Press information

On the path to the Smart City: Ferrovial upgrading Madrid's street cleaning service

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Smart Cities – this concept describes the vision of an intelligent, networked city that uses new technologies to develop new pathways to modernize and redesign the city and its processes, making them evermore efficient and transparent. The initiative has relevance to the topics of mobility, energy supply, waste disposal and environmental awareness. Many Spanish cities, amongst them Madrid, are pursuing the Smart City concept. With its more than three million inhabitants, the metropolis is striving to use new technologies to make the city more environmentally friendly, more energy efficient and cleaner, and more generally to raise overall quality of life in the city. One component of this effort is the city's street cleaning service. And it was in this area that MOBA technology was found to be the right solution.

With its narrow streets, tall buildings and very high traffic volumes, Madrid's city centre does not present an easy streetscape for the task of city cleaning. Indeed it is in precisely such large cities as Madrid that the faster, more efficient and well-planned deployment of street cleaning machines is needed to achieve the desired result – namely clean city streets – at the same time as avoiding straining the patience of street users too severely.

Optimized vehicle deployment thanks to GPS and good communication

That is why Ferrovial, the company entrusted by the city to carry out its street cleaning, is committed to the very latest technologies, as demanded by the Smart City concept. Ferrovial has equipped more than 350 vehicles with MOBA Mobile Automation AG technologies. Using this high-tech equipment

each individual vehicle can be located at all times using GPS. This allows vehicles to be deployed flexibly, reducing down time and avoiding long detours, thus increasing their productivity. This makes fleet management substantially easier and more efficient, while networking allows the smooth running of the city's street cleaning. In addition, an audio system allows the dispatch centre to communicate directly with each individual driver. "This saves us a lot of money that we would otherwise have had to put into an ultra-shortwave radio system. And with it we no longer have to provide a telephone for each driver: and we can be sure it is used only for work-related telephone conversations, as users can dial only pre-set numbers", explains Carlos Martín, Ferrovial's Director of Technology.

About 50 of the vehicles have been equipped with an additional communication computer, which allows its users to record incidents during their deployment. When, for example, a street cannot be cleaned because it is blocked off by parked vehicles, the computer sends the data in real time to the Internet-based MAWIS U2.0 fleet management software located at Ferrovial's operations centre. These data can be read by the relevant person in the office at any time, who can thus respond quickly and flexibly to such situations as vehicle breakdowns or blocked streets, adjusting the deployment plan for his or her vehicles appropriately.

Sensor data as proof of work

In addition, the MOBA system records the incoming signals from the sensors which relate the work situation of the relevant machine, showing whether the machine is simply travelling, is sweeping the street, or cleaning the road surface using water. "For us these data provide us with a proof of work completed. Because the contracts we have with the city of Madrid set out our duties very precisely. The data allow us to prove that we are completing our tasks according to contract", explains Carlos

Martín. Because our business can face severe financial penalties if we fail to fulfil our contractual duties. Ferrovial does not just obtain proofs of work completion from the system, it also uses it to continuously optimize how it deploys its machines. Ferrovial can use this data to evaluate and improve the routes and deployment plan of each individual machine. It also allows us to substantially improve and simplify overall fleet management, as each machine can be deployed far more efficiently. "We're more than happy with the technology. We deploy our machines all over the city and our ability to record their positions and to communicate with them works seamlessly everywhere, whether they're working in narrow streets surrounded by high buildings or on the city's broad avenues", says Carlos Martín. Ferrovial's MAWIS U2.0 software, in which all data are saved and managed, is connected up with the Madrid Smart City Platform to allow the municipality to use the data too. That is how the system actively contributes to coming another step closer to the goal of making Madrid a Smart City.

About MOBA

With over 40 years of experience, MOBA has grown to become a world leader in developing and manufacturing mobile electronics, identification systems and weighing technology for construction machinery and waste disposal vehicles. MOBA is also a successful system specialist and OEM supplier in the field of mobile automation. With its headquarters in Limburg, Germany, and branch offices in Dresden, Langenlonsheim and Merenberg, MOBA has eleven subsidiaries and company stakes worldwide that together with an international dealer network, ensures that the company is represented in the major global growth markets. Over the last decade the company’s turnover increased from 26 million euros in 2004 to more than 54 million euros in 2014 with employee numbers growing from 210 in 2004 to 482 in 2014.

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The digital map shows, which vehicle works on which tour – and which tasks are being performed

MOBA equipped more than 350 vehicles for Ferrovial

All data is transferred via the CG-1 and also additional information can be added

The audiosystem allows drivers and dispatch centre to communicate with each other

Photos: MOBA

Further information and downloads of press texts and images

available at www.moba-automation.com.

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