Efficient Unknown Tag Detection in Large-Scale RFID Systems With Unreliable Channels

ABSTRACT

Radio Frequency Identification (RFID) technology has witnessed an unprecedented growth in practical applications. It has several distinct advantages. First, RFID tags are so small that they can be embedded in almost everything to give a unique ID. Second, the low price of tags makes large-scale use possible for almost anything that costs more than $1. Third, tags are able to be read wirelessly, from a few inches to several feet. Fourth, it supports parallel processing that can operate thousands of tags at a time. In contrast, other methods, e.g., barcode, can only deal with objects sequentially.

EXISTING SYSTEM

In Existing System, One of the most important applications of radio frequency identification (RFID) technology is to detect unknown tags brought by new tagged items, misplacement, or counterfeit tags. While unknown tag identification is able to pinpoint all the unknown tags, probabilistic unknown tag detection is preferred in large-scale RFID systems that need to be frequently checked up, e.g., real-time inventory monitoring. Nevertheless, most of the previous solutions are neither efficient nor reliable. The communication efficiency of former schemes is not well optimized due to the transmission of unhelpful data. Furthermore, they do not consider characteristics of unreliable wireless channels in RFID systems.

DIS ADVANTAGES

- It cannot provide tradeoffs between time efficiency and result accuracy.
- There is no exposure of identification information involved.

PROPOSED SYSTEM

In Proposed System, fast and reliable method for probabilistic unknown tag detection, white paper (WP) protocol. The key novelty of WP is to build a new data structure of composite message that consists of all the informative data from several independent detection synopses; thus it excludes useless data from communication. Furthermore, we employ packet loss

differentiation and adaptive channel hopping techniques to combat unreliable backscatter channels. We implement a prototype system using USRP software-defined radio and WISP tags to show the feasibility of this design.We also conduct extensive simulations and comparisons to show that WP outperforms previous methods. Compared with the state-of the- art protocols, WP achieves more than $2\times$ performance gain in terms of time-efficiency when all the channels are assumed free of errors and the number of tags is 10000, and achieves up to $12\times$ success probability gain when the burstiness is more than 80%.

ADVANTAGES

- It has fast and reliable method for probabilistic unknown tag detection.
- Detecting unknown tags in large-scale RFID systems.

SYSTEM REQUIREMENTS

H/W System Configuration:-

Processor	-	Pentium –III
RAM	-	256 MB (min)
Hard Disk	-	20 GB
Key Board	-	Standard Windows Keyboard
Mouse	-	Two or Three Button Mouse
Monitor	-	SVGA

S/W System Configuration:-

Operating System	:	Windows95/98/2000/XP
Application Server	:	Tomcat5.0/6.X
Front End	:	HTML, Jsp
Scripts	:	JavaScript.
Server side Script	:	Java Server Pages.

Database   :   MySQL 5.0

Database Connectivity   :   JDBC