

Novel binary search algorithm for fast tag detection in robust and secure RFID systems

Abstract:

Novel binary search algorithm for fast tag detection (BSF1) and (BSF2) in robust and secure RFID systems is presented in this paper. These algorithms introduce fast tag detection with the new method of inquiry. Tags were grouped in two groups and tag collisions of each group were solved by implementing dynamic searching and backtracking procedure. By grouping the tags, time for solving collision was reduced. It performed fast detection in a robust situation, a group of tags with all possibilities of ID arrangements. Tags attached to the products of different manufacturers may considerably have robust ID. For the security of RFID system, the number of bit (n) will be increased to provide allocation of 2^n unique ID. The increasing number of bit and the uniqueness of ID will increase the security of the system from counterfeiting. However it will also increase time identification, but our algorithms will provide fast detection in the situation of high security.