# A Grouping-Based Dynamic Framed Slotted ALOHA Anti-Collision Method with Fine Groups in RFID Systems

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## Abstract

Slotted ALOHA anti-collision methods have two features. The first feature is that we get the optimal throughput of slotted ALOHA increased if the number of tags and the number of slots are equal. The second feature is that if the number of tags is small and the frame size is equal to the number of tags, the throughput increases as the number of tags decreases. However, most researchers have made little effort to explore the second feature to increase the throughputs of Slotted ALOHA anti-collision methods. In this paper we propose a grouping based dynamic framed slotted ALOHA anti-collision method with fine groups (GB-DFSA) to fully utilize the two features to perform tag identification. We compare the throughput of GB-DFSA with those of the other two methods - EDFSA with partition and DFSA. The results show that the throughput of GB-DFSA is 40% which is higher than EDFSA (38%) with partition and DFSA (31%).