

Bar Code Drives T&A System

Mercedes-Benz manufacturing site calls on existing phone network to link new personnel tracking system.

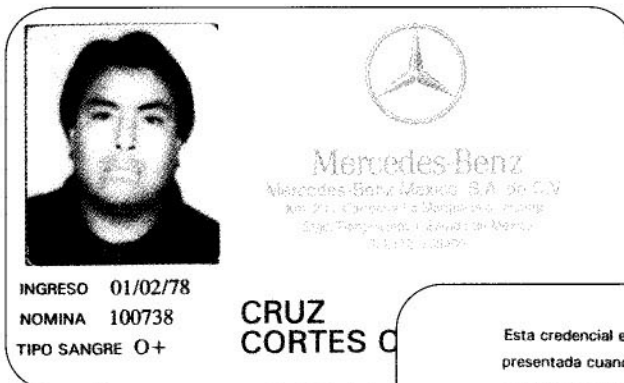
John Vacca

When Mercedes-Benz dreams, it is of ever more stylish, advanced, and responsible modes of transport. The luxury automaker wants to focus on developments in personal mobility that transcend borders and cultures to improve the lives of individuals in every corner of the globe.

Mercedes-Benz long ago abandoned the notion that all the best ideas originate at home. Instead the company embarked on global expansion and the search for ideas and intellect. The success of this approach can be assessed by the fact that today, Mercedes-Benz vehicles are produced in dozens of plants strategically located around the world.

An excellent example of this global vision can be observed at Mercedes-Benz's Santiago Tianguistenco plant in Mexico, which employs about 1500 workers and manufactures heavy trucks and the company's 220, 320, and 280 car models.

Mercedes-Benz was one of the first luxury car manufacturers to install



The Mercedes-Benz ID badges include the employee's photograph and a system-generated identity number.

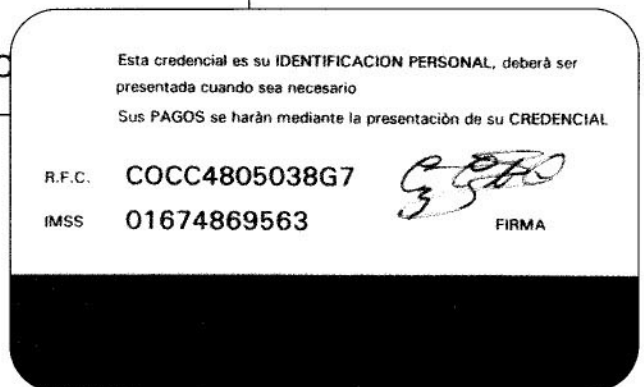
automated data collection technology, in the form of a Human Factor COA time and attendance (T&A) system.

The magnetic stripe-based T&A system was integrated with 13 Linx terminals throughout the plant. A cost analysis showed that installing RS-232 and RS-485 cables in the plant would be even more expensive than the rest of the components of the T&A system.

So Código Empresarial, S.A. de C.V., the Mexico City-based system integrator

that developed the Human Factor COA system, proposed using the telephone cable as well as the switchboard that Mercedes-Benz already had installed.

Everything could be run through the Remote Site Control capacity offered by Monitor, the Human



The Human Factor T&A system updates employee information to every data collection terminal in the plant.

Factor subsystem that controls communications with Linx networks.

Initially, Mercedes-Benz contacted Codem in March 1993. At that time, the Santiago Tianguistenco plant was still using the traditional time card method. The problem consisted of trying to elim-

inate the time-consuming and error-prone process associated with the old mechanical card punching system. The company wanted to replace the old method by January 1994.

After some successful tests by Codem of the telephone cable/switchboard alternative, a solution was found that satisfied the operative, the administrative, and the economic needs of Mercedes-Benz: integrating the 13 Linx data terminals (five Linx IV-1 Master terminals and eight Linx II-1 Node terminals) through the company's telephone switchboard.

The result was five different Linx networks; the master terminal of each network is connected to the host through a Motorola FasTalk 2400-bps modem. Human Factor's Monitor subsystem controls an RS-232 port of the HP-9000 computer (under HP-UX), which has another 2400-bps modem.

The Monitor dials the extension for Site No. 1, receives the information on that network, and then transmits data (for example, to update all employee records, shift modifications, and vacation periods). When the data flow is finished, Monitor hangs up and dials the extension for Site No. 2 to execute the same activities.

The data collection terminals also validate employee or badge existence, monitor overtime, and assign employees to a specific terminal. Employees use their badges to check in and out during shift changes at one of the 13 data terminals. The Human Factor system is capable of generating 50 different reports, including Historical "Punch-in," "Late-in," "Absence," "Extra-time," and "Shift Coverage" Reports.

Number, Please

The badges are of a standard credit card-size variety. Codem provides pre-printed Mercedes-Benz logo badges; the automaker adds photo and variable information using a Hewlett-Packard laser printer with Label Matrix software from StrandWare. Blank bar code badges are obtained through Identatronics.

The Code 39 badges carry a unique number that is assigned by the Human Factor system. The scanners are standard internal Linx bar code scanners. If an employee loses the badge, it is replaced with a different badge number.

The T&A system is integrated through the switchboard.

In certain situations, the manager or supervisor uses the keypad to authorize overtime and check employees in and out if they've forgotten their badge. The keypad is also used to capture vacations, incapacities, permissions, or any other reason for absence.

When a new employee is added to the payroll, that individual's personnel information is added to the payroll system. After all the information is validated and verified, it is imported to the Human Factor system, which completes information such as shift permissions. The system then generates the information to be printed on the badge and assigns a unique number for that employee. Finally, the T&A system updates the new employee information to every Linx terminal in the plant.

Bar code information can be deleted from the database at the central system. The HP-9000/Linx Communication System automatically updates every terminal after a termination, so that they can locally deny any future transactions. Deleted badges are not reassigned because they are personalized with an identification number.

Payroll Support an Added Benefit

Codem has also provided Mercedes-Benz with custom software and a modem to export payroll data information to headquarters. If any problems come up, Codem provides telesupport services on an ongoing basis.

Payroll is managed at the headquarters. Mercedes-Benz has two payroll periods: One for plant line workers, which is submitted weekly, and one for office employees, which is submitted two times a month. All of the information is used to generate a weekly payroll. Preparing the payroll now takes 3 hours; before the Human Factor system was installed, the process took 2 days.

The Human Factor COA T&A system has brought many other benefits to

Mercedes-Benz and its line management. The instant access to time and attendance information permits better management of human resources and results in more accurate decisions on labor coverage.

Mercedes-Benz officials can now do precise job costing. And labor paid for standard hours has been reduced by 15 percent, and by 20 percent for overtime hours. Company officials are counting on the real-time decision support system to lead them to more accurate, flexible, and exacting levels of performance. □

John Vacca is a freelance information technology and air and space contract writer based in Houston, Texas.

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PROJECT PROFILE

Mercedes-Benz
Santiago Tianguistenco, Mexico
Luxury Car Manufacturer

Objective:

Real-time payroll information; reduction in paid hours and payroll preparation time

Resources:

Código Empresarial, S.A. de C.V.
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