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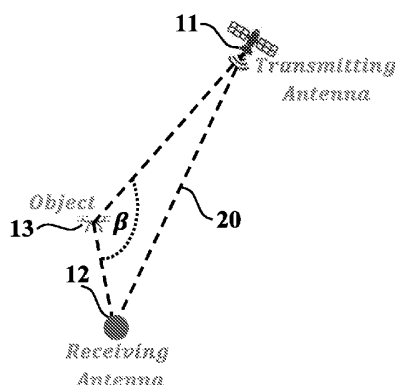


FIG. 1

(57) Abstract: There are provided systems and methods for passive sensing of unmanned aircrafts (UAs) using radio frequency (RF) signals transmitted by satellites and/or aerostats. One or more passive RF sensor units are employed, wherein each of the sensor units is configured to: produce one or more concurrent reception beams; receive RTSA resultant signals originating from one or more RTSAs, wherein an RTSA is one of a satellite and an aerostat, which transmits RF signals, and wherein an RTSA resultant signal is a signal transmitted by an RTSA after traversing a medium between the RTSA and the passive RF sensor unit; and process the received RTSA resultant signals to perform target detection based on the forward scatter effect. The systems and methods may also provide additional UA situational surveillance capabilities, e.g., target detection, target tracking, target classification, target identification, and prediction and/or detection of events associated with UA safety and/or security.

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