

CLAIMS

What is claimed is:

1. A system for tracking, management, and fulfillment of hotel room-related transactions in one or more hotels, comprising:

5 a network of nodes communicably coupled to endpoints in a distributed network,
wherein the network of nodes maintains a distributed ledger with entries from one or more endpoints,

wherein the entries include: entries from customers relating to at least one hotel room offered by an operator of the one or more hotels, and entries from
10 the operator regarding an availability status of the at least one hotel room, and

wherein each of the entries is associated with at least one access level needed to review a respective entry;

a communications component to receive a request to view at least a portion of one or
15 more of the entries stored in the distributed ledger,

wherein the request includes an access code associated with the at least one access level;

an access control layer to: evaluate the access code in the request, and identify segments within the one or more entries stored on the distributed ledger that
20 are accessible with the at least one access level provided in the request; and

means to generate a customized view of the segments identified by the access control layer.

2. The system of claim 1, wherein the one or more endpoints include at least one of: a surveillance, a security, an imaging or video, and an access control, device.

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3. The system of claim 2, wherein the one or more endpoints includes the access control device, wherein the access control device or system includes a key card reader, and wherein the system further comprises:

a payment processing system; and

30 means for charging, using the payment processing system, a customer of the one or more hotels after the customer first enters the at least one hotel room using a

key card.

4. The system of claim 3 further comprising means for automatically updating an availability status of the at least one hotel room after the customer first enters the at least one
5 hotel room.
5. The system of claim 3 further comprising means for automatically crediting or debiting rewards points of the customer after the customer first enters the at least one hotel room.
- 10 6. The system of claim 1, further comprising an artificial intelligence engine to: review entries within the distributed ledger, and assign the at least one access level needed to review each of the entries.
- 15 7. The system of claim 6, wherein the artificial intelligence engine classifies data within each of the entries into one or more categories.
8. The system of claim 7, wherein the access control layer then sets a different encryption level for each of the one or more categories of data classified by the artificial intelligence engine.
- 20 9. The system of claim 7, wherein the one or more categories include e-mail addresses, account numbers, loyalty points balances, hotel guest names, mailing addresses, vehicle identification numbers, license plate numbers, biometrics, driver's license numbers, photographs, or social security numbers.
- 25 10. The system of claim 1, wherein the access level associated with segments within the one or more entries includes at least one of: a private access level, a permissive access level, and a public access level.
11. The system of claim 10, wherein:
30 the entries from customers include data representative of: one or more identifiers of the customer under whose name the at least one hotel room is registered, a payment account of the customer, and loyalty points of the customer; and

the entries from the operator include data representative of: a room rate, an availability status, and an inventory, for the at least one hotel room.

12. The system of claim 11, wherein one of:

5 the one or more identifiers of the customer is associated with the private access level;
the room rate for the at least one hotel room is associated with the permissive access level; and

the availability status for the at least one hotel room is associated with the public access level.

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13. The system of claim 1, wherein the at least one access level needed to review the respective entry includes a security access level.

14. The system of claim 13 further comprising means to apply redaction mappings to the
15 entries based on the security clearance level.

15. The system of claim 1 further comprising means to record at least a portion of the entries from customers into the distributed ledger separately from at least a portion of the entries from the operator.

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16. The system of claim 1 further comprising a payment processing system configured to receive or transmit payment or refund information for the hotel room-related transaction.

17. The system of claim 16, wherein the payment or refund information includes
25 cryptocurrency account data of a customer of the at least one hotel.

18. The system of claim 17 further comprising means to automatically convert the cryptocurrency to a real currency according to an exchange rate.

30 19. The system of claim 1, wherein the communications component is configured to receive the request to view the at least a portion of the one or more of the entries stored in the

distributed ledger from at least one of the one or more endpoints operable by: at least one of the customer, or the operator.

20. The system of claim 1 further comprising means to obfuscate identifying information of a user making the request to view at least a portion of the one or more entries.

21. The system of claim 1 further comprising means to apply redactions to any segments within the one or more entries stored in the distributed ledger that are not accessible with the at least one access level provided in the request.

22. A method for generating a customized view of blockchain data for hotel room-related transactions in one or more hotels, the method comprising:

receiving a request to view at least a portion of one or more entries stored in a distributed ledger maintained by a network of nodes in a distributed network,

wherein the network of nodes maintains the distributed ledger with entries from one or more endpoints,

wherein the entries include: entries from customers relating to at least one hotel room offered by an operator of the one or more hotels, and entries from the operator regarding an availability status of the at least one hotel room,

wherein each of the entries is associated with at least one access level needed to review a respective entry, and

wherein the request includes an access code associated with the at least one access level;

evaluating the access code in the request to identify segments within the one or more entries stored in the distributed ledger that are accessible with the at least one access level provided in the request; and

generating a customized view of the segments identified within the one or more entries.

23. The method of claim 22, wherein the at least one access level needed to review the entry includes a security clearance level.

24. The method of claim 23 further comprising applying redaction mappings to the entries based on the security clearance level.

25. The method of claim 22 further comprising recording at least a portion of the entries from customers into the distributed ledger separately from at least a portion of the entries from the operator.

26. The method of claim 22 further comprising receiving or transmitting payment or refund information for the hotel room-related transaction.

27. The method of claim 26, wherein the payment or refund information includes cryptocurrency account data of a customer of the at least one hotel.

28. The method of claim 27 further comprising automatically converting the cryptocurrency to a real currency according to an exchange rate.

29. The method of claim 22, wherein receiving the request to view at least a portion of one or more entries stored in a distributed ledger comprises receiving the request from at least one of the one or more endpoints operable by: at least one of the customer, or the operator.

30. The method of claim 22 further comprising obfuscating identifying information of a user making the request to view at least a portion of the one or more entries.

31. The method of claim 22 further comprising applying redactions to any segments within the one or more entries stored in the distributed ledger that are not accessible with the at least one access level provided in the request.

32. The method of claim 22, wherein the one or more endpoints include at least one of: a surveillance, a security, an imaging or video, and an access control, device.

33. The method of claim 32, wherein the one or more endpoints includes the access

control device, wherein the access control device or system includes a key card reader, and wherein the method further comprises:

charging, using a payment processing system, a customer of the one or more hotels after the customer first enters the at least one hotel room using a key card.

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34. The method of claim 33 further comprising automatically updating an availability status of the at least one hotel room after the customer first enters the at least one hotel room.

35. The method of claim 33 further comprising automatically crediting or debiting rewards points of the customer after the customer first enters the at least one hotel room.

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36. The method of claim 22 further comprising:
reviewing, by an artificial intelligence engine, entries within the distributed ledger; and
assigning, by the artificial intelligence engine, the at least one access level needed to
review each of the entries.

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37. The method of claim 36 further comprising classifying, by the artificial intelligence engine, data within each of the entries into one or more categories.

38. The method of claim 37 further comprising setting a different encryption level for each of the one or more categories of data classified by the artificial intelligence engine.

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39. The method of claim 37, wherein the one or more categories include e-mail addresses, account numbers, loyalty points balances, hotel guest names, mailing addresses, vehicle identification numbers, license plate numbers, biometrics, driver's license numbers, photographs, or social security numbers.

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40. The method of claim 22, wherein the access level associated with segments within the one or more entries includes at least one of: a private access level, a permissive access level, and a public access level.

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41. The method of claim 40, wherein:
- the entries from customers include data representative of: one or more identifiers of the customer under whose name the at least one hotel room is registered, a payment account of the customer, and loyalty points of the customer; and
- 5 the entries from the operator include data representative of: a room rate, an availability status, and an inventory, for the at least one hotel room.
42. The method of claim 41, wherein one of:
- the one or more identifiers of the customer is associated with the private access level;
- 10 the room rate for the at least one hotel room is associated with the permissive access level; and
- the availability status for the at least one hotel room is associated with the public access level.
- 15 43. One or more non-transitory computer readable media having stored thereon program instructions which, when executed by at least one processor, cause a machine to:
- receive a request to view at least a portion of one or more entries stored in a distributed ledger maintained by a network of nodes in a distributed network,
- 20 wherein the network of nodes maintains the distributed ledger with entries from one or more endpoints,
- wherein the entries include: entries from customers relating to at least one hotel room offered by an operator of the one or more hotels, and entries from the operator regarding an availability status of the at least one hotel room,
- 25 wherein each of the entries is associated with at least one access level needed to review a respective entry, and
- wherein the request includes an access code associated with the at least one access level;
- 30 evaluate the access code in the request to identify segments within the one or more entries stored in the distributed ledger that are accessible with the at least one access level provided in the request; and
- generate a customized view of the segments identified within the one or more entries.

44. The one or more non-transitory computer readable media of claim 43, wherein the one or more endpoints include at least one of: a surveillance, a security, an imaging or video, and an access control, device.

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45. The one or more non-transitory computer readable media of claim 44, wherein the one or more endpoints includes the access control device, wherein the access control device or system includes a key card reader, and wherein when executed by the at least one processor, the program instructions further cause the machine to:

10 charge, using a payment processing system, a customer of the one or more hotels after the customer first enters the at least one hotel room using a key card.

46. The one or more non-transitory computer readable media of claim 45, wherein when executed by the at least one processor, the program instructions further cause the machine to
15 automatically update an availability status of the at least one hotel room after the customer first enters the at least one hotel room.

47. The one or more non-transitory computer readable media claim 45, wherein when executed by the at least one processor, the program instructions further cause the machine to
20 automatically credit or debit rewards points of the customer after the customer first enters the at least one hotel room.

48. The one or more non-transitory computer readable media of claim 43, wherein when executed by the at least one processor, the program instructions further cause the machine
25 to:

review, using an artificial intelligence engine, entries within the distributed ledger; and
assign, using the artificial intelligence engine, the at least one access level needed to
review each of the entries.

30 49. The one or more non-transitory computer readable media of claim 48, wherein when executed by the at least one processor, the program instructions further cause the machine to classify, using the artificial intelligence engine, data within each of the entries into one or more

categories.

50. The one or more non-transitory computer readable media of claim 49, wherein when executed by the at least one processor, the program instructions further cause the machine to set a different encryption level for each of the one or more categories of data classified by the artificial intelligence engine.

51. The one or more non-transitory computer readable media of claim 49, wherein the one or more categories include e-mail addresses, account numbers, loyalty points balances, hotel guest names, mailing addresses, vehicle identification numbers, license plate numbers, biometrics, driver's license numbers, photographs, or social security numbers.

52. The one or more non-transitory computer readable media of claim 43, wherein the access level associated with segments within the one or more entries includes at least one of: a private access level, a permissive access level, and a public access level.

53. The one or more non-transitory computer readable media of claim 52, wherein:
the entries from customers include data representative of: one or more identifiers of the customer under whose name the at least one hotel room is registered, a payment account of the customer, and loyalty points of the customer; and
the entries from the operator include data representative of: a room rate, an availability status, and an inventory, for the at least one hotel room.

54. The one or more non-transitory computer readable media of claim 53, wherein one of:
the one or more identifiers of the customer is associated with the private access level;
the room rate for the at least one hotel room is associated with the permissive access level; and
the availability status for the at least one hotel room is associated with the public access level.

55. The one or more non-transitory computer readable media of claim 43, wherein the at

least one access level needed to review the respective entry includes a security access level.

56. The one or more non-transitory computer readable media of claim 55, wherein when executed by the at least one processor, the program instructions further cause the machine to
5 apply redaction mappings to the entries based on the security clearance level.

57. The one or more non-transitory computer readable media of claim 43, wherein when executed by the at least one processor, the program instructions further cause the machine to record at least a portion of the entries from customers into the distributed ledger separately
10 from at least a portion of the entries from the operator.

58. The one or more non-transitory computer readable media of claim 43, wherein when executed by the at least one processor, the program instructions further cause the machine to receive or transmit, using a payment processing system, payment or refund information for
15 the hotel room-related transaction.

59. The one or more non-transitory computer readable media of claim 58, wherein the payment or refund information includes cryptocurrency account data of a customer of the at least one hotel.

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60. The one or more non-transitory computer readable media of claim 59, wherein when executed by the at least one processor, the program instructions further cause the machine to automatically convert the cryptocurrency to a real currency according to an exchange rate.

25 61. The one or more non-transitory computer readable media of claim 41, wherein when executed to receive the request to view the at least a portion of the one or more of the entries stored in the distributed ledger, the program instructions further cause the machine to receive the request from at least one of the one or more endpoints operable by: at least one of the customer, or the operator.

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62. The one or more non-transitory computer readable media of claim 41, wherein when executed by the at least one processor, the program instructions further cause the machine to

obfuscate identifying information of a user making the request to view at least a portion of the one or more entries.

63. The one or more non-transitory computer readable media of claim 41, wherein when
5 executed by the at least one processor, the program instructions further cause the machine to apply redactions to any segments within the one or more entries stored in the distributed ledger that are not accessible with the at least one access level provided in the request.