

CLAIMS

What is claimed is:

1. A computer-implemented method, the method comprising:
receiving, at a map-service provider associated with a blockchain, map data from
5 a data collector;
transmitting, by the map-service provider, the map data to a data-service provider
for processing;
receiving, at the map-service provider, non-crowdsourced data from a data
provider;
10 transmitting, by the map-service provider, the non-crowdsourced data to the data-
service provider for processing with the map data;
receiving, by the map-service provider, a request for processed map data from a
service user;
retrieving, by the map-service provider from the data-service provider, the
15 processed map data that is generated from the map data and the non-crowdsourced data;
and
transmitting, by the map-service provider, the processed map data to the service
user in response to the request.

20 2. The computer-implemented method of claim 1, wherein the map-service provider
provides automated data consumption or data authorization for the service user.

3. The computer-implemented method of claim 1, wherein the map-service provider,
the data-service provider, and the data provider are computing devices participating in the
25 blockchain.

4. The computer-implemented method of claim 1, further comprising:
prior to receiving the map data from the data collector, executing, by the map-
service provider, a smart contract with the data collector.

30 5. The computer-implemented method of claim 1, further comprising:

prior to transmitting the map data to the data-service provider, executing, by the map-service provider, a smart contract with the data-service provider.

6. The computer-implemented method of claim 1, wherein transmitting the map data to the data-service provider for processing includes transmitting the map data to the data-service provider for normalizing the map data or discarding irregular data from the map data.

7. The computer-implemented method of claim 1, wherein the blockchain is a consortium blockchain.

8. The computer-implemented method of claim 1, wherein the map data is collected by the data collector using crowdsourcing.

9. One or more computer-readable storage media encoded with instructions that, when executed by one or more processors, cause the one or more processors to:

receive, at a map-service provider associated with a blockchain, map data from a data collector;

transmit, by the map-service provider, the map data to a data-service provider for processing;

receive, at the map-service provider, non-crowdsourced data from a data provider;

transmit, by the map-service provider, the non-crowdsourced data to the data-service provider for processing with the map data;

receive, by the map-service provider, a request for processed map data from a service user;

retrieve, by the map-service provider from the data-service provider, the processed map data that is generated from the map data and the non-crowdsourced data; and

transmit, by the map-service provider, the processed map data to the service user in response to the request.

10. The one or more computer-readable storage media of claim 9, wherein the map-service provider provides automated data consumption or data authorization for the service user.

5 11. The one or more computer-readable storage media of claim 9, wherein the map-service provider, the data-service provider, and the data provider are computing devices participating in the blockchain.

12. The one or more computer-readable storage media of claim 9, further comprising:
10 prior to receiving the map data from the data collector, executing, by the map-service provider, a smart contract with the data collector.

13. The one or more computer-readable storage media of claim 9, further comprising:
prior to transmitting the map data to the data-service provider, executing, by the
15 map-service provider, a smart contract with the data-service provider.

14. The one or more computer-readable storage media of claim 9, wherein
transmitting the map data to the data-service provider for processing includes
transmitting the map data to the data-service provider for normalizing the map data or
20 discarding irregular data from the map data.

15. The one or more computer-readable storage media of claim 9, wherein the
blockchain is a consortium blockchain.

25 16. The one or more computer-readable storage media of claim 9, wherein the map
data is collected by the data collector using crowdsourcing.

17. A system, comprising:
one or more processors; and
30 one or more computer-readable storage media encoded with instructions that,
when executed by the one or more processors, cause the one or more processors to:

receive, at a map-service provider associated with a blockchain, map data from a data collector;

transmit, by the map-service provider, the map data to a data-service provider for processing;

5 receive, at the map-service provider, non-crowdsourced data from a data provider;

transmit, by the map-service provider, the non-crowdsourced data to the data-service provider for processing with the map data;

10 receive, by the map-service provider, a request for processed map data from a service user;

retrieve, by the map-service provider from the data-service provider, the processed map data that is generated from the map data and the non-crowdsourced data; and

15 transmit, by the map-service provider, the processed map data to the service user in response to the request.

18. The system of claim 17, wherein the map-service provider provides automated data consumption or data authorization for the service user, and wherein the map-service provider, the data-service provider, and the data provider are computing devices participating in the blockchain.

19. The system of claim 17, further comprising instructions executable by the one or more processors to, prior to receiving the map data from the data collector, executing, by the map-service provider, a smart contract with the data collector.

20. The system of claim 17, further comprising instructions executable by the one or more processors to, prior to transmitting the map data to the data-service provider, executing, by the map-service provider, a smart contract with the data-service provider.