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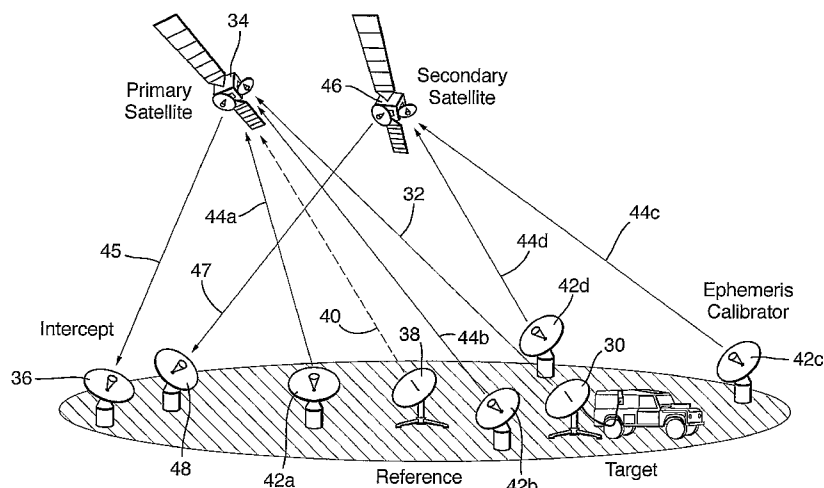
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[Continued on next page]

(54) Title: SATELLITE EPHEMERIS ERROR



(57) Abstract: A method of compensating for or correcting satellite ephemeris error involves measuring time difference of arrival (TDOA) and frequency difference of arrival (FDOA) for signal replicas received via two satellites (34, 46) from calibration transmitters (42a to 42d) at different geographical locations. An initial satellite ephemeris consisting of position and velocity vectors is used to calculate ephemeris changes yielding estimated TDOA and FDOA values providing a best fit to measured TDOA and FDOA values. This provides estimated changes required to compensate for or to correct errors in the initial satellite ephemeris. The method may be iterated to deal with large ephemeris changes: i.e. the changes obtained in one iteration may be used to correct ephemeris for use as a new initial ephemeris in a following iteration. The method may be used to correct ephemeris errors in one or both satellites, if so a greater number of calibration transmitters EphemCal 1 to EphemCal 10 may be used.

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