

11. TIME STAMP BASED DISTANCE BOUNDING PROTOCOL FOR AEROSPACE SYSTEM

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RFID (Radio Frequency Identification) systems are vulnerable to relay attacks like mafia fraud, distance fraud and terrorist fraud. The distance bounding protocol is designed as a countermeasure against these attacks. The protocols make sure that the tags are in a distant area by measuring the round-trip delays during the rapid challenge response exchange. Distance Bounding protocols are cryptographic protocols which enable verifier to prove the upper bound on the physical distance to the prover. They are based on timing the delay between the sending out a challenge bit and receiving back the corresponding response bits. A timing based response followed by consecutive timing measurement provides more optimistic approach in authenticating the prover.

Index Terms—RFID, Mafia fraud, Distance fraud, Terrorist fraud, Distance Bounding protocol.

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