Abstract

RFID technology with the special ability of multiple object identification without the constraint of line-of-sight provides a perfect way for real time data collection and object identification. The healthcare industry involves critical activities where small mistakes could cause huge loss of life and incur massive financial losses. The data captured by RFID readers are usually of low quality and may contain many anomalies. Data quality has become increasingly important to
many organizations. In order to provide reliable data to RFID application it is necessary to clean the collected data. SMURF is a declarative and adaptive smoothing cleaning technique for unreliable RFID data. However it does not work well when tag moves rapidly in and out of reader’s communication range. The errors need to be cleansed in an effective manner before they are subjected to warehousing. Factors such as inter tag distance, tag-antenna distance, number of tags in the read range of antenna, reader communication range, velocity of tag movement affect the data cleaning result. Our proposed algorithm considers these factors and also the missing tag information, tags that are mistakenly read as present dynamically in determination of the size of slide window. Thus with the aid of the planned data cleaning technique we can bring down the health care costs, optimize business processes, streamline patient identification processes and improve patient safety.

Reference

- Bettina Fazzinga, Sergio Flesca, Elio Masciari and Filippo Furfaro, "Efficient and effective RFID data warehousing", In proceedings of the 2009 International Database Engineering & Applications Symposium,pp. 251-258 , 2009

Index Terms

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- cleaning methods

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