Abbreviations::
scout sends harvesting position (sshp)
check proximity sensors (cps)
reach a decent harvesting position (dhp)
receive ping message (rPm)
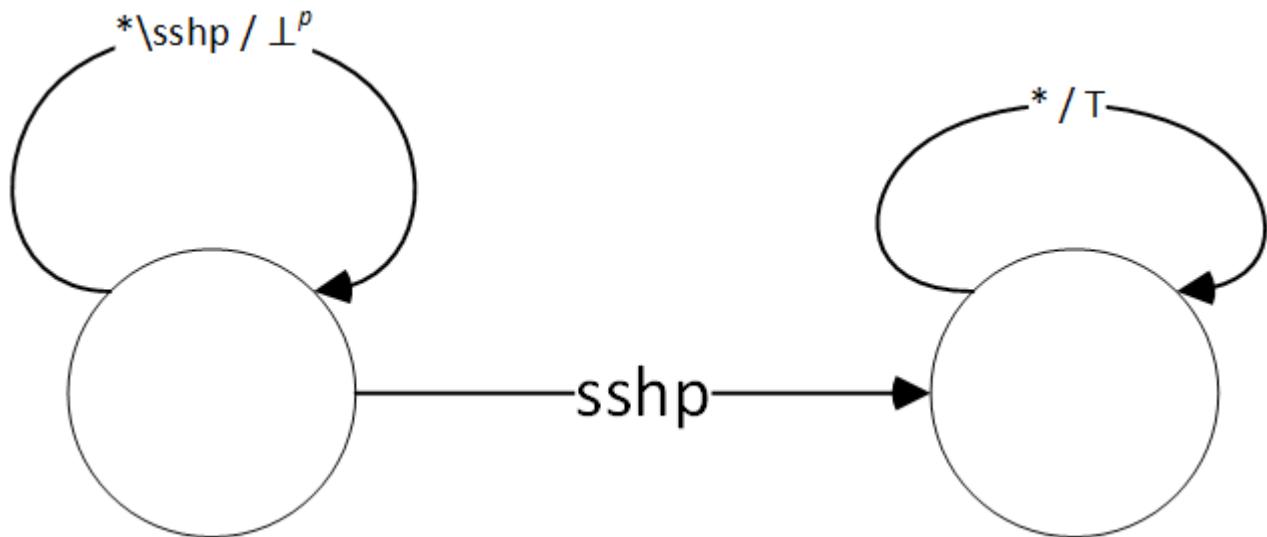ignore ping message (iPm)
receive data (rd)
copy data receieved (cdr)

A. The Scout should at some point in time send a harvesting
position to the Collector.
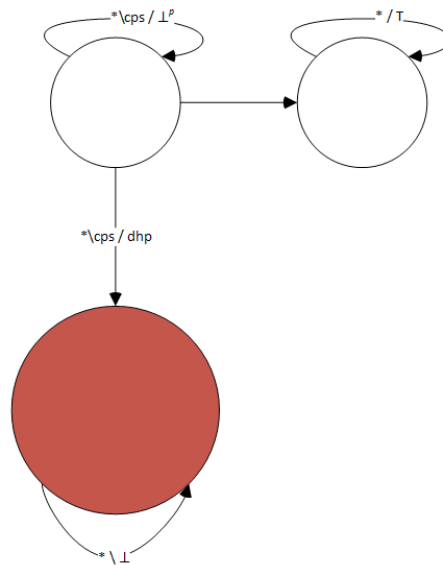
F(sshp)   (sshp – scout sends harvesting position)

co-safety property, monitorable.

B. The Collector should always check its proximity sensors
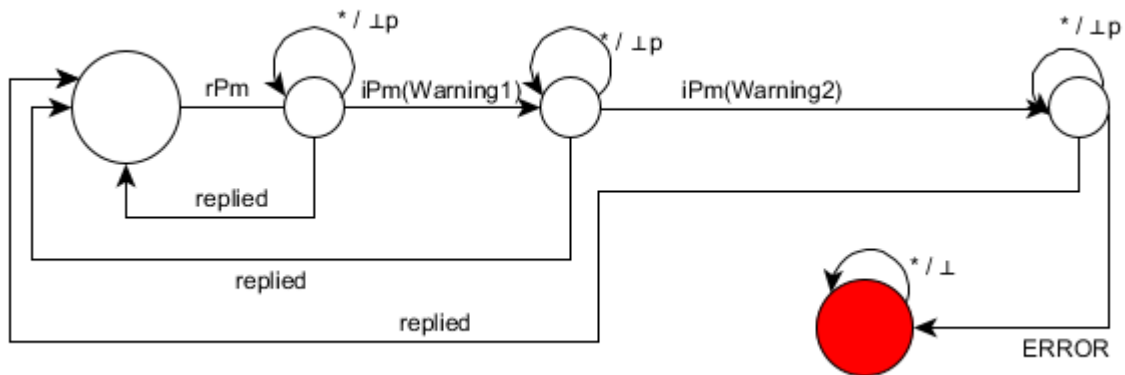unless it is at a decent harvesting position.

G(cps V dhp)

safety property, monitorable.

C. A robot should never ignore three consecutive PING messages.

$$G(\neg F(iPm \rightarrow (XiPm \wedge XxiPm)))$$

safety property, monitorable.

D: we cannot assign an LTL to property D since there are time conditions, instead we can build a TLTL for it.

D: $G(rd \rightarrow Xcdr) \wedge G(\lhd eb \in [0, 500])$