The software modules for increased parking success.

License Plate Recognition (LPR)
LPR – the License Plate Recognition System.
Outstanding features: secure, efficient, convenient.

Automated license plate recognition is an area of technology with remarkable potential. With its latest system generation of parking management software entervo.com 2, Scheidt & Bachmann offers a License Plate Recognition (LPR) System as a fully integrated add-on module. This system and its functionalities have been developed by Scheidt & Bachmann especially for the parking industry, making a virtually “barrier-free” parking facility an essentially feasible prospect.

Developed, tried and tested
The entervo LPR system has already demonstrated its practical benefits in the context of numerous international projects, always fully meeting the various technical specifications and legal demands. Technologically speaking it is an option – from a strategic point of view it is a must, since it offers a wealth of worthwhile benefits which increase efficiency on a lasting basis. Due to its extensive range of additional functions and its high degree of integration, entervo LPR enables highly professional parking management.

The basic technical principle of LPR
At entrances, exits and if necessary on transit passages, infrared cameras take photographs of all vehicles passing through. The software automatically records those sections of the image files which contain license plate information; this is then analysed by an OCR engine and added to the relevant transaction data set.

entervo LPR offers more
As an international provider of integrated parking solutions, Scheidt & Bachmann has developed an OCR engine for entervo which is not only able to analyse license plates from the operator’s own country but which can apply this function to the number plates of virtually every country in the world. This makes the entervo LPR system predestined for use in Europe with its high volume of cross-border traffic. The image files, together with the license plate information which has been filtered out of them, are stored in the central database of the entervo system along with the remaining ticket data (including ID, entrance time and tariff). This means that the ticket data and license plate number are inextricably linked with each other and are available for routine checks and analyses as required.

entervo LPR – a worthwhile tool…

… for significant improvements in securing income:
• Unreadable tickets

With LPR, unreadable tickets no longer result in time-consuming procedures. The previously recorded license plate number is simply retrieved so as to determine the exact time of entrance and the corresponding tariff. This means there is no more need for unpleasant disputes with customers or having to let out customers for free on a goodwill basis.
• Lost tickets
Here the parking tariff is determined in exactly the same way as with an unreadable ticket. The fact that the customer can be shown evidence for the exact tariff calculation prevents operators having to charge high standard rates for every lost ticket on principle – something which is especially frustrating for honest customers. In order to pre-empt any potential fraudulent intent, the customer’s data is recorded on so-called Grey Lists. Customers detected by the system as having made repeated manipulation attempts are moved from the Grey List to the Black List and are subsequently refused entry. This ensures clarity.

• Swapped tickets
Customers are identified at the exit who are in possession of a valid ticket but who presumably manipulated the system – either deliberately so as to be able to pay a reduced tariff by using another ticket, or by mistake where a couple has unwittingly exchanged their tickets when paying. Once the cause has been identified, a fine can be imposed in addition to the correct parking tariff if there is evidence of a manipulation attempt. And where discounted tickets or contract parker cards are linked to specific individuals, these can now be combined with the license plate number within the system: in this way it is possible to prevent such tickets being passed on to unauthorised third parties.

• Rental cars and towed vehicles
At airports in particular, rental vehicles are regularly parked in areas which are not designated for this purpose. Such vehicles then have to be towed out of the operator’s parking facility. In both cases, entervo LPR allows the correct parking tariff to be calculated and incomplete parking transactions to be finalised in the system – even without a ticket. This makes for increased transparency and traceability.

• Insufficient funds
Customers who have used an operator’s services and have only paid the corresponding parking tariff in part or not at all are registered with their personal data including license plate number and placed on the Grey List. When the customer is identified on re-entry to the parking facility by means of license plate recognition, any outstanding charges can be recovered.

…for significantly increased service convenience
• Ticketless VIP entry for contract customers
Thanks to LPR, contract customers can be treated as VIPs and do not require any further identification to enter the parking facility: the license plate number identified on entry is sufficient authentication. As soon as the number has been checked in the database, the barrier opens automatically. This VIP access even allows one customer to be able to enter with several license plate numbers, clearly providing increased convenience for customers with several vehicles. What is more, signs can display the customer’s name, providing a highly personal welcome and thus enhancing customer loyalty on a lasting basis.

• Ticketless short-term parking pre-booking
Since parking can now also be pre-booked by short-term parking customers and authentication on entry can be handled via license plate recognition, direct and virtu-
ally barrier-free access to the world of parking is now potentially available to all users. This convenience and “coolness” factor clearly enhances customer loyalty and creates fresh appeal. And of course operators gain significant potential for collecting and analysing data and for specific customer targeting.

...for much more effective risk management
Automatic checking of the license plate number of an exiting vehicle against data saved on entry provides enhanced protection against vehicle theft. An alarm is generated when the details do not correspond. The vehicle images are displayed to the personnel in the control centre as part of the entervo alarm management system so that staff can respond swiftly based on verified facts and prevent exit accordingly – in order to protect customer property and limit the risk to the operator.

What is more, license plate recognition provides support for state authorities in tracing vehicles. Furthermore, by comparing images on entrance and exit, the state of a vehicle can be identified. This enables operators to respond much more conclusively to complaints of vehicle damage.

The reliable fulfilment of legal requirements is a core concern of all parking operators. In some countries it is already compulsory to be able to provide a clear link between tickets and vehicles. The LPR system fully integrated in entervo easily enables license plate numbers to be printed on parking tickets and receipts. Since all ticket details are stored in a central database, secure data retrieval is guaranteed in the long term.

...for significantly extended marketing measures
Every parking and pre-booking transaction presents a welcome opportunity to generate and qualify customer data. This contact data is indispensable for good customer relationships. Routine license plate recognition through the LPR system also provides statistically informative data on customer use patterns – whether of contract or short-term parking customers. When analysed intelligently, this data can provide feedback on catchment areas, use habits and much else besides. This means that new parking products can be offered which are tailored to specific customer needs as well as allowing marketing activities to be developed and implemented much more effectively.
The entervo parking management system is designed to offer ideal solutions for all areas of progressive parking management – whether the applications are to address the issues of efficiency, monitoring, service or security. Our technological development strategy is geared towards making all operators a consistent, precisely tailored offer – both for one-off, regional set-ups and at the fully networked global level. To this end, the basic software entervo.com 2 incorporates the essential core applications of a modern parking management system.

In addition, the basic system can be extended by efficiency-enhancing software modules. Since each of the modules also possesses fully integrated functionality, they can of course be retrofitted at a later stage as the need arises. This modular principle makes for maximum freedom of choice, especially in implementing technology-based strategy and upward scaling and when assessing and planning investments.

This software product forms part of a high-performance module family. Each of the components can be incorporated in the software portfolio as part of the basic system – either singly, as a complete package or else in stages as successively added supplements. If necessary individual modules can even be used on a stand-alone basis, i.e. without the basic system, just as required by the desired situation and corporate strategy.

**Key Features of entervo LPR:**

- Secures profits by ruling out fraud.
- Extended customer service – especially in cases of lost or unreadable tickets, as well as for VIPs and pre-booking customers.
- General increase in security.
- Extended capabilities in terms of alarm management, search functions and statistical analyses.
- Effective control instrument for target-oriented geo-marketing.
- Adherence to legal provisions with license plate number print.
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entervo parking management software.
Featuring systematic modular extension.

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