CLAIMS

1. A system comprising:

a vehicle comprising at least one of: a Light Detection and Ranging (LIDAR) sensor coupled to the vehicle or a radar sensor coupled to the vehicle; and

a controller, configured to execute instructions so as to carry out operations, the operations comprising:

receiving information indicative of an operating context of the vehicle, wherein the operating context comprises at least a turning scenario of the vehicle;

selecting, from a plurality of sensor power configurations, a desired sensor power configuration based at least on the turning scenario; and

causing at least one of: the at least one LIDAR sensor to emit light pulses according to the desired sensor power configuration or the at least one radar sensor to emit radar energy according to the desired sensor power configuration.

2. The system of claim 1, further comprising one or more sensors comprising at least one of: the at least one LIDAR sensor, the at least one radar sensor, a Global Positioning System (GPS), an Inertial Measurement Unit (IMU), a temperature sensor, a speed sensor, a camera, or a microphone, and wherein receiving the information indicative of the operating context of the vehicle comprises receiving at least a portion of the information from the one or more sensors.

3. The system of claim 1, wherein receiving the information indicative of the operating context of the vehicle comprises receiving at least a portion of the information from a map.

4. The system of claim 3, wherein the map comprises at least one of: street location information, street type information, street geometry information, location of stop signs, location of stop lights, location of stop lines, predicted traffic information, real-time traffic information, real-time obstacle information, previous camera information, previous LIDAR information, or previous radar information.

5. The system of claim 1, wherein receiving the information indicative of the operating context of the vehicle comprises receiving information indicative of at least one of: a

current time of day, a current sun position, local weather conditions, a current environmental temperature, or a current internal hardware temperature.

6. The system of claim 1, wherein the plurality of sensor power configurations comprise LIDAR operating parameters, wherein the LIDAR operating parameters comprise at least one of: enabled LIDAR unit(s), dynamic sector angle ranges, sector-based power per light pulse, light pulse rate, or LIDAR scan rate.

7. The system of claim 1, wherein the plurality of sensor power configurations comprise at least one of: radar operating parameters or radar signal processing parameters, wherein the radar operating parameters comprise at least one of: enabled radar unit(s), selected emitters per enabled radar unit, beamforming direction, energy per radar pulse, radar beam shape, radar pulse bandwidth, radar pulse duration, radar pulse repetition frequency, number of radar pulses per coherent processing interval, or wait time between adjacent coherent processing intervals.

8. The system of claim 1, wherein the information indicative of the operating context of the vehicle comprises at least one of: position data, speed data, future position, planned trajectory, LIDAR sensor data, or radar sensor data received from another vehicle, and wherein the desired sensor power configuration is further based on the information received from the other vehicle.

9. The system of claim 1, wherein the information indicative of the operating context of the vehicle comprises at least one of: traffic light state, traffic light schedule, sign state, traffic speed, construction status, LIDAR sensor data, or radar sensor data received from an infrastructure source.

10. The system of claim 9, wherein the desired sensor power configuration is further based on the information received from the infrastructure source.

11. A method comprising:

receiving information indicative of an operating context of a vehicle, wherein the operating context comprises at least a turning scenario of the vehicle, and wherein at least

one Light Detection and Ranging (LIDAR) sensor or at least one radar sensor are coupled to the vehicle;

selecting, from a plurality of sensor power configurations, a desired sensor power configuration based at least on the turning scenario; and

causing at least one of: the at least one LIDAR sensor to emit light pulses according to the desired sensor power configuration or the at least one radar sensor to emit radar energy according to the desired sensor power configuration.

12. The method of claim 11, wherein one or more sensors are associated with the vehicle, wherein the one or more sensors comprise at least one of: the at least one LIDAR sensor, the at least one radar sensor, a Global Positioning System (GPS), an Inertial Measurement Unit (IMU), a temperature sensor, a speed sensor, a camera, or a microphone, and wherein receiving the information indicative of the operating context of the vehicle comprises receiving at least a portion of the information from the one or more sensors.

13. The method of claim 11, wherein the plurality of sensor power configurations comprise LIDAR operating parameters, wherein the LIDAR operating parameters comprise at least one of: enabled LIDAR unit(s), dynamic sector angle ranges, sector-based power per light pulse, light pulse rate, or LIDAR scan rate.

14. The method of claim 11, wherein the plurality of sensor power configurations comprise radar operating parameters, wherein the radar operating parameters comprise at least one of: enabled radar unit(s), selected emitters per enabled radar unit, beamforming direction, energy per radar pulse, radar beam shape, radar pulse bandwidth, radar pulse duration, radar pulse repetition frequency, number of radar pulses per coherent processing interval, or wait time between adjacent coherent processing intervals.

15. The method of claim 11, wherein receiving information indicative of the operating context of the vehicle comprises receiving at least one of: traffic light state, traffic light schedule, sign state, traffic speed, construction status, LIDAR sensor data, or radar sensor data from an infrastructure source, wherein the desired sensor power configuration is further based on the information received from the infrastructure source.

16. The method of claim 11, wherein the operating context further comprises a traffic condition on the current roadway type, and wherein selecting the desired sensor power configuration comprises selecting the desired sensor power configuration based on the traffic condition.

17. The method of claim 11, wherein the operating context further comprises an indication of another vehicle on the roadway, and wherein selecting the desired sensor power configuration comprises selecting the desired sensor power configuration based on the other vehicle on the roadway.

18. The method of claim 11, wherein the operating context further comprises least a current roadway type of a roadway on which the vehicle is travelling, and wherein selecting the desired sensor power configuration comprises selecting the desired sensor power configuration based on the current roadway type.

19. The method of claim 11, wherein selecting the desired sensor power configuration comprises selecting the desired sensor power configuration based on elevation or aziumuthal angle ranges covered by one or more other sensor systems on the vehicle within the operating context.

20. The method of claim 11, wherein the turning scenario of the vehicle comprises at least one of a turn scenario, a protected turn scenario, or a merging scenario.