CLAIMS:

1. A computer-implemented method for determining an angular direction of a target comprising:

obtaining radar data comprising at least a diagonal difference signal from a radar system comprising an antenna with at least four subarrays; and

using the radar data comprising the diagonal difference signal in a trained artificial intelligence (AI) model to determine the angular direction of the target.

2. The method of claim **1,** wherein the radar system is installed on a mobile platform.

3. The method of claim **2,** wherein the antenna is configured to be installed on the mobile platform, and wherein the model is configured to determine the angular direction regardless of where the antenna is installed on the mobile platform.

4. The method of any one of the preceding claims, wherein the model is configured to determine the angular direction and compensate for deviation due to calibration inaccuracy over time or mobile platform electromagnetic disruption.

5. The method of any one of the preceding claims, further comprising:

executing a monopulse algorithm using the radar data; and

using at least an output of the AI model and an output of the monopulse algorithm in combination with at least one criterion to determine the angular direction.

6. The method of claim **5,** wherein the at least one criterion includes at least one environmental condition.

7. The method of claim **5** or **6,** wherein the at least one criterion includes at least one condition pertaining to a platform on which the radar system is installed.

8. The method of any one of the preceding claims, further comprising:

(a) obtaining multiple samples of radar data, each sample being obtained from illumination directed to respective first targets by the radar system, each first target being located at a known angular direction;

(b) maintaining the AI model by mapping the multiple samples to the known angular direction for each sample;

(c) repeatedly executing (a) and (b) over a period of time during which calibration of the antenna is prone to deviation from an initial calibration;

whereby using the AI model allows determination of the angular direction of the target, despite periodic deviation in calibration of the antenna.

9. The method of any one of the preceding claims further comprising:

determining that a second trained AI model should be used;

pre-processing the radar data to obtain a respective monopulse ratio; and

using the pre-processed radar data in a second trained AI model to determine the angular direction of the target.

10. The method of any one of the preceding claims, further comprising:

based on the radar data, selecting a trained AI model from a plurality of trained AI models; and

using the selected AI model to determine the angular direction of the target.

11. A computer-implemented method for training an artificial intelligence (AI) model configured to determine an angular direction of a target, the method comprising:

obtaining multiple samples of radar data, wherein the radar data comprises at least a diagonal difference signal, each sample being obtained from illumination

directed to respective first targets by a radar system comprising an antenna with at least four subarrays, each first target being located at a known angular direction; and

maintaining an AI model by mapping the multiple samples to the known angular direction for each sample, whereby the AI model allows determination of an unknown angular direction of a second target from received radar data comprising at least a diagonal difference signal, the received data being obtained from illumination directed to the second target by a second radar system comprising an antenna with at least four subarrays.

12. The method of claim **11**, wherein each sample is pre-processed to obtain a respective monopulse ratio, and the method further comprising:

maintaining a second AI model by mapping the respective monopulse ratios to the known angular direction for each sample, whereby the second AI model allows the determination of the unknown angular direction of the second target.

13. The method of claim **11** or **12**, wherein each sample is pre-processed to obtain a respective monopulse ratio, and maintaining the AI model by mapping the multiple pre-processed samples to the known angular direction for each sample, whereby the AI model allows determination of an unknown angular direction of a second target, from received radar data obtained from illumination directed to the second target by a second radar system comprising an antenna with at least four subarrays, where the received radar data is pre-processed to obtain a respective monopulse ratio.

14. A computerized system for determining an angular direction of a target comprising:

a radar system comprising an antenna with at least four subarrays, configured to receive radar data comprising at least a diagonal difference signal; and

a processing circuitry comprising at least one processer and computer memory, the processing circuitry being configured to use the radar data comprising the diagonal

difference signal in a trained artificial intelligence (AI) model to determine the angular direction of the target.

15. The system of claim **14** wherein the radar system is installed on a mobile platform.

16. The system of claim **15** the antenna is installed on the mobile platform, and wherein the model is configured to determine the angular direction regardless of where the antenna is installed on the mobile platform.

17. The system of any one of claims **14** to **16**, wherein the model is configured to determine the angular direction and compensate for deviation in calibration of the antenna.

18. The system of any one of claims **14** to **16**, wherein the processing circuitry being configured to execute a monopulse algorithm using the radar data and to use at least an output of the AI model and an output of the monopulse algorithm in combination with at least one criterion to determine the angular direction.

19. The system of claim **18,** wherein the at least one criterion includes at least one environmental condition.

20. The system of claim **18** or **19,** wherein the at least one criterion includes at least one condition pertaining to a platform on which the radar system is installed.

21. The system of any one of claims **14** to **20,** wherein the processing circuitry being configured to:

a) obtain multiple samples of radar data, each sample was obtained from illumination directed to respective first targets by the radar system, each first target being located at a known angular direction;
b) maintain the AI model by mapping the multiple samples to the known angular direction for each sample;

c) repeatedly execute (a) and (b) over a period of time during which calibration of the antenna is prone to deviation from an initial calibration;

whereby using the AI model allows determination of the angular direction of the target, despite periodic deviation in calibration of the antenna.

22. A computer system for determining an angular direction of a target, the system comprising a processing circuitry comprising at least one processer and computer memory, the processing circuitry being configured to execute the method as defined by any one of claims **1** to **10**.

23. A non-transitory computer readable storage medium tangibly embodying a program of instructions that, when executed by a computer, cause the computer to perform a method for determining an angular direction of a target as defined by any one of claims **1** to **10**.

24. A computer system for determining an angular direction of a target, the system comprising a processing circuitry comprising at least one processer and computer memory, the processing circuitry being configured to execute the method as defined by any one of claims **11** to **13.**

25. A non-transitory computer readable storage medium tangibly embodying a program of instructions that, when executed by a computer, cause the computer to perform a method for determining an angular direction of a target as defined by any one of claims **11 to 13**.