

WHAT IS CLAIMED IS:

1. A computer-implemented method comprising:
identifying, by a server computer system, a provider computing device for use in
5 capturing street-level imagery, wherein the provider computing device controls a camera
positioned to capture street-level imagery outside a vehicle associated with the provider
computing device, and wherein the provider computing device is one of a plurality of provider
computing devices corresponding to a plurality of vehicles associated with an area;
determining, by the server computer system, based at least in part on information
10 received from the provider computing device and one or more additional provider computing
devices within the plurality of provider computing devices, a configuration that controls use of
the provider computing device to provide street-level image data captured by the camera to the
server computer system;
sending, by the server computer system, the configuration to the provider computing
15 device; and
receiving, by the server computer system, street-level image data captured by the
provider computing device using the camera responsive to the configuration.
2. The computer-implemented method of claim 1, wherein the configuration
20 controls use of the provider computing device to provide street-level image data based at least
in part on sensor data received by the provider computing device.
3. The computer-implemented method of claim 2, wherein:
the sensor data indicates a geolocation of the provider computing device; and
25 the configuration specifies at least one geolocation associated with a rule for controlling
use of the provider computing device to provide street-level image data.
4. The computer-implemented method of claim 1, wherein determining the
configuration that controls use of the provider computing device associated with the vehicle
30 comprises:
identifying a collection objective for street-level image data based on at least one data
collection rule;

determining that a set of provider computing devices associated with a corresponding set of vehicles match the data collection rule; and

determining an individual configuration for each of the set of provider computing devices such that the set of provider computing devices are collectively configured to meet the collection
5 objective.

5. The computer-implemented method of claim 4, wherein determining the individual configuration for each of the set of provider computing devices such that the set of provider computing devices are collectively configured to meet the collection objective
10 comprises:

receiving capability data from the provider computing device associated with the vehicle and capability data from at least one alternate provider computing device associated with an alternate vehicle; and

optimizing the individual configuration for each of the set of provider computing devices
15 based on the capability data from the provider computing device and the capability data from the alternate provider computing device.

6. The computer-implemented method of claim 5, wherein the capability data from the provider computing device describes computing capabilities of the provider computing
20 device and the capability data from the alternate provider computing device describes computing capabilities of the alternate provider computing device.

7. The computer-implemented method of claim 5, wherein the capability data from the provider computing device describes a view available to the camera of the provider
25 computing device and the capability data from the alternate provider computing device describes a view available to a camera of the alternate provider computing device.

8. The computer-implemented method of claim 1, further comprising updating, by the server computer system, the configuration that controls use of the provider computing
30 device associated with the vehicle based at least in part on street-level image data received from a different provider computing device associated with a different vehicle.

9. The computer-implemented method of claim 1:

wherein the provider computing device associated with the vehicle comprises a transportation matching application; and

5 further comprising transmitting, by the server computer system, instructions to the transportation matching application based at least in part on street-level image data received from a different provider computing device associated with a different vehicle.

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

10 updating the configuration, by the server computer system and based on the street-level image data received by the server computer system, to cause the provider computing device to provide additional street-level image data related to the street-level image data; and

receiving, by the server computer system, the additional street-level image data from the provider computing device.

15 11. The computer-implemented method of claim 1, wherein controlling use of the provider computing device to provide street-level image data comprises at least one of:

causing the provider computing device to capture a street-level image with the camera;

causing the provider computing device to store a street-level image on a storage device;

and

20 causing the provider computing device to transmit the street-level image data via a networking device to the server computer system.

12. The computer-implemented method of claim 1, wherein the configuration includes at least one condition for the provider computing device to upload, to the server

25 computer system, street-level images captured with the camera.

13. The computer-implemented method of claim 12, wherein the condition comprises at least one of:

a specified type of network connection available for uploading the street-level images;

30 a specified network transfer capacity available to the provider computing device;

a specified amount of time since a previous upload of street-level images;

a specified battery level of the provider computing device; and

a specified memory capacity available to the provider computing device.

14. The computer-implemented method of claim 1, wherein the provider computing device provides the street-level image data to the server computer system in response to the provider computing device determining, based on sensor data accessed by the provider computing device and responsive to the configuration, that a condition is met to use the provider computing device to provide the street-level image data.

15. A system comprising:
at least one provider computing device, associated with a vehicle, with at least one hardware processor, wherein the provider computing device:
controls a camera positioned to capture street-level imagery outside of the vehicle; and
is one of a plurality of provider computing devices corresponding to a plurality of vehicles associated with an area;
a server computer system with at least one hardware processor that:
identifies the provider computing device;
determines, based at least in part on information received from the provider computing device and one or more additional provider computing devices within the plurality of provider computing devices, a configuration that controls use of the provider computing device to provide street-level image data captured by the camera to the server computer system;
sends the configuration to the provider computing device; and
receives, from the provider computing device, street-level image data captured by the provider computing device using the camera responsive to the configuration; and
wherein the provider computing device provides street-level image data to the server computer system responsive to the configuration sent by the server computer system to the provider computing device.

16. The system of claim 15, wherein the configuration controls use of the provider computing device to provide street-level image data based at least in part on sensor data received by the provider computing device.

17. The system of claim 16, wherein:
the sensor data indicates a geolocation of the provider computing device; and
the configuration specifies at least one geolocation associated with a rule for controlling use of the provider computing device to provide street-level image data.

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18. A non-transitory computer-readable medium comprising one or more computer-readable instructions that, when executed by at least one processor of a computing device, cause the computing device to:

identify, by a server computer system, a provider computing device for use in capturing
10 street-level imagery, wherein the provider computing device controls a camera positioned to capture street-level imagery outside a vehicle associated with the provider computing device, and wherein the provider computing device is one of a plurality of provider computing devices corresponding to a plurality of vehicles associated with an area;

determine, by the server computer system, based at least in part on information received
15 from the provider computing device and one or more additional provider computing devices within the plurality of provider computing devices, a configuration that controls use of the provider computing device to provide street-level image data captured by the camera to the server computer system;

send, by the server computer system, the configuration to the provider computing
20 device; and

receive, by the server computer system, street-level image data captured by the provider computing device using the camera responsive to the configuration.

19. The non-transitory computer-readable medium of claim 18, wherein the configuration controls use of the provider computing device to provide street-level image data
25 based at least in part on sensor data received by the provider computing device.

20. The non-transitory computer-readable medium of claim 19, wherein:
the sensor data indicates a geolocation of the provider computing device; and
the configuration specifies at least one geolocation associated with a rule for controlling
30 use of the provider computing device to provide street-level image data.