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(54) **RADAR SYSTEM AND RELATED METHOD
OF SCANNING REMOTE OBJECTS**

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(57) **ABSTRACT**

A radar system includes: a plurality of first receiving devices for generating a plurality of first digital signals according to a plurality of first incoming signals, respectively; and a plurality of second receiving devices for generating a plurality of second digital signals according to a plurality of second incoming signals, respectively. A processing device is arranged to perform a first beamforming operation to generate a plurality of first beamforming signals according to the plurality of first digital signals and a first gain matrix, and to perform a second beamforming operation to generate a plurality of second beamforming signals according to the plurality of second digital signals and a second gain matrix; and to determine an altitude angle of a first object and a second object, and to determine a first azimuth angle of the first object and a second azimuth angle of the second object.

