing certain additional permissioned users [an independent member] to access and change a previous block through the creation of an additional block. In doing so, the underlying data associated with a previous transaction is updated according to changes or introduction of new data, with the new or changed information of the additional block relating back to the previous block's information. Within each Accused Product, the "[i]dentity and access management (IAM) allows the owner of a console to control which users have access to the console and their privileges within it. IAM is built into the blockchain console and includes local console authentication and role management."[51]

[51] *Security*, IBM Documentation for IBM Blockchain Platform v2.1.2 (last updated Nov. 2, 2020), available at https://cloud.ibm.com/docs/blockchain-sw?topic=blockchain-sw-ibp-security#ibp-security-ibp.

130. The Accused Products practice "enabling members identified in the offer data to access and change data corresponding to data that is contained in the immutable informational object to an extent and for a duration defined by permissions set by the authorized authoring member in the offer data." For example, each Accused Product enables a console administrator (e.g., a permissioned client) [authorized authoring member] to set permissions, via permission mapping, to constrain network participation, such as allowing certain additional permissioned users [members identified in the offer data] to access and change data contained in the previous block [immutable object] through the creation of an additional block that reuses data contained in the previous block. In doing so, the underlying data associated with a previous transaction is updated according to changes or introduction of new data, with the new or changed information of the additional block relating back to the previous block's information. Within each Accused Product, the "[i]dentity and access management (IAM) allows the owner of a console to control which users have access to the console and their privileges within it. IAM is built into the blockchain console and includes local console authentication and role management."[52] On information and belief, each Accused Product enables a permissioned client [authorized authoring member] to set permissions that restrict the extent and duration to which the block may be accessed and changed.

131. The Accused Products practice "creating a copy of the immutable informational object." For example, on information and belief, each Accused Product enables certain permissioned users [members identified in the offer data], via permission mapping, to create a copy of the previous block through the creation of an additional block that reuses data contained

[52] *Security*, IBM Documentation for IBM Blockchain Platform v2.1.2 (last updated Nov. 2, 2020), available at https://cloud.ibm.com/docs/blockchain-sw?topic=blockchain-sw-ibp-security#ibp-security-ibp.

in the previous block. Within each Accused Product, the "[i]dentity and access management (IAM) allows the owner of a console to control which users have access to the console and their privileges within it. IAM is built into the blockchain console and includes local console authentication and role management."[53]

132. The Accused Products practice "enabling an identified accessing member to revise data contained in the copy of the immutable informational object to the extent and for the duration defined by the permissions." For example, each Accused Product enables a console administrator (e.g., a permissioned client) [authorized authoring member] to set permissions, via permission mapping, to constrain network participation, such as allowing certain additional permissioned users [identified accessing member] to revise data contained in the previous block through the creation of an additional block that reuses data contained in the previous block [copy of the immutable informational object]. In doing so, the underlying data associated with a previous transaction is updated according to changes or introduction of new data, with the new or changed information of the additional block relating back to the previous block's information. Within each Accused Product, the "[i]dentity and access management (IAM) allows the owner of a console to control which users have access to the console and their privileges within it. IAM is built into the blockchain console and includes local console authentication and role management."[54] On information and belief, each Accused Product enables a permissioned client [identified accessing

[53] *Security*, IBM Documentation for IBM Blockchain Platform v2.1.2 (last updated Nov. 2, 2020), available at https://cloud.ibm.com/docs/blockchain-sw?topic=blockchain-sw-ibp-security#ibp-security-ibp.
[54] *Security*, IBM Documentation for IBM Blockchain Platform v2.1.2 (last updated Nov. 2, 2020), available at https://cloud.ibm.com/docs/blockchain-sw?topic=blockchain-sw-ibp-security#ibp-security-ibp.

member] to set permissions that define and restrict the extent and duration to which the block may be accessed and changed.

133. The Accused Products practice "relating the copy of the immutable informational object, containing the revised data, to the immutable informational object." For example, each Accused Product enables permissioned users [members identified in the offer data] to access and change data corresponding to a previous block through the creation of an additional block. In doing so, the underlying data associated with a previous transaction is updated according to changes or introduction of new data, with the new or changed information of the additional block relating back to the previous block's information.

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

134. In addition and/or in the alternative to its direct infringements, IBM has indirectly infringed one or more claims of the '000 Patent by knowingly and intentionally inducing others, including its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers, to directly infringe by making, using, offering to sell, selling and/or importing into the United States the Accused Products.

135. At a minimum, IBM has had knowledge of the '000 Patent based at least on its conduct before the United States Patent and Trademark Office ("USPTO"). For example, U.S. Patent Application Publication No. US2007/0061360 A1 (the publication of the '668 Patent) was cited by the Examiner during the prosecution of U.S. Patent Application Publication No. 2012/0150925 A1, entitled "Proactive Method for Improved Reliability for Sustained Persistence of Immutable Files in Storage Clouds" and assigned to IBM. In addition, IBM has constructive knowledge of the '000 Patent given Pardalis' compliance with 35 U.S.C. § 287.

136. Upon information and belief, since at least the above-mentioned instances when IBM was on notice of the '000 Patent, IBM has actively induced the direct infringements of its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers as set forth under U.S.C. § 271(b). Such inducements have been committed with the knowledge, or with willful blindness to the fact, that the acts induced constitute infringement of the '000 Patent. Indeed, IBM intended to cause and took affirmative steps to induce infringement by, among other things, creating and disseminating advertisements and instructive materials that promote the infringing use of the Accused Products;[55] creating and/or maintaining established distribution channels for the Accused Products into and within the United States; manufacturing the Accused Products in conformity with U.S. laws and regulations; distributing or making available technical documentation supporting use of the Accused Products that promote their features, specifications, and applications—including webinars, interactive sessions, white papers, brochures, and manuals;[56] providing developer tools for the Accused Products—including software development kits (SDKs) and application programming interfaces (APIs); testing and certifying blockchain features in the Accused Products; and by providing technical support,

[55] *See, e.g.*, *Implementation Guide for IBM Blockchain Platform for Multicloud*, IBM Redbooks, available at www.redbooks.ibm.com/redbooks/pdfs/sg248458.pdf; *Developing a Blockchain Business Network with Hyperledger Composer using the IBM Blockchain Platform Starter Plan*, IBM Redbooks, available at www.redbooks.ibm.com/abstracts/redp5492.html; *Zero to Blockchain, IBM Redbooks Cours*e, available at www.redbooks.ibm.com/Redbooks.nsf/Redbook Abstracts/crse0401.html.

[56] *See, e.g.*, *IBM Blockchain Platform: Technical Overview*, IBM (2022), available at https://www.ibm.com/downloads/cas/Q9DGBLV7; *Getting started with IBM Blockchain Platform*, IBM Documentation, available at https://cloud.ibm.com/docs/blockchain; Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 7 (2020), available at https://www.ibm. com /topics/what-is-blockchain; *IBM Blockchain Platform Console Video Series*, IBM (last updated July 1, 2020), available at https://developer.ibm.com/series/ibm-blockchain-platform-console-video-series/.

onboarding services, product updates, tutorials, training, and/or related services for these products to purchasers in the United States.[57]

Damages

137. Pardalis has been damaged as a result of IBM's infringing conduct described in this Count. IBM is, thus, liable to Pardalis in an amount that adequately compensates Pardalis for IBM's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT V

(INFRINGEMENT OF U.S. PATENT NO. 9,690,765)

138. Plaintiff incorporates the preceding paragraphs herein by reference.

139. This cause of action arises under the patent laws of the United States, and, in particular, 35 U.S.C. §§ 271, *et seq*.

140. Pardalis is the owner of all substantial rights, title, and interest in and to the '765 Patent including the right to exclude others and to enforce, sue, and recover damages for past infringements.

141. The '765 Patent is valid, enforceable, and was duly and legally issued by the United States Patent and Trademark Office on June 27, 2017, after full and fair examination.

142. IBM has directly and/or indirectly infringed (by inducing infringement) one or more claims of the '765 Patent in this District and elsewhere in Texas and the United States by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make,

[57] *See., e.g., IBM Support for Hyperledger Fabric*, available at www.ibm.com/cloud/blockchain-platform/hyperledger-fabric-support; *Blockchain Tutorials*, IBM Developer, available at https://developer.ibm.com/technologies/blockchain/tutorials/; *IBM Blockchain 101: Quick-start guide for developers*, IBM Developer, available at https://developer.ibm.com/tutorials/cl-ibm-blockchain-101-quick-start-guide-for-developers-bluemix-trs/.

use, sell, offer to sell, and/or import, IBM products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the '765 Patent, including, but not limited to, the Accused Products.

Direct Infringement (35 U.S.C. § 271(a))

143. IBM has directly infringed one or more claims of the '765 Patent in this District and elsewhere in Texas and the United States.

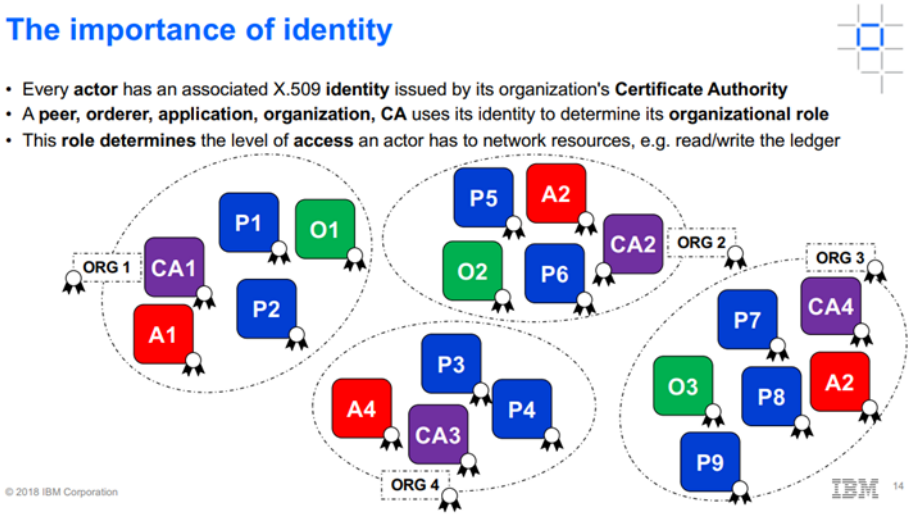
144. IBM has directly infringed, either by itself or via its agent(s), at least claim 1 of the '765 Patent as set forth under 35 U.S.C. § 271(a) by making, offering to sell, selling, testing, and/or using the Accused Products.

145. By way of illustration only, the Accused Products perform each and every element of claim 1 of the '765 Patent. The Accused Products perform "a method for maintaining data for use by authoring and accessing members to track uniquely identified products and informational objects." For example, each Accused Product maintains a series of ordered and back-linked blocks within an append-only distributed system of records (i.e., a shared ledger) across a peer-to-peer network for permissioned clients and users [authoring and accessing members] to track uniquely identified assets [products] as well as uniquely identified blocks [informational objects] on the blockchain. On information and belief, permissioned users may use the unique transaction hash/transaction ID, associated with a specific transaction (e.g., specific product(s)) on the blockchain, for tracking purposes. On information and belief, permissioned users may also use the block hash for tracking a block on the blockchain. As IBM explains, "Food Trust solution users can quickly locate items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code (UPC) [unique

identification], using the product name and filtering on dates."[58] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date."[59]

146. The Accused Products practice "enabling an authorized authoring member to create data comprising a draft informational object, which uniquely identifies a product for tracking purposes." For example, each Accused Product enables a permissioned client [authorized authoring member], via one or more certificate authorities, to create an ordered transaction containing one or more endorsed transaction proposals [data comprising a draft informational object] that uniquely identifies an asset [product] for tracking purposes. Specifically, the Accused Products utilize one or more certificate authorities to generate unique identities for each permissioned client, which enables the use of policies to constrain network participation (e.g., to read and/or write the shared ledger) and access to transaction details, as shown below:

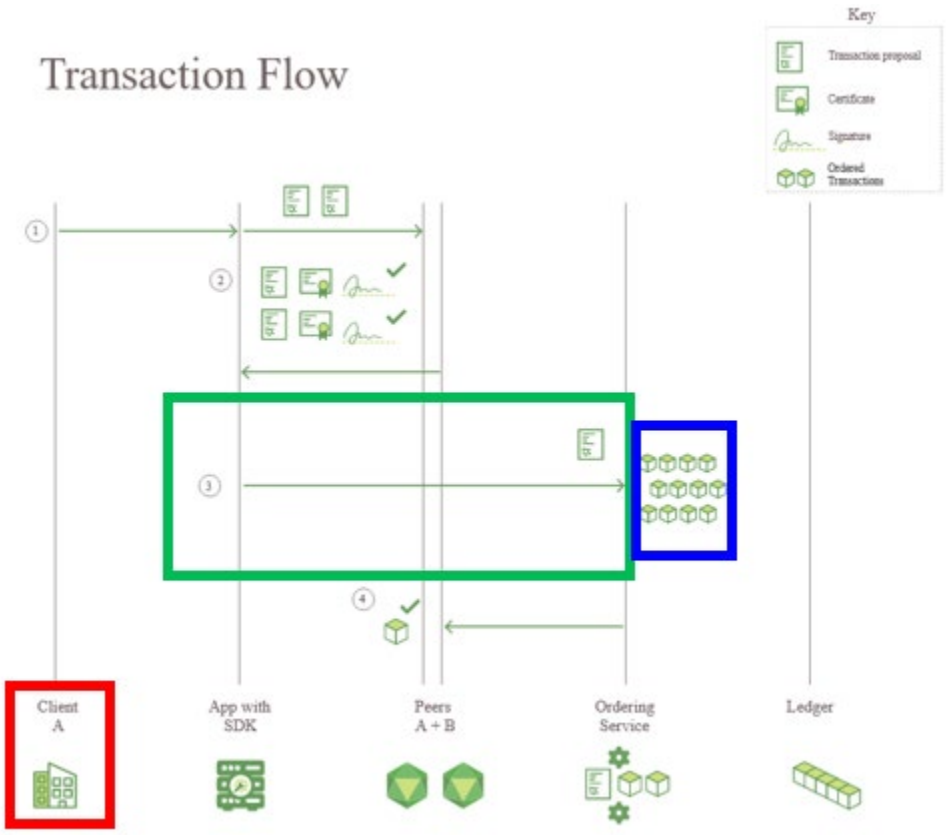
[58] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[59] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.



IBM Blockchain Platform: Technical Introduction, at p. 14 (2019, version 1.1).

147. When a client is authorized to write the ledger based on its unique identity [authorized authoring member], each Accused Product enables that permissioned client to create the ordered transaction containing one or more endorsed transaction proposals, as shown below:

Transaction Flow, available at https://hyperledger-fabric.readthedocs.io/en/release-1.4/txflow.html (emphasis added).

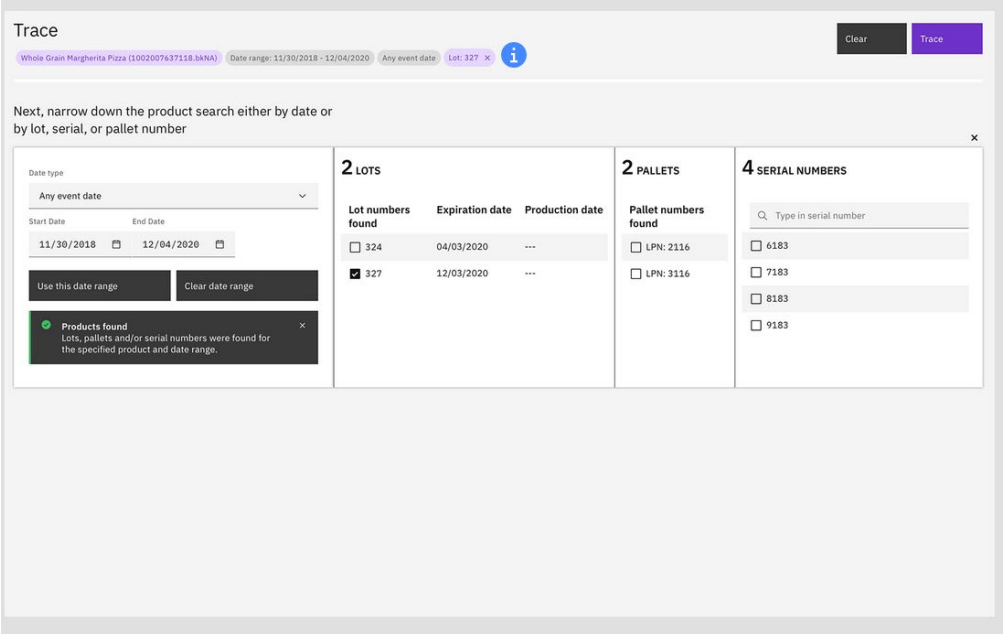


IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

148. For example, IBM's Food Trust blockchain solution enables a permissioned client [authorized authoring member] to create an ordered transaction [draft informational object] that uniquely identifies a food product (e.g., by the product's ID, name or the associated PO number) for tracking purposes. Specifically, IBM's Food Trust solution "assigns predefined roles that grant users authorization to execute specific network tasks on behalf of their organization"[60] in order to "provide[] participants with a permission-based, shared view of food ecosystem information, allowing convenient data publishing and controlled sharing of information."[61] As IBM explains,

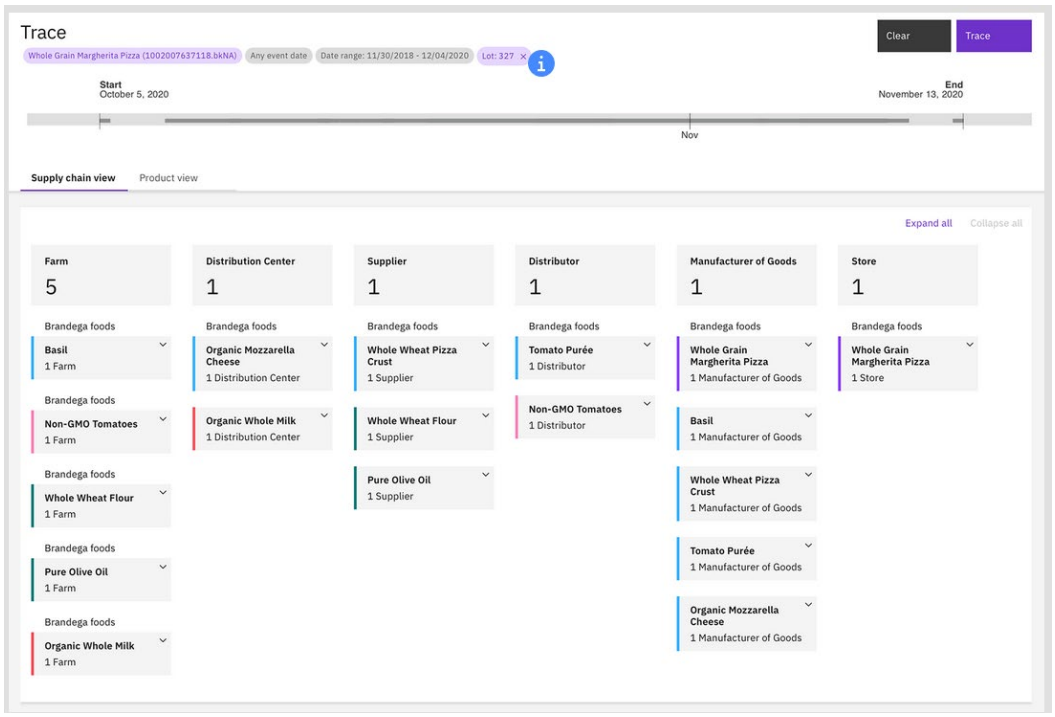
[60] *About IBM Food Trust* at p. 15, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[61] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.

"Food Trust solution users can quickly locate items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code (UPC) [unique identification], using the product name and filtering on dates."[62] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date,"[63] as shown below:

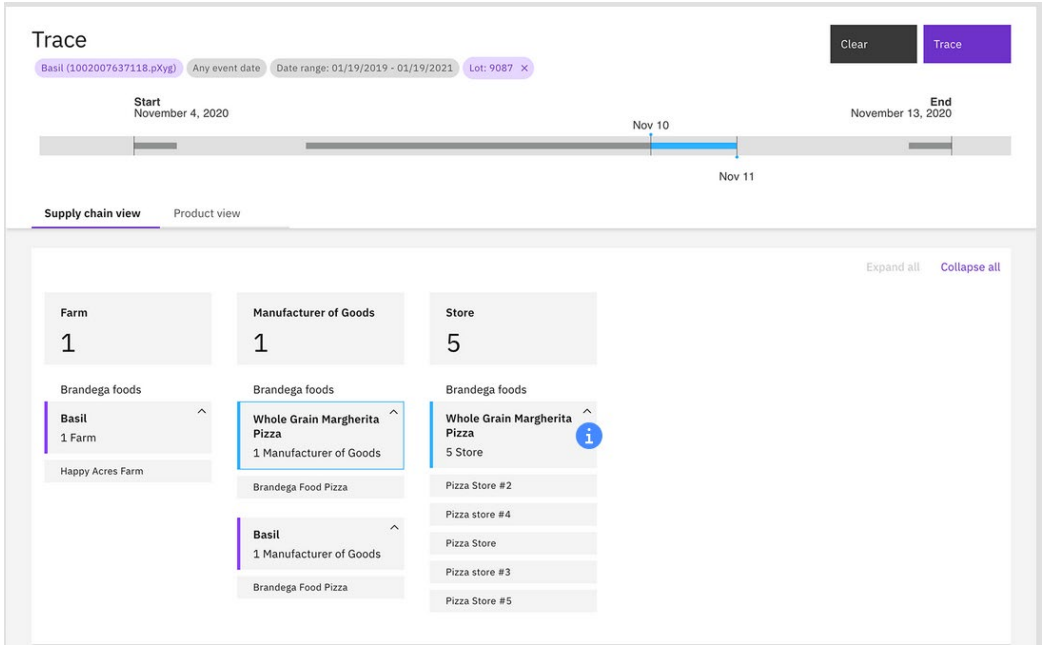


IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.

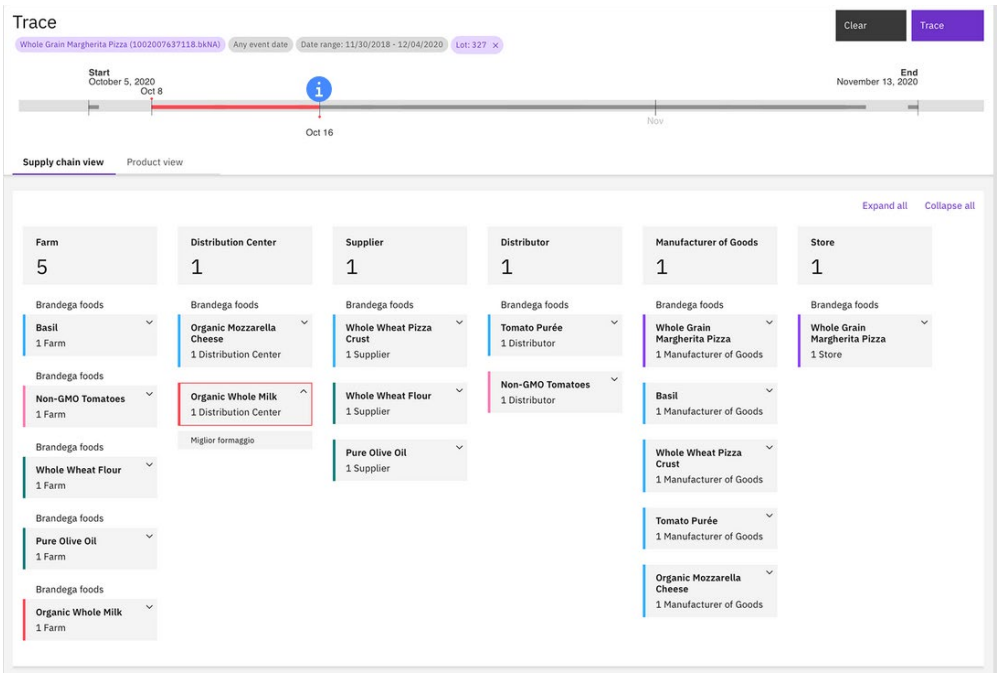
[62] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[63] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.



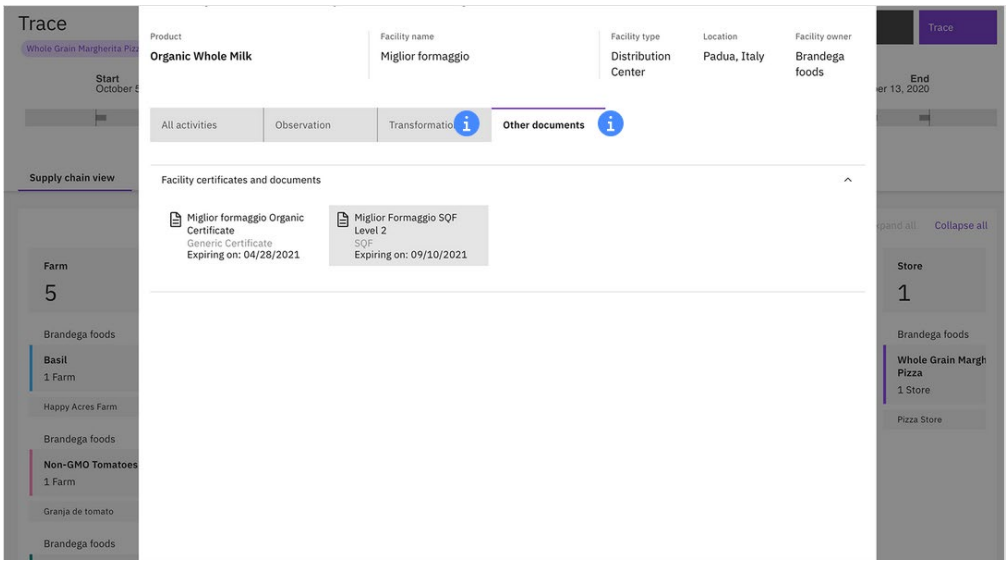
IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



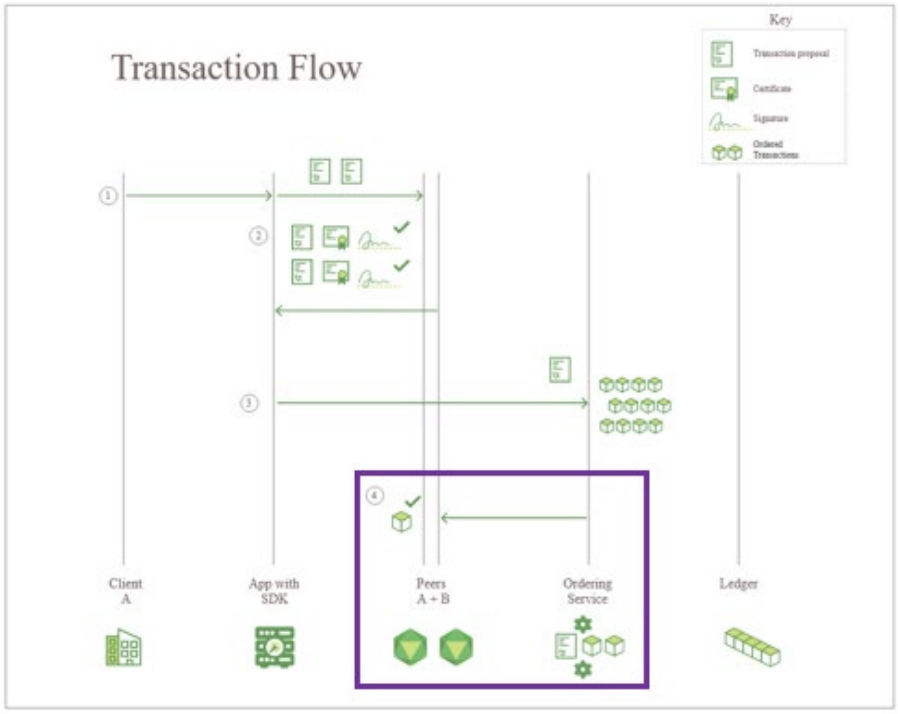
IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.

149. The Accused Products practice "authenticating said draft informational object, which uniquely identifies the product for tracking purposes, created by said authorized authoring

member." For example, each Accused Product authenticates each ordered transaction [draft informational object] via a consensus protocol. Specifically, each Accused Product distributes the ordered transaction from the ordering service to the channel peers on the network for validation, as shown below:



IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

150. During the validation process, each Accused Product employs a consensus protocol/mechanism to check the validity of each endorsed transaction proposal within the ordered transaction [draft informational object]. As IBM explains, "[a] consensus protocol agreed to by all participating members of the business network ensures that the ledger is updated only with network-verified transactions."[64] Therefore, the Accused Products authenticate as required by

[64] *Blockchain Basics: Introduction to Distributed Ledgers*, IBM (last updated June 1, 2019), available at https://developer.ibm.com/tutorials/cl-blockchain-basics-intro-bluemix-trs.

claim 1 of the '765 Patent via the validation process. Further, as discussed above, the ordered transaction uniquely identifies the product for tracking purposes. For example, IBM's Food Trust blockchain solution enables a permissioned client [authorized authoring member] to create an ordered transaction [draft informational object] that uniquely identifies a food product (e.g., by the product's ID, name or the associated PO number) for tracking purposes. As IBM explains, "Food Trust solution users can quickly locate items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code (UPC) [unique identification], using the product name and filtering on dates."[65] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date."[66]

151. The Accused Products practice "converting said authenticated informational object created by said authorized authoring member to a corresponding immutable informational object which is identified by a unique identifier for tracking the immutable informational object." For example, once the peers authenticate the ordered transaction via the aforementioned validation process [authenticated informational object], each Accused Product converts that ordered transaction into an immutable block [immutable informational object], which is identified by a hash [unique identifier] for tracking the immutable block on the blockchain. As IBM explains, "each block contains a hash (a digital fingerprint or unique identifier),"[67] as shown below:

[65] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[66] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[67] Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain.

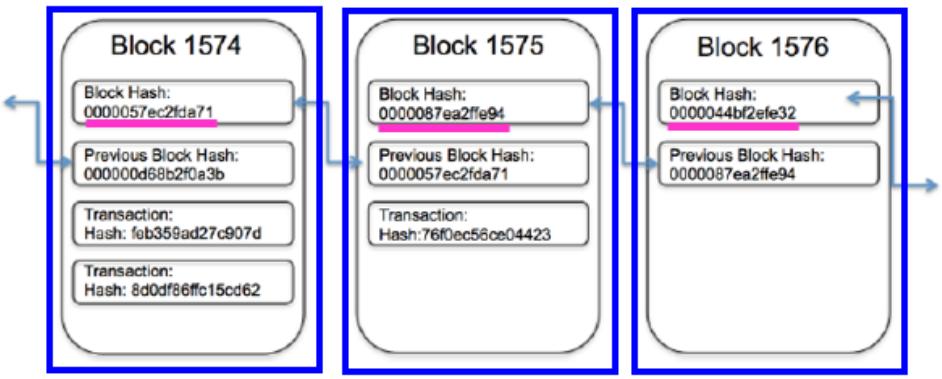


FIGURE 2-1: Blockchain stores transaction records in a series of connected blocks.

Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain (emphasis added).

152. The Accused Products practice "writing said created immutable informational object into a memory for use by independent authorized accessing members." For example, each Accused Product appends [writes] each authenticated block [created immutable informational object] to the record (i.e., block) preceding it on the shared ledger of the network [into a memory] via each peer on the channel to become accessible [for use] to permissioned users [independent authorized accessing members] (e.g., to access, inspect, or add to the data via the creation of a new block). Once the block is committed to the shared ledger, it is immutably written into a memory that cannot be tampered with or changed.

153. The Accused Products practice "enabling, in response to receipt of offer data from said authorized authoring member, an independent member identified in said offer data to access and change said immutable informational object to an extent and for a duration defined by permissions set by said authorized authoring member in said offer data." For example, each Accused Product enables a console administrator (e.g., a permissioned client) [authorized authoring member] to set permissions, via permission mapping, to constrain network participation, such as allowing certain additional permissioned users [an independent member] to access and

change a previous block through the creation of an additional block. In doing so, the underlying data associated with a previous transaction is updated according to changes or introduction of new data, with the new or changed information of the additional block relating back to the previous block's information. Within each Accused Product, the "[i]dentity and access management (IAM) allows the owner of a console to control which users have access to the console and their privileges within it. IAM is built into the blockchain console and includes local console authentication and role management."[68] On information and belief, each Accused Product enables a permissioned client [authorized authoring member] to set permissions that restrict the extent and duration to which the block may be accessed and changed.

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

154. In addition and/or in the alternative to its direct infringements, IBM has indirectly infringed one or more claims of the '765 Patent by knowingly and intentionally inducing others, including its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers, to directly infringe by making, using, offering to sell, selling and/or importing into the United States the Accused Products.

155. At a minimum, IBM has had knowledge of the '765 Patent based at least on its conduct before the United States Patent and Trademark Office ("USPTO"). For example, U.S. Patent Application Publication No. US2007/0061360 A1 (the publication of the '668 Patent) was cited by the Examiner during the prosecution of U.S. Patent Application Publication No. 2012/0150925 A1, entitled "Proactive Method for Improved Reliability for Sustained Persistence of Immutable Files in Storage Clouds" and assigned to IBM.

[68] *Security*, IBM Documentation for IBM Blockchain Platform v2.1.2 (last updated Nov. 2, 2020), available at https://cloud.ibm.com/docs/blockchain-sw?topic=blockchain-sw-ibp-security#ibp-security-ibp.

156. Upon information and belief, since at least the above-mentioned instances when IBM was on notice of the '765 Patent, IBM has actively induced the direct infringements of its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers as set forth under U.S.C. § 271(b). Such inducements have been committed with the knowledge, or with willful blindness to the fact, that the acts induced constitute infringement of the '765 Patent. Indeed, IBM intended to cause and took affirmative steps to induce infringement by, among other things, creating and disseminating advertisements and instructive materials that promote the infringing use of the Accused Products;[69] creating and/or maintaining established distribution channels for the Accused Products into and within the United States; manufacturing the Accused Products in conformity with U.S. laws and regulations; distributing or making available technical documentation supporting use of the Accused Products that promote their features, specifications, and applications—including webinars, interactive sessions, white papers, brochures, and manuals;[70] providing developer tools for the Accused Products—including software development kits (SDKs) and application programming interfaces (APIs); testing and certifying blockchain features in the Accused Products; and by providing technical support,

[69] *See, e.g.*, *Implementation Guide for IBM Blockchain Platform for Multicloud*, IBM Redbooks, available at www.redbooks.ibm.com/redbooks/pdfs/sg248458.pdf; *Developing a Blockchain Business Network with Hyperledger Composer using the IBM Blockchain Platform Starter Plan*, IBM Redbooks, available at www.redbooks.ibm.com/abstracts/redp5492.html; *Zero to Blockchain, IBM Redbooks Cours*e, available at www.redbooks.ibm.com/Redbooks.nsf/Redbook Abstracts/crse0401.html.

[70] *See, e.g.*, *IBM Blockchain Platform: Technical Overview*, IBM (2022), available at https://www.ibm.com/downloads/cas/Q9DGBLV7; *Getting started with IBM Blockchain Platform*, IBM Documentation, available at https://cloud.ibm.com/docs/blockchain; Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 7 (2020), available at https://www.ibm. com /topics/what-is-blockchain; *IBM Blockchain Platform Console Video Series*, IBM (last updated July 1, 2020), available at https://developer.ibm.com/series/ibm-blockchain-platform-console-video-series/.

onboarding services, product updates, tutorials, training, and/or related services for these products to purchasers in the United States.[71]

Damages

157. Pardalis has been damaged as a result of IBM's infringing conduct described in this Count. IBM is, thus, liable to Pardalis in an amount that adequately compensates Pardalis for IBM's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT VI

(INFRINGEMENT OF U.S. PATENT NO. 10,409,902)

158. Plaintiff incorporates the preceding paragraphs herein by reference.

159. This cause of action arises under the patent laws of the United States, and, in particular, 35 U.S.C. §§ 271, *et seq*.

160. Pardalis is the owner of all substantial rights, title, and interest in and to the '902 Patent including the right to exclude others and to enforce, sue, and recover damages for past infringements.

161. The '902 Patent is valid, enforceable, and was duly and legally issued by the United States Patent and Trademark Office on September 10, 2019, after full and fair examination.

162. IBM has directly and/or indirectly infringed (by inducing infringement) one or more claims of the '902 Patent in this District and elsewhere in Texas and the United States by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make,

[71] *See., e.g., IBM Support for Hyperledger Fabric*, available at www.ibm.com/cloud/blockchain-platform/hyperledger-fabric-support; *Blockchain Tutorials*, IBM Developer, available at https://developer.ibm.com/technologies/blockchain/tutorials/; *IBM Blockchain 101: Quick-start guide for developers*, IBM Developer, available at https://developer.ibm.com/tutorials/cl-ibm-blockchain-101-quick-start-guide-for-developers-bluemix-trs/.

use, sell, offer to sell, and/or import, IBM products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the '902 Patent, including, but not limited to, the Accused Products.

Direct Infringement (35 U.S.C. § 271(a))

163. IBM has directly infringed one or more claims of the '902 Patent in this District and elsewhere in Texas and the United States.

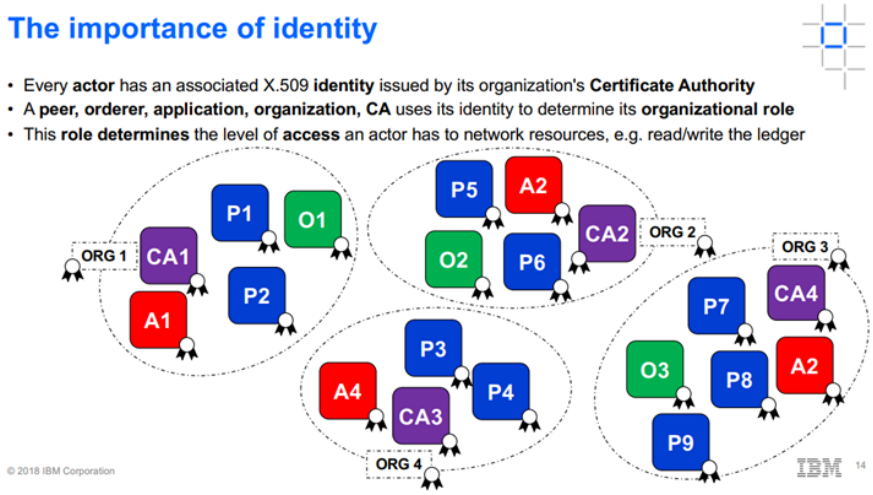
164. IBM has directly infringed, either by itself or via its agent(s), at least claim 1 of the '902 Patent as set forth under 35 U.S.C. § 271(a) by making, offering to sell, selling, testing, and/or using the Accused Products.

165. By way of illustration only, the Accused Products perform each and every element of claim 1 of the '902 Patent. The Accused Products perform "a method for maintaining data for use by authoring and accessing members to track uniquely identified products and informational objects." For example, each Accused Product maintains a series of ordered and back-linked blocks within an append-only distributed system of records (i.e., a shared ledger) across a peer-to-peer network for permissioned clients and users [authoring and accessing members] to track uniquely identified assets [products] as well as uniquely identified blocks [informational objects] on the blockchain. On information and belief, permissioned users may use the unique transaction hash/transaction ID, associated with a specific transaction (e.g., specific product(s)) on the blockchain, for tracking purposes. On information and belief, permissioned users may also use the block hash for tracking a block on the blockchain. For example, IBM's Food Trust blockchain solution maintains data (e.g., food supply chain data) on a blockchain ledger to provide a permission-based, shared view of food ecosystem information for permissioned users to track uniquely identified food products. As IBM explains, "Food Trust solution users can quickly locate

items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code (UPC) [unique identification], using the product name and filtering on dates."[72] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date."[73]

166. The Accused Products practice "enabling an authorized authoring member to create data comprising a draft informational object, which uniquely identifies a product for tracking purposes." For example, each Accused Product enables a permissioned client [authorized authoring member], via one or more certificate authorities, to create an ordered transaction containing one or more endorsed transaction proposals [data comprising a draft informational object] that uniquely identifies an asset [product] for tracking purposes. Specifically, the Accused Products utilize one or more certificate authorities to generate unique identities for each permissioned client, which enables the use of policies to constrain network participation (e.g., to read and/or write the shared ledger) and access to transaction details, as shown below:

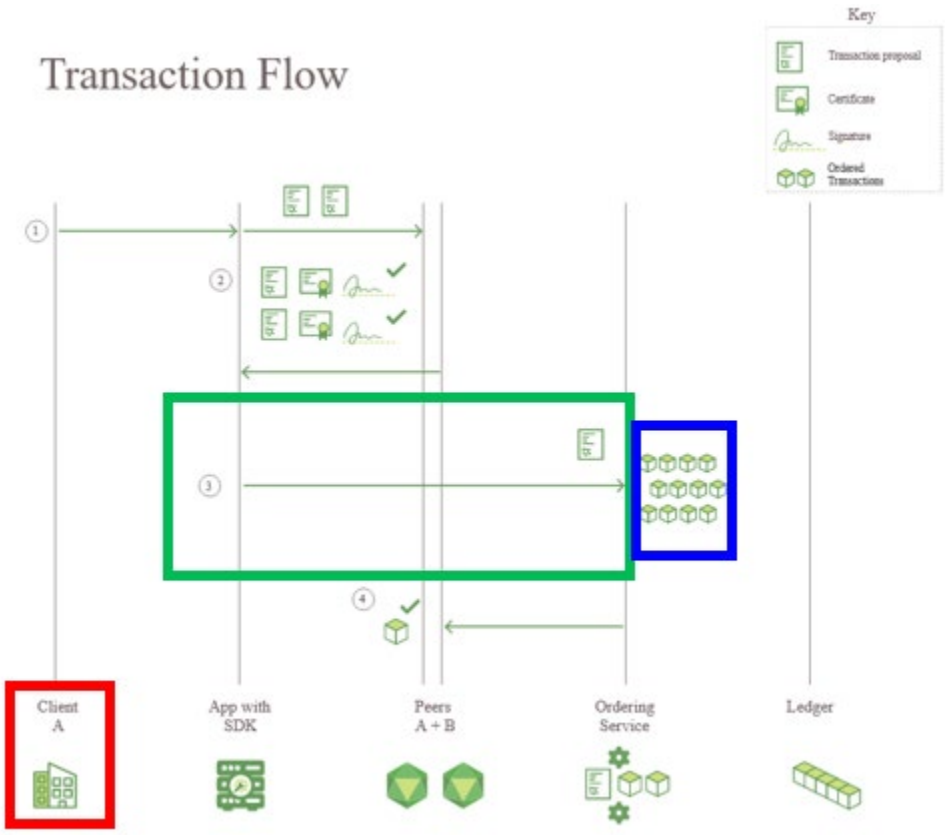
[72] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[73] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.



IBM Blockchain Platform: Technical Introduction, at p. 14 (2019, version 1.1).

167. When a client is authorized to write the ledger based on its unique identity [authorized authoring member], each Accused Product enables that permissioned client to create the ordered transaction containing one or more endorsed transaction proposals, as shown below:

Transaction Flow, available at https://hyperledger-fabric.readthedocs.io/en/release-1.4/txflow.html (emphasis added).

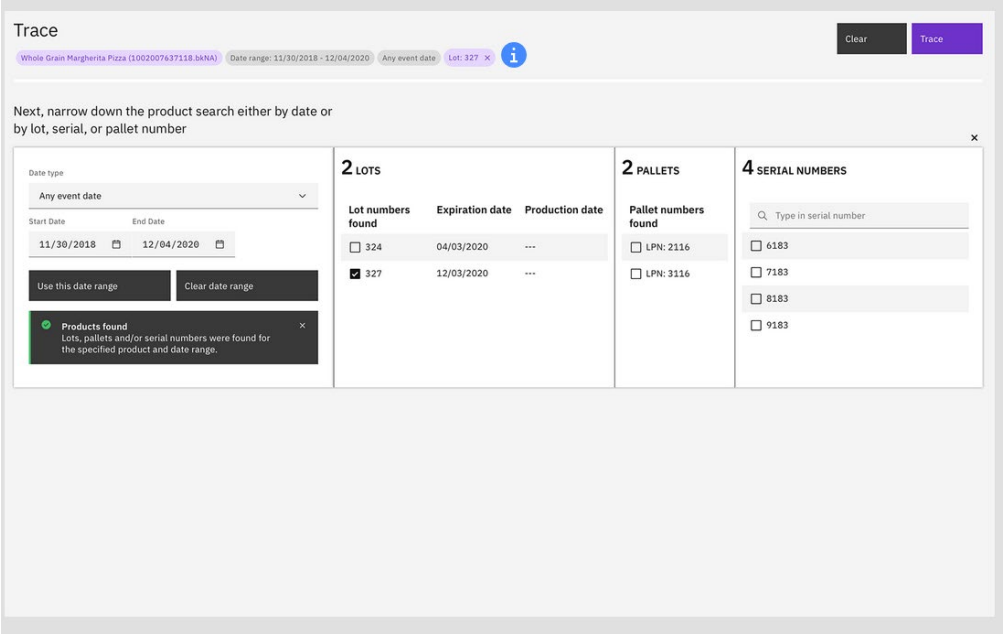


IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

168. For example, IBM's Food Trust blockchain solution enables a permissioned client [authorized authoring member] to create an ordered transaction [draft informational object] that uniquely identifies a food product (e.g., by the product's ID, name or the associated PO number) for tracking purposes. Specifically, IBM's Food Trust solution "assigns predefined roles that grant users authorization to execute specific network tasks on behalf of their organization"[74] in order to "provide[] participants with a permission-based, shared view of food ecosystem information,

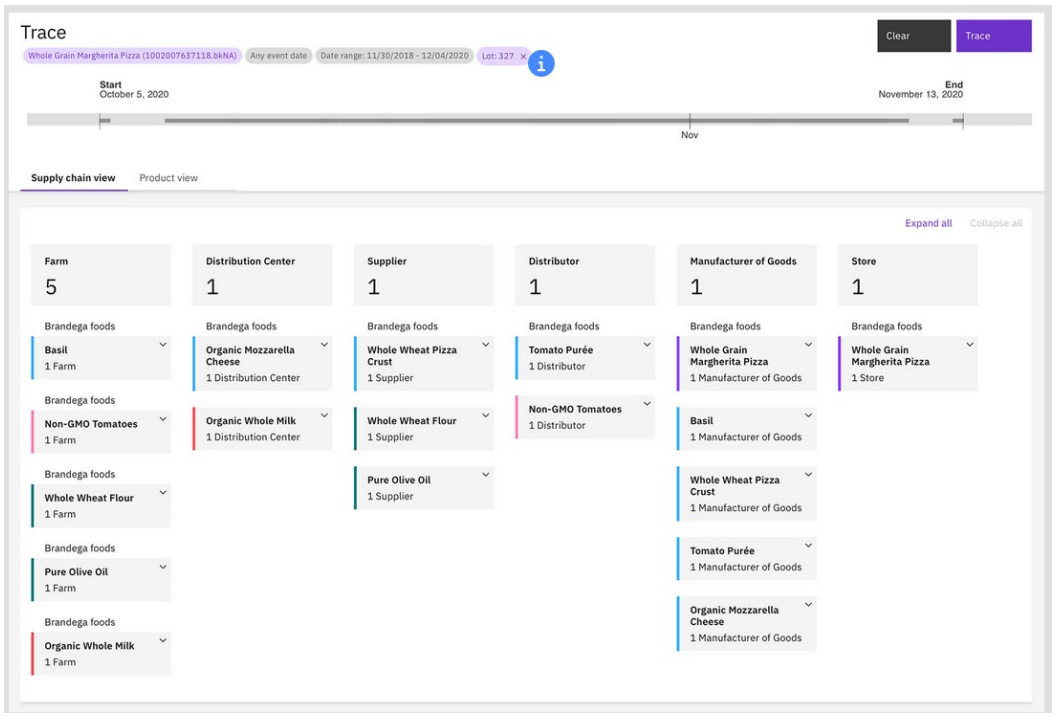
[74] *About IBM Food Trust* at p. 15, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.

allowing convenient data publishing and controlled sharing of information."[75] As IBM explains, "Food Trust solution users can quickly locate items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code (UPC) [unique identification], using the product name and filtering on dates."[76] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date,"[77] as shown below:

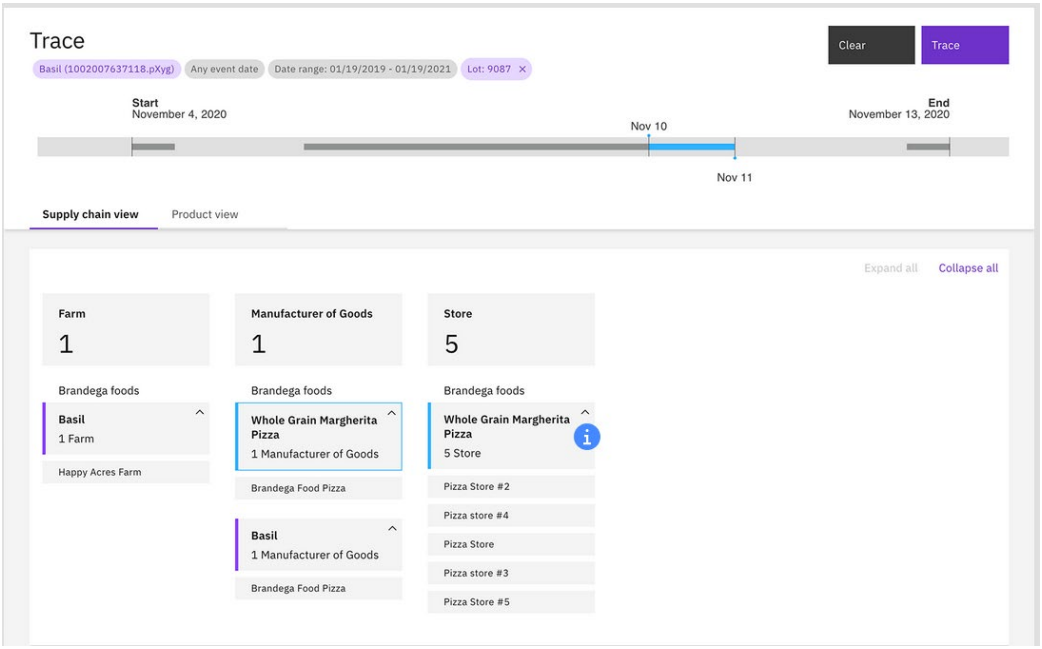


IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.

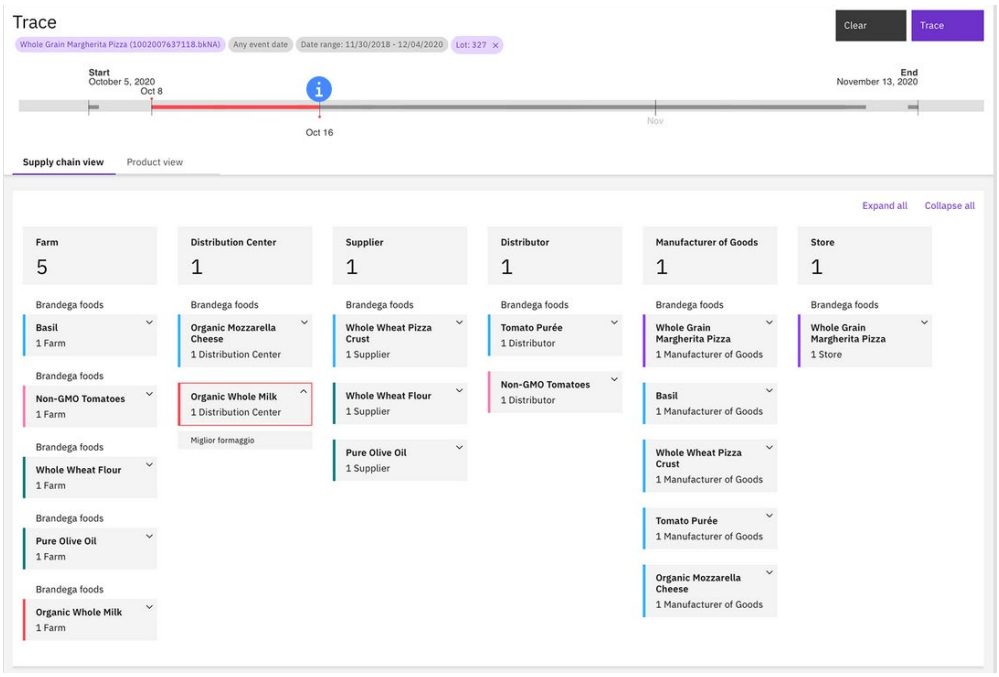
[75] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[76] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[77] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.



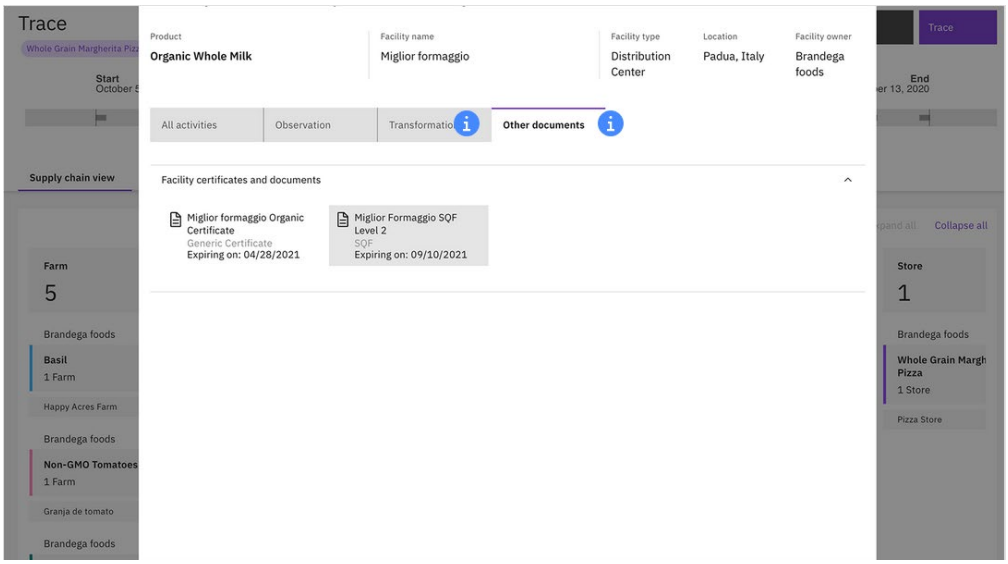
IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



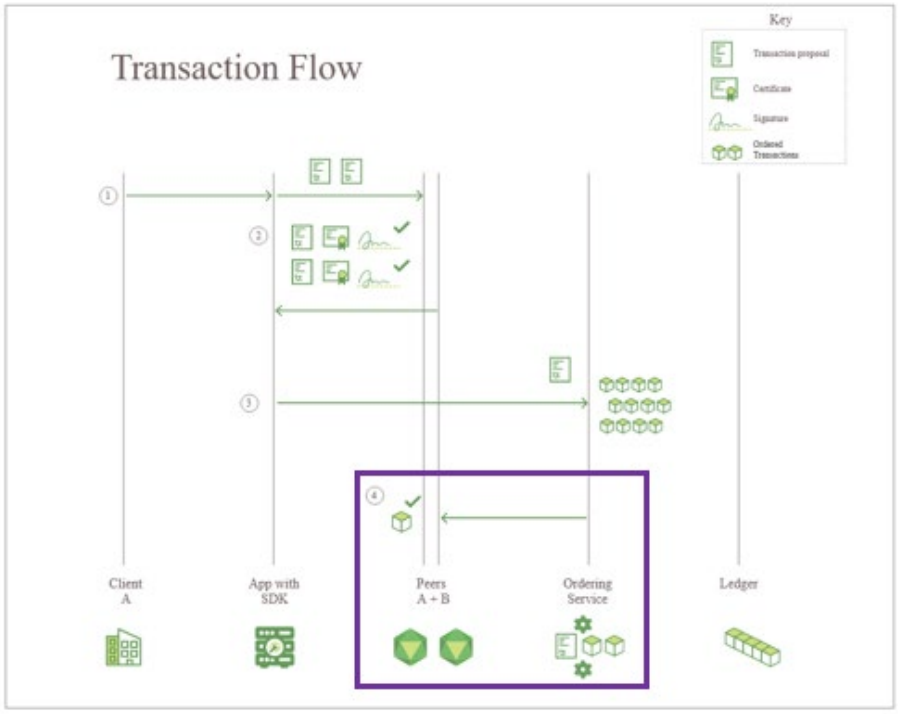
IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.

169. The Accused Products practice "authenticating the draft informational object, which uniquely identifies the product for tracking purposes, created by the authorized authoring member." For example, each Accused Product authenticates each ordered transaction [draft

informational object] via a consensus protocol. Specifically, each Accused Product distributes the ordered transaction from the ordering service to the channel peers on the network for validation, as shown below:



IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

170. During the validation process, each Accused Product employs a consensus protocol/mechanism to check the validity of each endorsed transaction proposal within the ordered transaction. As IBM explains, "[a] consensus protocol agreed to by all participating members of the business network ensures that the ledger is updated only with network-verified transactions."[78] Therefore, the Accused Products authenticate as required by claim 1 of the '902 Patent via the validation process. Further, as discussed above, the ordered transaction uniquely identifies the

[78] *Blockchain Basics: Introduction to Distributed Ledgers*, IBM (last updated June 1, 2019), available at https://developer.ibm.com/tutorials/cl-blockchain-basics-intro-bluemix-trs.

product for tracking purposes. For example, IBM's Food Trust blockchain solution enables a permissioned client [authorized authoring member] to create an ordered transaction [draft informational object] that uniquely identifies a food product (e.g., by the product's ID, name or the associated PO number) for tracking purposes. As IBM explains, "Food Trust solution users can quickly locate items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code (UPC) [unique identification], using the product name and filtering on dates."[79] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date."[80]

171. The Accused Products practice "converting authenticated informational object created by the authorized authoring member to a corresponding immutable informational object which is identified by a unique identifier for tracking the immutable informational object." For example, once the peers authenticate the ordered transaction via the aforementioned validation process [authenticated informational object], each Accused Product converts that ordered transaction into an immutable block [immutable informational object], which is identified by a hash [unique identifier] for tracking the immutable block on the blockchain. As IBM explains, "each block contains a hash (a digital fingerprint or unique identifier),"[81] as shown below:

[79] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[80] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[81] Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain.

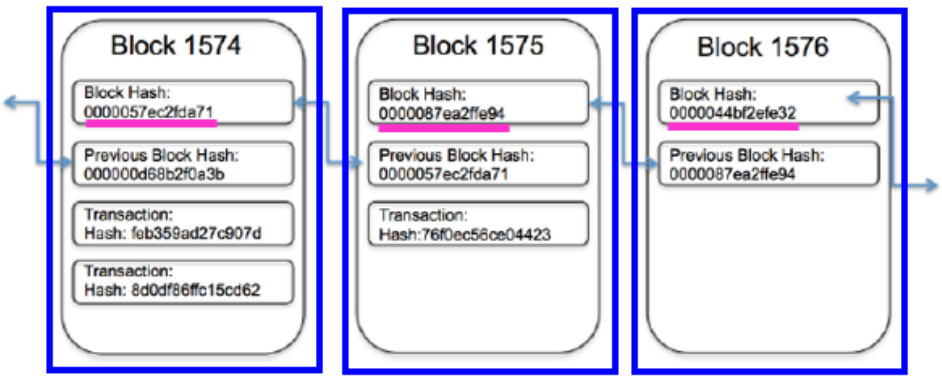


FIGURE 2-1: Blockchain stores transaction records in a series of connected blocks.

Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain (emphasis added).

172. The Accused Products practice "writing the created immutable informational object into a memory for use by independent authorized accessing members." For example, each Accused Product appends [writes] each authenticated block [created immutable informational object] to the record (i.e., block) preceding it on the shared ledger of the network [into a memory] via each peer on the channel to become accessible [for use] to permissioned users [independent authorized accessing members] (e.g., to access, inspect, or add to the data via the creation of a new block). Once the block is committed to the shared ledger, it is immutably written into a memory that cannot be tampered with or changed.

173. The Accused Products practice "enabling, in response to receipt of offer data from said authorized authoring member, an independent member identified in said offer data to access a copy of the immutable informational object to an extent and for a duration defined by permissions set by the authorized authoring member in said offer data." For example, each Accused Product enables a console administrator (e.g., a permissioned client) [authorized authoring member] to set permissions, via permission mapping, to constrain network participation, such as allowing certain additional permissioned users [an independent member] to access a copy of the block. Within each

Accused Product, the "[i]dentity and access management (IAM) allows the owner of a console to control which users have access to the console and their privileges within it. IAM is built into the blockchain console and includes local console authentication and role management."[82] On information and belief, each Accused Product enables a permissioned client [authorized authoring member] to set permissions that restrict the extent and duration to which the block may be accessed.

174. The Accused Products practice "enabling, in response to receipt of offer data from said authorized authoring member, an independent member identified in said offer data to revise data contained in the copy of the immutable informational object to the extent and for the duration defined by the permissions." For example, each Accused Product enables a permissioned client [authorized authoring member] to set permissions, via permission mapping, to constrain network participation, such as allowing certain additional permissioned users [an independent member] to revise data contained in the copy of the block. In doing so, the underlying data associated with a previous transaction is updated according to changes or introduction of new data, with the new or changed information of the additional block relating back to the previous block's information. Within each Accused Product, the "[i]dentity and access management (IAM) allows the owner of a console to control which users have access to the console and their privileges within it. IAM is built into the blockchain console and includes local console authentication and role management."[83] On information and belief, each Accused Product enables a permissioned client

[82] *Security*, IBM Documentation for IBM Blockchain Platform v2.1.2 (last updated Nov. 2, 2020), available at https://cloud.ibm.com/docs/blockchain-sw?topic=blockchain-sw-ibp-security#ibp-security-ibp.
[83] *Security*, IBM Documentation for IBM Blockchain Platform v2.1.2 (last updated Nov. 2, 2020), available at https://cloud.ibm.com/docs/blockchain-sw?topic=blockchain-sw-ibp-security#ibp-security-ibp.

[authorized authoring member] to set permissions that restrict the extent and duration to which the block may be revised.

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

175. In addition and/or in the alternative to its direct infringements, IBM has indirectly infringed one or more claims of the '902 Patent by knowingly and intentionally inducing others, including its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers, to directly infringe by making, using, offering to sell, selling and/or importing into the United States the Accused Products.

176. At a minimum, IBM has had knowledge of the '902 Patent based at least on its conduct before the United States Patent and Trademark Office ("USPTO"). For example, U.S. Patent Application Publication No. US2007/0061360 A1 (the publication of the '668 Patent) was cited by the Examiner during the prosecution of U.S. Patent Application Publication No. 2012/0150925 A1, entitled "Proactive Method for Improved Reliability for Sustained Persistence of Immutable Files in Storage Clouds" and assigned to IBM. In addition, IBM has constructive knowledge of the '902 Patent given Pardalis' compliance with 35 U.S.C. § 287.

177. Upon information and belief, since at least the above-mentioned instances when IBM was on notice of the '902 Patent, IBM has actively induced the direct infringements of its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers as set forth under U.S.C. § 271(b). Such inducements have been committed with the knowledge, or with willful blindness to the fact, that the acts induced constitute infringement of the '902 Patent. Indeed, IBM intended to cause and took affirmative steps to induce infringement by, among other things, creating and disseminating advertisements and instructive materials that

promote the infringing use of the Accused Products;[84] creating and/or maintaining established distribution channels for the Accused Products into and within the United States; manufacturing the Accused Products in conformity with U.S. laws and regulations; distributing or making available technical documentation supporting use of the Accused Products that promote their features, specifications, and applications—including webinars, interactive sessions, white papers, brochures, and manuals;[85] providing developer tools for the Accused Products—including software development kits (SDKs) and application programming interfaces (APIs); testing and certifying blockchain features in the Accused Products; and by providing technical support, onboarding services, product updates, tutorials, training, and/or related services for these products to purchasers in the United States.[86]

Damages

178. Pardalis has been damaged as a result of IBM's infringing conduct described in this Count. IBM is, thus, liable to Pardalis in an amount that adequately compensates Pardalis for

[84] *See, e.g.*, *Implementation Guide for IBM Blockchain Platform for Multicloud*, IBM Redbooks, available at www.redbooks.ibm.com/redbooks/pdfs/sg248458.pdf; *Developing a Blockchain Business Network with Hyperledger Composer using the IBM Blockchain Platform Starter Plan*, IBM Redbooks, available at www.redbooks.ibm.com/abstracts/redp5492.html; *Zero to Blockchain, IBM Redbooks Cours*e, available at www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/crse0401.html.

[85] *See, e.g.*, *IBM Blockchain Platform: Technical Overview*, IBM (2022), available at https://www.ibm.com/downloads/cas/Q9DGBLV7; *Getting started with IBM Blockchain Platform*, IBM Documentation, available at https://cloud.ibm.com/docs/blockchain; Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 7 (2020), available at https://www.ibm. com /topics/what-is-blockchain; *IBM Blockchain Platform Console Video Series*, IBM (last updated July 1, 2020), available at https://developer.ibm.com/series/ibm-blockchain-platform-console-video-series/.

[86] *See., e.g., IBM Support for Hyperledger Fabric*, available at www.ibm.com/cloud/blockchain-platform/hyperledger-fabric-support; *Blockchain Tutorials*, IBM Developer, available at https://developer.ibm.com/technologies/blockchain/tutorials/; *IBM Blockchain 101: Quick-start guide for developers*, IBM Developer, available at https://developer.ibm.com/tutorials/cl-ibm-blockchain-101-quick-start-guide-for-developers-bluemix-trs/.

IBM's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT VII

(INFRINGEMENT OF U.S. PATENT NO. 11,126,790)

179. Plaintiff incorporates the preceding paragraphs herein by reference.

180. This cause of action arises under the patent laws of the United States, and, in particular, 35 U.S.C. §§ 271, *et seq*.

181. Pardalis is the owner of all substantial rights, title, and interest in and to the '790 Patent including the right to exclude others and to enforce, sue, and recover damages for past infringements.

182. The '790 Patent is valid, enforceable, and was duly and legally issued by the United States Patent and Trademark Office on September 21, 2021, after full and fair examination.

183. IBM has directly and/or indirectly infringed (by inducing infringement) one or more claims of the '790 Patent in this District and elsewhere in Texas and the United States by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell, and/or import, IBM products, their components and processes, and/or products containing the same that incorporate the fundamental technologies covered by the '790 Patent, including, but not limited to, the Accused Products.

Direct Infringement (35 U.S.C. § 271(a))

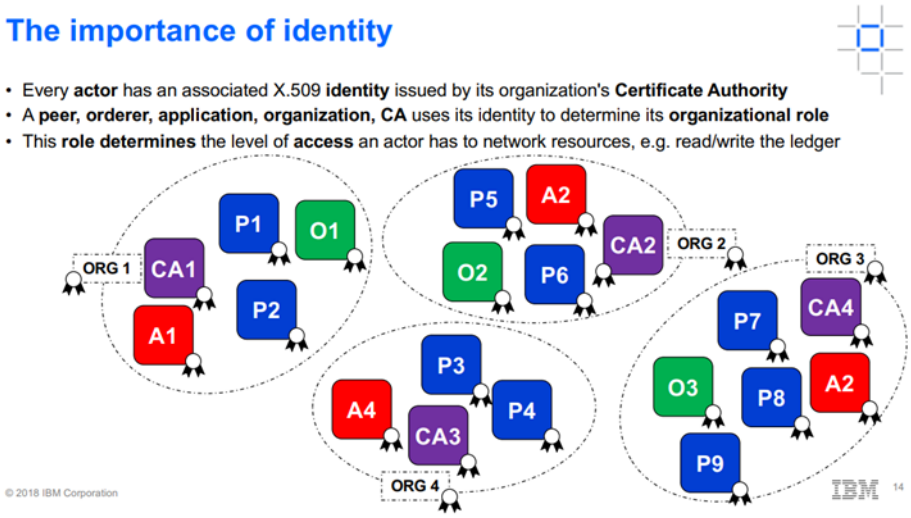
184. IBM has directly infringed one or more claims of the'790 Patent in this District and elsewhere in Texas and the United States.

185. IBM has directly infringed, either by itself or via its agent(s), at least claim 1 of the '790 Patent as set forth under 35 U.S.C. § 271(a) by making, offering to sell, selling, testing, and/or using the Accused Products.

186. By way of illustration only, the Accused Products perform each and every element of claim 1 of the '790 Patent. The Accused Products perform "a method for maintaining data for use by authoring and accessing members to track uniquely identified processed products and informational objects." For example, each Accused Product maintains a series of ordered and back-linked blocks within an append-only distributed system of records (i.e., a shared ledger) across a peer-to-peer network for permissioned clients and users [authoring and accessing members] to track uniquely identified assets [products] as well as uniquely identified blocks [informational objects] within the blockchain. On information and belief, permissioned users may use the unique transaction hash/transaction ID, associated with a specific transaction (e.g., specific product(s)) on the blockchain, for tracking purposes. On information and belief, permissioned users may also use the block hash for tracking a block on the blockchain. For example, IBM's Food Trust blockchain solution maintains data (e.g., food supply chain data) on a blockchain ledger to provide a permission-based, shared view of food ecosystem information for permissioned users to track uniquely identified food products. As IBM explains, "Food Trust solution users can quickly locate items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code (UPC) [unique identification], using the product name and filtering on dates."[87] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date."[88]

[87] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[88] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.

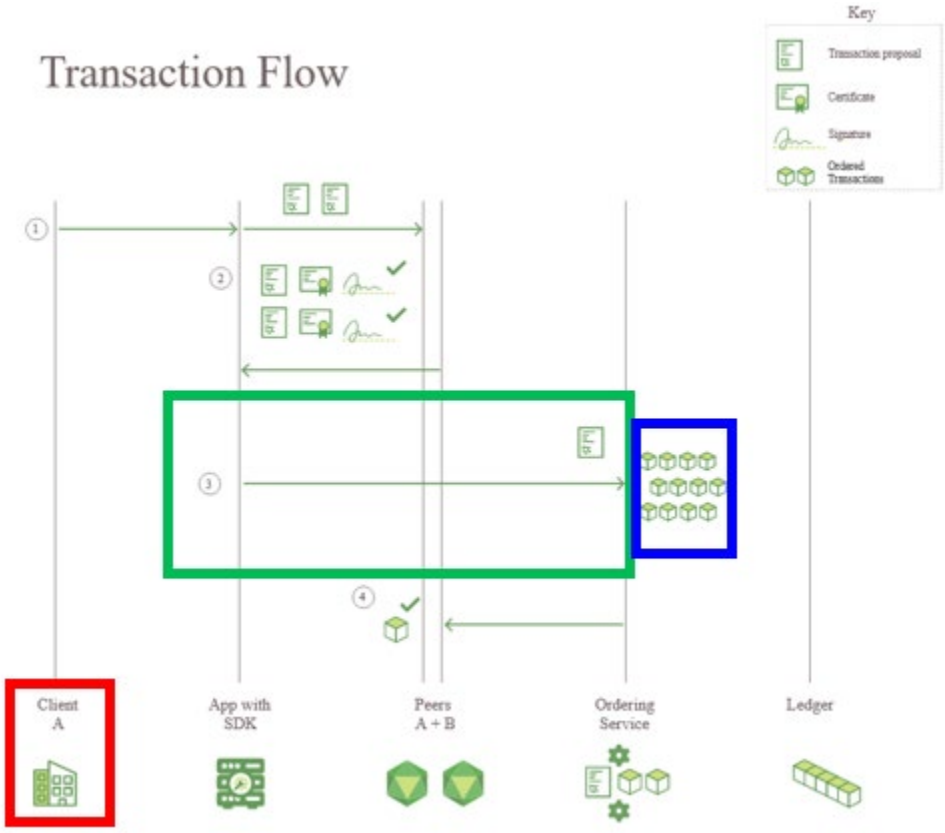
187. The Accused Products practice "enabling an authorized authoring member to create data comprising a draft informational object, which uniquely identifies a processed product for tracking purposes." For example, each Accused Product enables a permissioned client [authorized authoring member], via one or more certificate authorities, to create an ordered transaction containing one or more endorsed transaction proposals [data comprising a draft informational object] that uniquely identifies an asset [processed product] for tracking purposes. Specifically, the Accused Products utilize one or more certificate authorities to generate unique identities for each permissioned client, which enables the use of policies to constrain network participation (e.g., to read and/or write the shared ledger) and access to transaction details, as shown below:



IBM Blockchain Platform: Technical Introduction, at p. 14 (2019, version 1.1).

188. When a client is authorized to write the ledger based on its unique identity [authorized authoring member], each Accused Product enables that permissioned client to create the ordered transaction containing one or more endorsed transaction proposals, as shown below:

Transaction Flow, available at https://hyperledger-fabric.readthedocs.io/en/release-1.4/txflow.html (emphasis added).

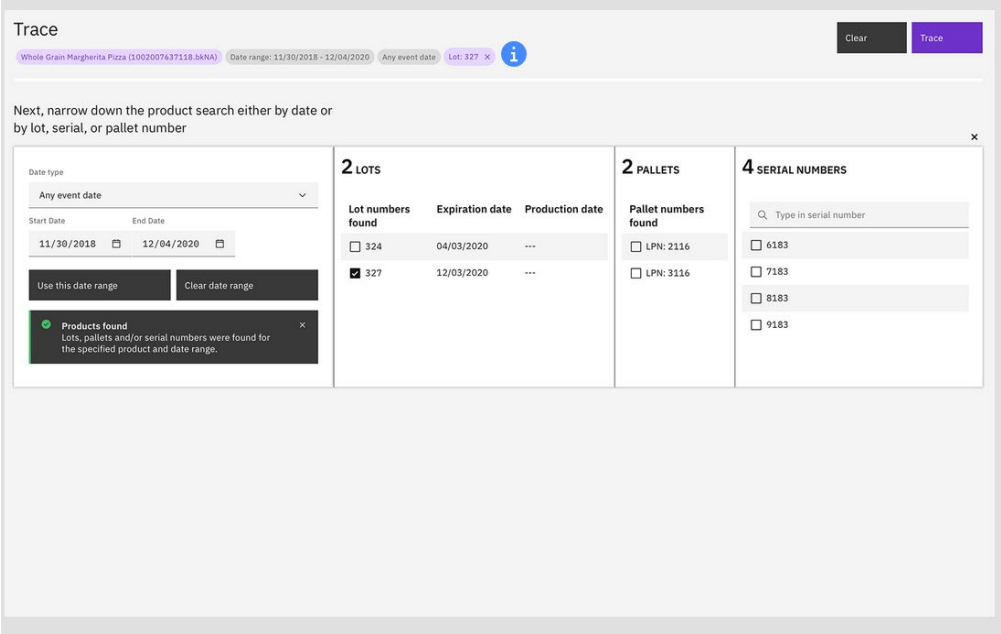


IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

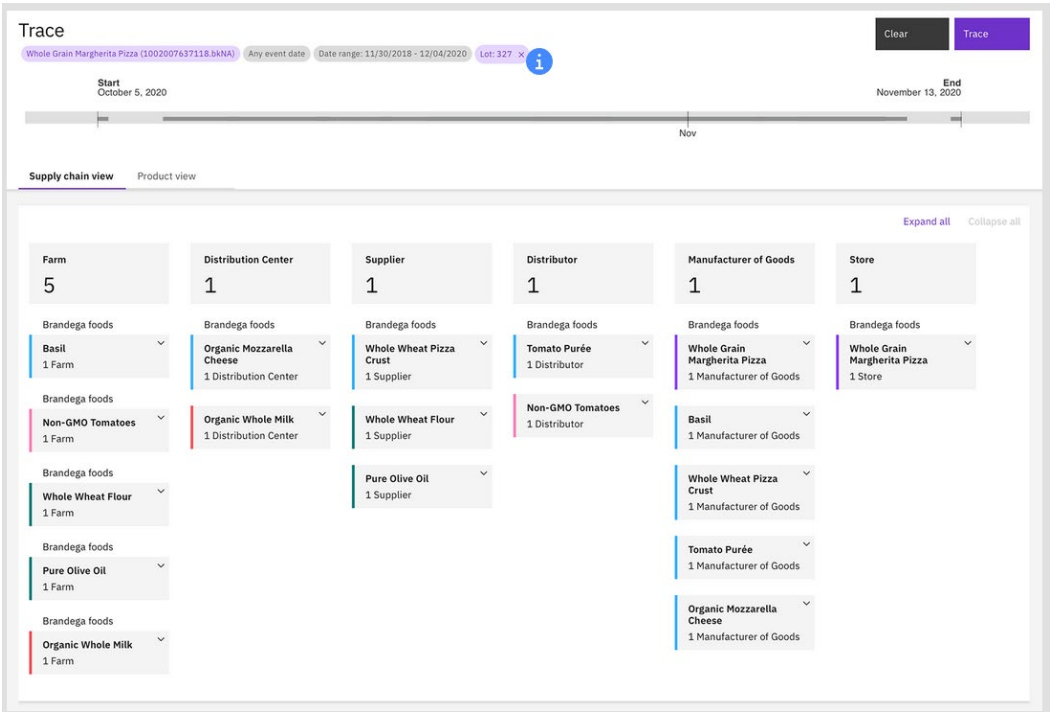
189. For example, IBM's Food Trust blockchain solution enables a permissioned client [authorized authoring member] to create an ordered transaction [draft informational object] that uniquely identifies a food product (e.g., by the product's ID, name or the associated PO number)

for tracking purposes. Specifically, IBM's Food Trust solution "assigns predefined roles that grant users authorization to execute specific network tasks on behalf of their organization"[89] in order to "provide[] participants with a permission-based, shared view of food ecosystem information, allowing convenient data publishing and controlled sharing of information."[90] As IBM explains, "Food Trust solution users can quickly locate items from the supply chain, in real time, by querying food product identifiers such as Global Trade Item Number (GTIN) or Universal Product Code (UPC) [unique identification], using the product name and filtering on dates."[91] "Once data is uploaded [by a permissioned client], the trace module [of IBM's Food Trust] allows an authorized user to search the provenance of a food product (via GTIN, product name, or Purchase Order) and can narrow down by a specific date,"[92] as shown below:

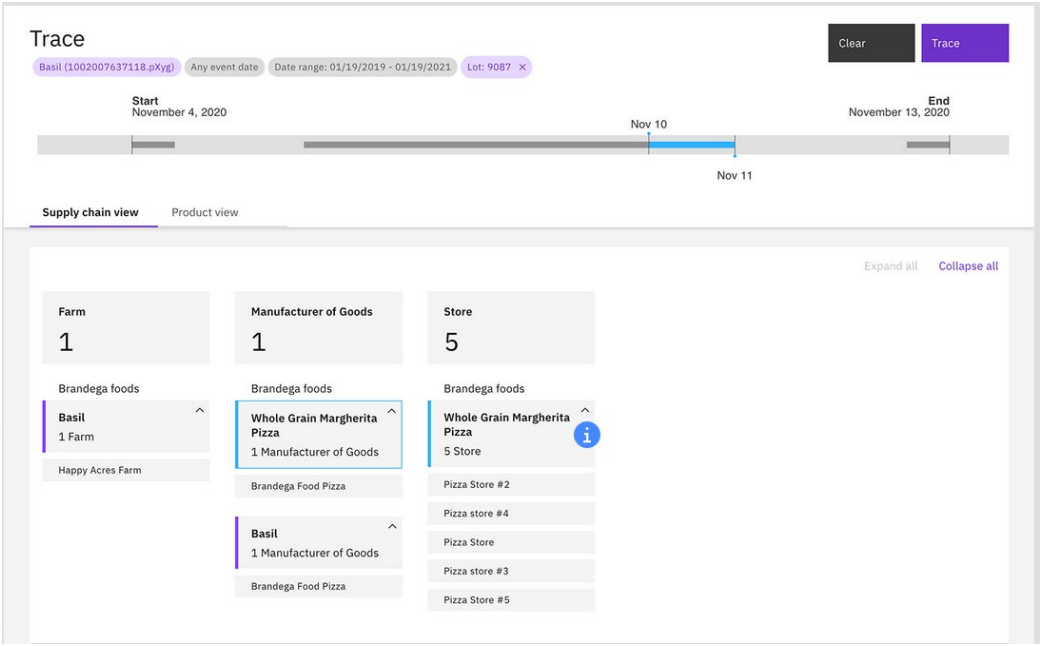
[89] *About IBM Food Trust* at p. 15, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[90] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[91] *About IBM Food Trust* at p. 5, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.
[92] *About IBM Food Trust* at p. 7, IBM (2019), available at https://www.ibm.com/downloads/cas/8QABQBDR.



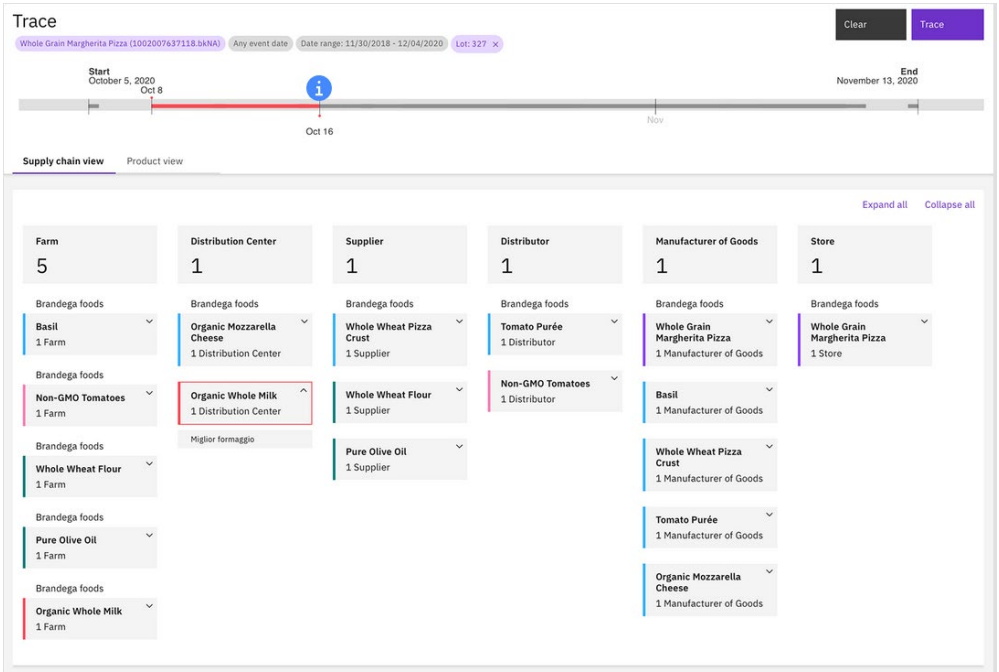
IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



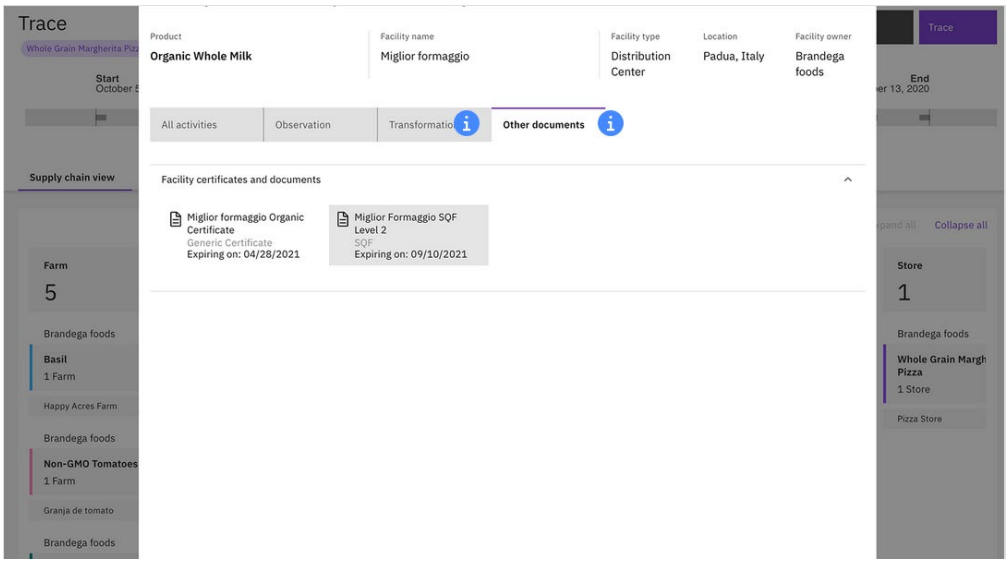
IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.

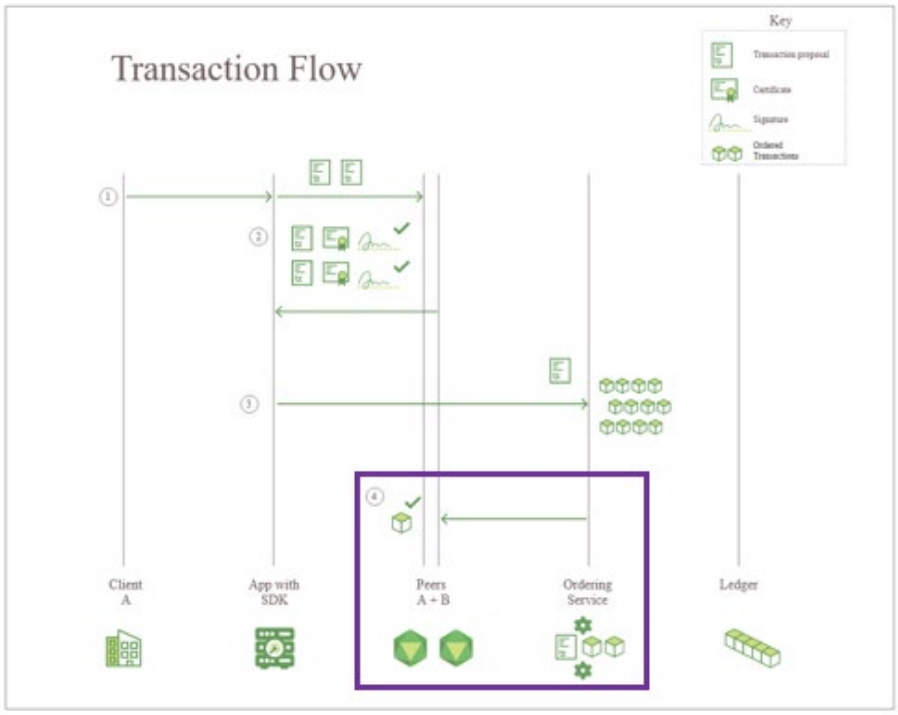


IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.



IBM Food Trust: Trace, IBM, available at https://www.ibm.com/blockchain/resources/food-trust/demo/trace.

190. The Accused Products practice "authenticating the draft informational object, which uniquely identifies the processed product for tracking purposes, created by the authorized authoring member." For example, each Accused Product authenticates each ordered transaction [draft informational object] via a consensus protocol. Specifically, each Accused Product distributes the ordered transaction from the ordering service to the channel peers on the network for validation, as shown below:



IBM Blockchain Platform for IBM Cloud, IBM, available at https://cloud.ibm.com/docs/blockchain/reference?topic=blockchain-hyperledger-fabric#hyperledger-fabric-certificate-authority (emphasis added).

191. During the validation process, each Accused Product employs a consensus protocol/mechanism to check the validity of each endorsed transaction proposal within the ordered transaction. As IBM explains, "[a] consensus protocol agreed to by all participating members of the business network ensures that the ledger is updated only with network-verified transactions."[93] Therefore, the Accused Products authenticate as required by claim 1 of the '790 Patent via the validation process. Further, as discussed above, the ordered transaction uniquely identifies the product for tracking purposes. For example, IBM's Food Trust blockchain solution enables a permissioned client [authorized authoring member] to create an ordered transaction [draft

[93] *Blockchain Basics: Introduction to Distributed Ledgers*, IBM (last updated June 1, 2019), available at https://developer.ibm.com/tutorials/cl-blockchain-basics-intro-bluemix-trs.

informational object] that uniquely identifies a food product (e.g., by the product's ID, name or the associated PO number) for tracking purposes.

192. The Accused Products practice "converting authenticated informational object created by the authorized authoring member to a corresponding immutable informational object which is identified by a unique identifier for tracking the immutable informational object." For example, once the peers authenticate the ordered transaction via the aforementioned validation process [authenticated informational object], each Accused Product converts that ordered transaction into an immutable block, which is identified by a hash [unique identifier] for tracking the immutable block on the blockchain. As IBM explains, "each block contains a hash (a digital fingerprint or unique identifier),"[94] as shown below:

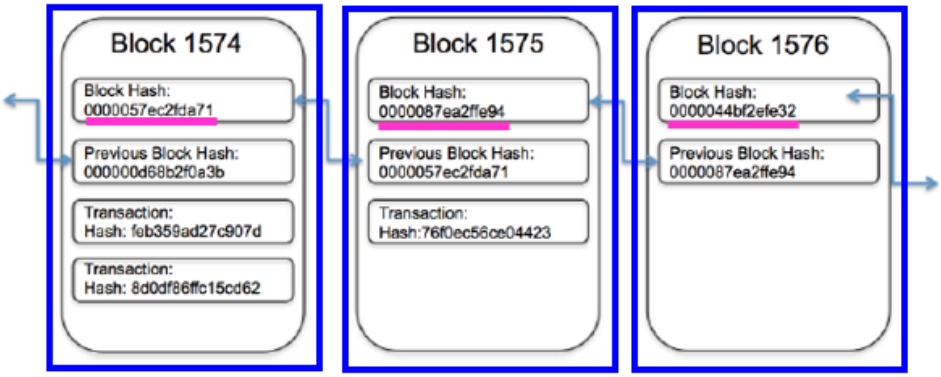


FIGURE 2-1: Blockchain stores transaction records in a series of connected blocks.

Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain (emphasis added).

193. The Accused Products practice "writing the created immutable informational object into a memory for use by independent authorized accessing members." For example, each Accused Product appends [writes] each authenticated block [created immutable informational object] to the

[94] Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 14 (2020), available at https://www.ibm.com/topics/what-is-blockchain.

record (i.e., block) preceding it on the shared ledger of the network [into a memory] via each peer on the channel to become accessible [for use] to permissioned users [independent authorized accessing members] (e.g., to access, inspect, or add to the data via the creation of a new block). Once the block is committed to the shared ledger, it is immutably written into a memory that cannot be tampered with or changed.

194. The Accused Products practice "enabling, in response to receipt of offer data from the authorized authoring member, an independent member identified in the offer data to access a copy of the immutable informational object to an extent and for a duration defined by permissions set by the authorized authoring member in the offer data." For example, each Accused Product enables a console administrator (e.g., a permissioned client) [authorized authoring member] to set permissions, via permission mapping, to constrain network participation, such as allowing certain additional permissioned users [an independent member] to access a copy of the block. Within each Accused Product, the "[i]dentity and access management (IAM) allows the owner of a console to control which users have access to the console and their privileges within it. IAM is built into the blockchain console and includes local console authentication and role management."[95] On information and belief, each Accused Product enables a permissioned client [authorized authoring member] to set permissions that restrict the extent and duration to which the block may be accessed.

195. The Accused Products practice the element of "enabling, in response to receipt of offer data from the authorized authoring member, an independent member identified in the offer data to revise data contained in the copy of the immutable informational object to the extent and for the duration defined by the permissions." For example, each Accused Product enables a console

[95] https://cloud.ibm.com/docs/blockchain-sw?topic=blockchain-sw-ibp-security

administrator (e.g., a permissioned client) [authorized authoring member] to set permissions, via permission mapping, to constrain network participation, such as allowing certain additional permissioned users [an independent member] to revise data contained in the copy of the block. In doing so, the underlying data associated with a previous transaction is updated according to changes or introduction of new data, with the new or changed information of the additional block relating back to the previous block's information. Within each Accused Product, the "[i]dentity and access management (IAM) allows the owner of a console to control which users have access to the console and their privileges within it. IAM is built into the blockchain console and includes local console authentication and role management."[96] On information and belief, each Accused Product enables a permissioned client [authorized authoring member] to set permissions that restrict the extent and duration to which the block may be revised.

Indirect Infringement (Inducement – 35 U.S.C. § 271(b))

196. In addition and/or in the alternative to its direct infringements, IBM has indirectly infringed one or more claims of the '790 Patent by knowingly and intentionally inducing others, including its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers, to directly infringe by making, using, offering to sell, selling and/or importing into the United States the Accused Products.

197. At a minimum, IBM has had knowledge of the '790 Patent based at least on its conduct before the United States Patent and Trademark Office ("USPTO"). For example, U.S. Patent Application Publication No. US2007/0061360 A1 (the publication of the '668 Patent) was cited by the Examiner during the prosecution of U.S. Patent Application Publication No.

[96] *Security*, IBM Documentation for IBM Blockchain Platform v2.1.2 (last updated Nov. 2, 2020), available at https://cloud.ibm.com/docs/blockchain-sw?topic=blockchain-sw-ibp-security#ibp-security-ibp.

2012/0150925 A1, entitled "Proactive Method for Improved Reliability for Sustained Persistence of Immutable Files in Storage Clouds" and assigned to IBM. In addition, IBM has constructive knowledge of the '790 Patent given Pardalis' compliance with 35 U.S.C. § 287.

198. Upon information and belief, since at least the above-mentioned instances when IBM was on notice of the '790 Patent, IBM has actively induced the direct infringements of its subsidiaries, distributors, affiliates, retailers, suppliers, integrators, importers, customers, and/or consumers as set forth under U.S.C. § 271(b). Such inducements have been committed with the knowledge, or with willful blindness to the fact, that the acts induced constitute infringement of the '790 Patent. Indeed, IBM intended to cause and took affirmative steps to induce infringement by, among other things, creating and disseminating advertisements and instructive materials that promote the infringing use of the Accused Products;[97] creating and/or maintaining established distribution channels for the Accused Products into and within the United States; manufacturing the Accused Products in conformity with U.S. laws and regulations; distributing or making available technical documentation supporting use of the Accused Products that promote their features, specifications, and applications—including webinars, interactive sessions, white papers, brochures, and manuals;[98] providing developer tools for the Accused Products—including

[97] *See, e.g.*, *Implementation Guide for IBM Blockchain Platform for Multicloud*, IBM Redbooks, available at www.redbooks.ibm.com/redbooks/pdfs/sg248458.pdf; *Developing a Blockchain Business Network with Hyperledger Composer using the IBM Blockchain Platform Starter Plan*, IBM Redbooks, available at www.redbooks.ibm.com/abstracts/redp5492.html; *Zero to Blockchain, IBM Redbooks Cours*e, available at www.redbooks.ibm.com/Redbooks.nsf/Redbook Abstracts/crse0401.html.

[98] *See, e.g.*, *IBM Blockchain Platform: Technical Overview*, IBM (2022), available at https://www.ibm.com/downloads/cas/Q9DGBLV7; *Getting started with IBM Blockchain Platform*, IBM Documentation, available at https://cloud.ibm.com/docs/blockchain; Manav Gupta, *Blockchain for Dummies: 3rd IBM Limited Edition*, at p. 7 (2020), available at https://www.ibm. com /topics/what-is-blockchain; *IBM Blockchain Platform Console Video Series*, IBM (last updated July 1, 2020), available at https://developer.ibm.com/series/ibm-blockchain-platform-console-video-series/.

software development kits (SDKs) and application programming interfaces (APIs); testing and certifying blockchain features in the Accused Products; and by providing technical support, onboarding services, product updates, tutorials, training, and/or related services for these products to purchasers in the United States.[99]

Damages

199. Pardalis has been damaged as a result of IBM's infringing conduct described in this Count. IBM is, thus, liable to Pardalis in an amount that adequately compensates Pardalis for IBM's infringements, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

CONCLUSION

200. Pardalis is entitled to recover from IBM the damages sustained by Pardalis as a result of IBM's wrongful acts, in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court.

201. Pardalis has incurred and will incur attorneys' fees, costs, and expenses in the prosecution of this action. The circumstances of this dispute may give rise to an exceptional case within the meaning of 35 U.S.C. § 285, and Pardalis is entitled to recover its reasonable and necessary attorneys' fees, costs, and expenses.

JURY DEMAND

202. Pardalis hereby requests a trial by jury pursuant to Rule 38 of the Federal Rules of Civil Procedure.

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[99] *See., e.g., IBM Support for Hyperledger Fabric*, available at www.ibm.com/cloud/blockchain-platform/hyperledger-fabric-support; *Blockchain Tutorials*, IBM Developer, available at https://developer.ibm.com/technologies/blockchain/tutorials/; *IBM Blockchain 101: Quick-start guide for developers*, IBM Developer, available at https://developer.ibm.com/tutorials/cl-ibm-blockchain-101-quick-start-guide-for-developers-bluemix-trs/.

PRAYER FOR RELIEF

203. Pardalis respectfully requests that the Court find in its favor and against IBM, and that the Court grant Pardalis the following relief:

(i) A judgment that one or more claims of the Asserted Patents have been infringed, either literally and/or under the doctrine of equivalents, by Defendant;

(ii) A judgment that Defendant account for and pay to Plaintiff all damages and costs incurred by Plaintiff because of Defendant's infringing activities and other conduct complained of herein, including an accounting for any sales or damages not presented at trial;

(iii) A judgment that Plaintiff be granted pre-judgment interest on the damages caused by Defendant's infringing activities and other conduct complained of herein;

(iv) A judgment that this case is exceptional under the provisions of 35 U.S.C. § 285 and award enhanced damages; and

(v) Such other and further relief as the Court deems just and equitable.

Dated: November 22, 2022

Respectfully submitted,

/s/ Justin B. Kimble

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