



## Zebra® mobile printers optimise maintenance at the San Gerardo Hospital in Monza

Phillips Medical Systems is a worldwide leader in healthcare solutions. Its product line includes best-in-class X-ray, ultrasound, magnetic resonance imaging (MRI), patient monitoring, information management and resuscitation products. The company is a leader in digital technology, incorporating sense and simplicity into its full range of medical products. Design is a key focus, ensuring ease of use, improved patient comfort and a straightforward upgrade path. It also provides a full range of customer services adapted to individual customer needs.

### Company requirements

Phillips Medical Systems has been one of the main machinery suppliers to the San Gerardo Hospital in Monza, since 1985. It also provides essential maintenance services across a wide range of 80 electronic diagnostic units. In Monza, as in every hospital with its own clinical electronic machinery, there is a need to keep this fleet of expensive machines up and running and well maintained. It is also important to ensure that accurate records of servicing and repairs carried out on each facility are kept centrally for easy access.

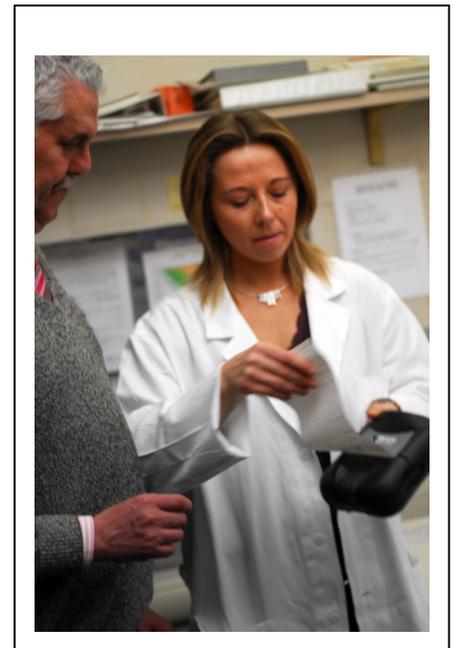
With the old system, technicians used to leave the job report containing all the information about the maintenance or repair, after both regular and emergency checks at the hospital. It could then take up to six weeks for this documentation to arrive at the clinical engineering service centre. Sometimes documents were lost leaving the hospital without any information about the job. In order to better organise and execute the process, the San Gerardo Hospital decided to introduce a new set of tools to provide the hospital with a clear set of records and a visible audit trail for all documentation.

### The Solution

Built around the Zebra Technologies RW 420 mobile printer, the system incorporates a PDA and the "PMS@yourside" website, built on an Oracle database. The website is used for job management and activity planning. It is used by both the PMS technicians and the clients at the hospital and is updated in real-time.

The "PMS@yourside" website ensures that requests are received and processed in a third of the time they used to be. Information about any damage, the exact specification of the machine and details of its location within the hospital are emailed to the PMS customer care team who forward it to the first available technician direct to the PDA over the GPRS network. The system makes it easier to trace the allocation and progress of individual jobs and to record details as they happen. These details are then made available to the clinical engineering team at the hospital through the client section of the site.

Once the technician has assessed the situation and, where possible, carried out any necessary repairs, a complete record of the incident is recorded digitally on the PDA. Both the Philips technician and the client sign the document on the PDA, the receipt is then double printed using the Zebra RW 420 series printer.



### Solution Technology

Zebra® RW 420™ series mobile printer

PDA

Zebra® 5 year archivable receipt media



The report for the job is also made immediately available on the website and archived at the end of each day. The hospital keeps a complete printed record as well as having online access to the information in different formats. In addition, the double format documentation removes the need to scan the printed copy. This alone saves PMS approximately 800 hours of work each year. It is therefore able to deal with more jobs and save money.

## Project Phases

The project started in January 2007, in response to the hospital's need for a clearer audit trail that would meet internal requirements. Armed with clear guidelines from the hospital, PMS started selecting devices and rolling-out the "PMS@yourside" website. The Zebra RW 420 series mobile printer was chosen for its portability, ruggedness, ease of use, print speed, and battery life. At this stage Zebra's business partner were able to demonstrate that the chosen hardware fully met PMS's expectations.

The "PMS@yourside" website itself includes a number of different sections: "My machines" where individual machine's technical details are available; "Open calls", which presents information about the date the call has been opened, the date of the technician's visit and the option to add reminders; "Scheduled visits" detailing all the planned repair and maintenance visits; "Machines diary" providing a record of all the visits that have occurred for an individual machine.

The new system has been introduced gradually. A selection of key users was prioritised to ensure the level of service on key diagnostic machinery was improved first. As the project rolled out to these early adopters, they were constantly updated with the latest improvements.

## Results

Thanks to the new solution, maintenance intervention planning has become better organised with documentation now available in real-time. Using the PDA and Zebra RW 420 series mobile printer, a full job report is available as soon as it is completed. This is then archived at the end of each day to ensure the hospital's data recording requirements are met, simplifying the internal audit process.

The new solution saves 200 hours of project preparation and allocation time, and 800 hours of document collection and delivery time each year, completely removing the need for scanning backlogs of paperwork.

The project is now running across the San Gerardo Hospital in Monza. The mobile system has increased intervention visibility, optimised job handling and saved the organisation 45,000 Euro a year. The hospital also has clear visibility of where and when maintenance will be carried out through the "PMS@yourside" website and technicians are able to respond faster in an emergency.

## Future Implementations

Future improvements to the system will focus on the range and depth of reports that the system will make available to the hospital and PMS. Such reports may include scheduled maintenance reports; these are currently still hand-written and scanned. These will be processed through electronic checklists available on the PDA. There is also a plan to transition from a static data system to a dynamic one, using RFID tags to enable monitoring of the machinery anywhere within the hospital.

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