Best Practices
Best Practices

In this Section we Identify and describe installation dependencies of RFID applications that may influence/hinder their operations and lie beyond the functionality of the middleware. Moreover a Deployment best practices presentation can be found here.

RFID Deployment

Issues that could severely influence the performance of the overall system are the following: Tag Selection

Three important factors has been recognized that should be addressed:

- The first one is the material from which they are built. For example coper offers a higher conductivity than aluminium. As a result, tags built from coper have a longer reading range.
- The second one is the impendance matching between the chip and the antenna. Usually chips and antennas manufactured from the same vendor are better matched, resulting in better overall quality.
- The third one is the position of tags on items or containers. It is very important to assure that the attached tags are aligned with the near by antennas, something that yields better electromagnetic reflections and thus more accurate readings.

Antenna Position

Three important factors has been recognized that should be addressed:

- The angle of the antenna, while mounting. The angle should be chosen in such a way that tags remain as much time as possible in the antenna field of view.
- The field of view of antennas connected to different readers should have no intersection.
- The antenna beams should be known so as to create intense, wellcontained read zones, with little spillover beyond exterior faces.

Cable Selection

Cables should have:

- Minimum attenuation
- Short length
- No breakings

Reader Configuration

The reader should be configured as follows:

- Inventory should start and stop with the use of general purpose inputs and outputs, as this type of operation is well suited in industrial environments.
- Antenna inventory should not be stopped if the antenna field is not stable, i.e., new tags are being read.
- The highest transmit power is not always beneficial. Due to RF interference form other devices, it is possible that lowering the transmit power may yield better performance.

Printer Location

The printer should be placed away from dock doors, so as to be impossible for tags generated by RFID printers to be immediately read by readers in dock doors. Firstly because the performance of readers degrades and secondly because those particular tags, depending on the middleware configuration, may not participate in any other process. RF Interference

The interference from surrounding devices should be measured by elecromagnetic field meters, in order to identify interference problems. Multipath Fading

Reflective surfaces in the surounding environment should be recognized before antenna installation. Electromagnetic waves from antennas should not propagate towards reflective surfaces, because this may result into stray tags.

Best Practices (en)
Creator: xwiki:XWiki.nkef Date: 2011/06/01 17:06
Last Author: xwiki:XWiki.nkef Date: 2011/06/13 22:30