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### 7.3.1. Introduction (Continued)

#### (b) Acquisition

The acquisition phase is a transitory phase between search and track. The radar performs a restricted search for designated target(s) detected during the search phase. Tracking loops are initialized. Upon confirmation of the targets presence within the field-of-view, the radar enters a full track mode. Important characteristics during this phase include time allowable for acquisition, target position knowledge, target dynamics and strategy in the event of failure to acquire the target. Because of the transient nature of the acquisition phase, it is difficult to apply analytic techniques to its performance prediction.

#### (c) Track

The tracking phase is the ultimate result of a successful acquisition. Successive target position and rate measurements are used to obtain accurate estimates of the true target position and dynamics. Within this document, tracking will refer solely to closed loop (amplitude comparison monopulse) tracking whereby the radar boresight is slaved to the target position and internal tracking loops are slaved to the targets range and/or range rate. This ensures high quality tracking by maintaining a high data rate from the target. Alternatives to closed loop tracking such as Track-While-Scan (TWS) are applicable to situations where several targets need to be tracked simultaneously or when the fact that attention is being paid to some particular target is to be disguised. Neither situation is likely in the Paxisat scenario.

During the tracking phase, radars typically may measure any or all of the following target parameters:

- (a) Elevation angle
- (b) Azimuth angle
- (c) Range