

METHOD FOR ROBUST COMMUNICATION IN RFID

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The developed system Ultra Wide Band – RFID allows for the **precise location and tracking** of tagged objects, at low cost. It is made by a reader that interrogates multiple tags (passive or semi-passive) thus determining their distance with centimeter-level accuracy.

Protection: Italy, USA

Inventors: Davide Dardari

INVENTION

The system Ultra Wide Band (UWB) - RFID is made by a reader that interrogates multiple tags (passive or semi-passive) in the vicinity by transmitting a query signal. The tags respond to reader via backscatter modulation that is to vary the load as a function of the antenna that the tag sends the reader (typically the identifier). By a proper analysis of the **UWB backscattered signal**, the reader is able to estimate with **centimeter-level accuracy** the distance of tags (ranging). If more readers are present, tags can be localized by combining all ranging estimates.

ADVANTAGES

- Resistance to interference;
- Centimeter-level ranging;
- Excellent penetration through walls;
- High spatial resolution and temporal;
- High number of tags manageable simultaneously.

APPLICATIONS

- RFID systems;
- Precise localization and tracking of the objects.

CONTACTS

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