

ABSTRACT

A system is disclosed for acquiring, positioning and tracking of vehicles travelling in airspace, sea and land routes via a constellation of small satellites. The system includes: (a) a first detecting means for detecting a first signal from a vehicle travelling along a vehicle travel path; (b) a processing means for detecting an anomaly from the first signal and determining whether the anomaly occurs inside or outside a first radar mode coverage area; (c) a second detecting means for detecting a second signal from the vehicle under a first radar mode if the anomaly occurs inside the first radar mode coverage area; (d) a third detecting means for detecting a third signal from the vehicle under a second radar mode if the anomaly occurs outside the first radar mode coverage area; and (e) a fourth detecting means for (i) refining the second or third signal from the vehicle under a third radar mode, such that the first, second, third and fourth detecting means are sequentially activated to detect the first, second and third signals by each satellite in the constellation of small satellites.

[Figure 1A]