

# The importance of the physical identification of maintenance equipment/assets with tags

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The primary goal of maintenance management systems – generally known as “CMMS” (Computerized Maintenance Management Systems) is to ensure that equipment/assets defined by management as maintenance objects function at their best, within the operating conditions framework they were designed for, at the lowest possible cost and extending their useful life cycle for as long as possible. To help achieve this all procedures covered by maintenance management systems – maintenance requests, corrective maintenances, systematic maintenances, downtime, equipment operating records or reading of relevant parameters – always relate to equipment that may in particular situations be grouped into functional systems (equipment that as a whole contribute, to a specific function).

The physical tagging of equipment is essential to the identification of maintenance equipment. The existence of a physical identification on equipment, or “tag” as it is commonly called, resorting to the use of the new tag systems available on the market, facilitates the performance of a number of tasks involved in the development of the maintenance management procedure:



- Opening a document online (e.g. Google docs) with detailed information about the equipment
- Breakdown reporting (maintenance request) from end-user customer
- Carrying out preventive management tasks by maintenance technicians
- Viewing and consulting maintenance history as well as ongoing and planned work
- Directly recording a past incident or scheduling a future intervention

It also conveys both to employees and to the outside an image of efficiency and good company organization.

There are multiple ways and procedures for the physical identification of equipment. The following are the best known and most widely accepted in the market as applicable for identification of maintenance objects:

## Barcode



It is the simplest and oldest-known equipment identification process. There are multiple free tools to perform barcode generation for free. In spite of being a low-cost solution its use is confined to simple, short texts. Barcodes are readable by any mobile scanning device or by using bar code readers available in all manner of formats and at a variety of prices.

## QR Code (Quick Responsive Code)



It is a relatively recent system, quite similar to the barcode. However, thanks to the use of a 2D technology, it is capable of holding more complex information, such as texts, web pages, SMS or full identification data about a person. QR Codes are readable by any mobile device with a dedicated application or in a few more recent smartphones the camera itself may do the scanning

## NFC (*Near field communication*)



It is the most flexible and secure process, despite being the most complex and the one requiring highest investment. NFC tags have a wide range of applications and they are not so easily clonable. They come in different types, with lower or higher degree of complexity and price level, all allowing direct connection to an Android smartphone, when it comes in close proximity of the tag.

Features/Solution	Barcode	QR Code	NFC / RFID
Simple and low-cost	✓	✓	X
Can only carry/contain/hold simple information	✓	✓	✓
Can contain complex, long information	X	✓	✓
Link to a web address (URL)	X	✓	✓
Anti-cloning protected	X	X	✓
Direct access to Mobile App	X	✓	✓

*Summary of the key-features of each tag system*

Any of the three solutions has its own advantages and disadvantages, depending on your chosen application. Barcodes are ideal for simple tagging designed to store one single information item and they are largely used in warehouse inventory or asset management. Qr codes are used over a wider range of applications and their usage has vastly expanded in recent years. Being directly readable by any smartphone they are largely used as a direct connection to websites or web applications. NFC labelling is the most complex system because it involves some degree of technology; however, the cost of these tags is getting lower and their set up and usage is becoming increasingly easy.

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