This report describes a project by The Ohio State University ElectroScience Laboratory to determine the feasibility of using a radar system to find an unmodified golf ball in the rough grassy area of a golf course. Ultra wide band radar signals covering the band from 2-18 GHz were used to determine the radar signature of the golf ball. These signatures were cross correlated with data from various types of golf course regions with and without golf balls to determine the statistical probability of detection.

The final conclusion is that the radar signature of a golf ball is unique but has a low number of degrees of freedom. This means that the unique golf ball signature has less than 5 descriptive response terms for identification. Unfortunately, in a rough grassy region there are hundreds of response signatures, and the probability of false correlations is very high. This means that the grassy regions yield a very large number of false detections in any scheme used to determine the presence of a golf ball.

Finally, alternative golf ball tracking concepts such as tracking the ball in the air and following its flight characteristics to determine an estimate of its final location are explored.