

# PM ABACUS



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## PM ABACUS: ONE STEP AHEAD OF THE FUTURE TODAY

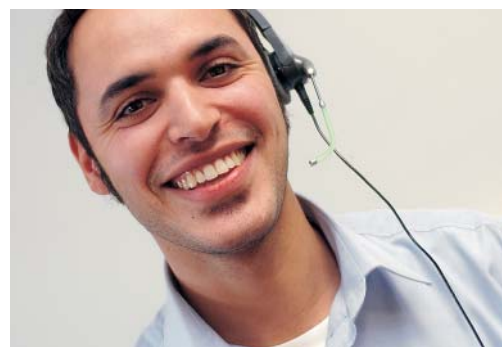
DESIGNA has been developing and producing innovative systems to assist in the professional running of parking facilities for **around three and a half decades**. Today, well over 6,000 of our systems are in operation worldwide – from the simplest hotel garage to large complex projects.

PM ABACUS constitutes the essence of our knowledge of parking technology. All of our planning, realisation and support know-how is combined in this system. And we can rightly claim with a certain amount of pride that this system sets new standards. Not only in regard to reliability and user friendliness but above all where integration and networking options are concerned.

Right from the very beginning, PM ABACUS has been consistently developed to satisfy the demands of **regionally and internationally networked large-scale projects**. This has been achieved by implementing universally acknowledged hardware and software standards, through an open and transparent interface concept and, last but not least, through virtually unlimited scalability.

As a result of these characteristics, PM ABACUS is also the ideal system for medium-sized set-ups with between approx. 5 and 25 terminals – with the option of integrating these into a larger network at a later date. Irrespective of the size of the project: PM ABACUS is the economical and above all the future-orientated solution which protects your investments in an ideal manner.

Be it a city network, airport, shopping centre or hotel and exhibition centre – **with PM ABACUS, solutions to ever more complex and comprehensive challenges are already integrated in the system.**



## THE HARDWARE: INTERNATIONALLY STANDARDISED AND HIGHLY COMPATIBLE

All elements of a PM ABACUS system are designed to be a part of a much larger system – irrespective of whether this means the ten devices installed in a local multi-storey car park or the 200 terminals of an international parking area network with an SAP connection. With a modular technical design, device controllers with state-of-the-art Intel technology and the application of the Ethernet standard throughout the entire process, all components of the system are **open for expansion, integration and networking**. This means that it is no problem whatsoever to integrate external alarm messages, information systems and databases into a PM ABACUS set-up. Large-area structures can also be built up at a very favourable price per VPN (Virtual Private Network).

### Control of entrances and exits

Flexibility is the order of the day: a system can only be properly integrated into different utilisation environments when a number of handling and accounting options are supported. With **bar code and magnetic strip technology** PM ABACUS supports two ticket technologies.

The **magnetic strip ticket** is an economical technology that has been tried and tested for decades. It can be encoded in all devices, thus making it **particularly flexible in its areas** of application. While the standard version of PM ABACUS supports the side strip used with EC and credit cards, the central strip version provides an advantage which should not be underestimated in routine daily use: it allows the ticket to be inserted in any position and direction. This simpler handling for the customer results in a significant increase in operational capacity.

**Payment by EC or credit card** at the point of sale is a matter of course for customers today. With the help of a simple extension of the Multicon, PM ABACUS is capable of handling cards of this type at the entrance and exit, too, thus dispensing with the necessity of a ticket as well as a visit to the cash desk. In addition to this, PM ABACUS offers interfaces to OEM payment terminals for “Chip & PIN” standard (EMV Guideline).

Hands-free customer recognition utilising Radio Frequency Identification (RFID), i.e. so-called **smartcards**, is of great importance, particularly for permanent tickets and debit cards and the integration of different areas of application. PM ABACUS supports smartcards of all standard technologies (ISO 15693, ISO14443, LEGIC, Easy Move) and many other transponder systems can be connected.

### The payment process

From the customer’s point of view, the user-friendliness of a system is determined above all at the pay station. **Speedy settlement of the payment transaction**, convenient user instructions and reliable functioning, even in case of mistakes in operation, are the decisive criteria. PM ABACUS sets new standards here.



TYPICAL HARDWARE COMPONENTS OF THE ABACUS SYSTEM



APS 120: THE AUTOMATIC PAY STATION



ENT/EXT 120: THE ENTRANCE/ EXIT CONTROL TERMINAL



PB 120: THE BARRIER



THE WORKSTATION AND/OR DATABASE SERVER

The Multicon

The core component of the PM Abacus devices is known as the Multicon. It is distinguished by **very fast ticket issuing** at the entrance and generally very **high processing speed**. Modularly built and easy to service, the standard Multicon version contains a needle printer for the economical printing of low-cost, uncoated paper tickets. A high-quality thermal printer with considerably higher resolution can be fitted subsequently. Thanks to the smartcard technology already integrated, the Multicon is also capable of processing **RFID media** with only a minimum amount of additional expense.



THE TECHNICAL CORE COMPONENT OF THE PM ABACUS DEVICES IS THE MULTICON, THE HIGHLY INTEGRATED TICKET PROCESSING UNIT

**Parkhaus [Carpark 51]**

APS 120 ECO [17]
 APS 120 ECO [17]
 EXT 120 BC [22]
 ENT 120 BC [21]

WinPOS [3]

**System-Übersicht [Inte...**

Barcode 9 [9]

**Parkhaus [Carpark 9]**

EXT 120 BC [22]

**Parkhauszähler [Ba...**

Zähler für

- Freie Stellplätze ohne Belegung
- Aktuelle Belegung insgesamt
- Aktuelle Belegung ohne Reservierung
- Aktuelle Belegung mit Reservierung
- Stellplätze
- Max. Stellplätze insgesamt
- Max. Stellplätze ohne Reservierung
- Max. Stellplätze mit Reservierung
- Kurzparker
- Anwesende Kurzparker

Bild anzeigen

**Parkhauszähler [Magstripe 51]**

Zähler für	Anzahl	Status	Automatik
Freie Stellplätze ohne Reservierung	1233		
Belegung			
Aktuelle Belegung insgesamt	292		
Aktuelle Belegung ohne Reservierung	287		
Aktuelle Belegung mit Reservierung	5		
Stellplätze			
Max. Stellplätze insgesamt	1532	Frei	Ein
Max. Stellplätze ohne Reservierung	1520		
Max. Stellplätze mit Reservierung	12		
Kurzparker			
Anwesende Kurzparker	191		

Bild anzeigen

Aktualisieren OK

**Alarm-Meldungen anzeigen**

Datum	Gerät	Alarm-Meldung	Alar...	Alarm...
0.03.2008 16:47:05	APS 120 [15]	MVE-Tür geschlossen	28	0 2 0
0.03.2008 16:47:04	APS 120 [15]	MVE-Tür geöffnet	39	0 2 0
0.03.2008 16:47:04	APS 120 [15]	MVE-Tür geschlossen	28	0 2 0
0.03.2008 16:47:02	APS 120 ECO [17]	Kassentür wurde geschlossen	27	
0.03.2008 16:46:59	APS 120 ECO [17]	Kassentür wurde geöffnet	38	

## THE SOFTWARE: COMMUNICATION AND CONTROL

Thanks to consistent Ethernet communication, **PM ABACUS** provides the perfect infrastructure for a maximum of transparency and control right through to the terminal units. The DESIGNA-developed software uses this infrastructure in an ideal manner. No matter whether it's operating, reporting or device controlling, perfected applications are available based on international standards to guarantee **the reliable, efficient and interface-compatible operation** of your system or car park network, even in the long term. Inside the devices, a Linux operating system specially designed for this purpose takes over function control and communication with the Windows server. As open source software with a global developer basis, Linux is synonymous with absolute stability, scalability and security.

**A modular software package based on Windows** is used to control the parking management system. Depending on the task at hand and utilisation environment, you can decide for yourself which modules are practicable for you. Several key applications, such as reporting, are even available through a Web browser via VPN.

- **WinOperate**

The central application for the control, monitoring and process visualisation of all processes in the system.

- **WebReport**

All important statistics and evaluations are available to you worldwide through coded Internet access via this Web-capable application.

- **WinTariff**

This application allows the parking area operator to configure the tariff structure.

- **WinDevelop**

The database interface for connecting to higher level control systems (such as Facility Management).

- **WinPOS**

This application, which can run on any PC, provides all of the options for manual cash collection. The possible use of a touch screen saves valuable space at the point of sale.

Platz	Genehm.	Beleg	Eintragszeit	Exit Zeit	Eintragsart	Abgabe
Platz 05	PM01001045000000000000	07.03.2007 13:41	07.03.2007 14:17	0	HOES 140	30,03
Platz 42	PM05001000100000000000	21.02.2007 15:43	21.02.2007 16:03	0	HUMK 311	30,03
Platz 01	PM01001045000000000000	09.02.2007 09:18	09.02.2007 14:03	5	HUMK 311	30,03
Platz 2	PM05001001000000000000	15.02.2007 14:03	15.02.2007 13:06	11	HUMK 311	30,03
Platz 15	PM01001000000000000000	05.01.2007 13:06	05.01.2007 09:35	11	HUMK 311	30,03
Platz 3	PM01001011000000000000	08.01.2007 09:35	08.01.2007 09:48	45	HUMK 311	30,03
Platz 12	PM01001011000000000000	08.01.2007 09:35	08.01.2007 09:48	45	HUMK 311	30,03
Platz 57	PM01001045000000000000	01.02.2007 15:30	01.02.2007 15:30	7	HUMK 311	30,03
Platz 1	PM01001000000000000000	01.02.2007 15:30	01.02.2007 15:30	7	HUMK 311	30,03
Platz 34	PM01001000000000000000	01.02.2007 15:30	01.02.2007 15:30	7	HUMK 311	30,03

DEVICE CONTROL,  
TARIFF CONFIGURATION,  
STATISTICAL EVALUATIONS:  
THE SOPHISTICATED USER  
INTERFACES GUARANTEE  
OPTIMAL HANDLING

## LICENCE PLATE RECOGNITION (LPR): OUR HALLMARK – EXCEPTIONAL RELIABILITY

One of the outstanding features of PM ABACUS is its **large number of connection and networking options**, which link individual intelligent solutions into a coordinated system. Our **integrated license plate recognition system (LPR)** is a particularly successful example of how the different DESIGNA products complement modern parking management in one efficient tool.

### Seamless connection

LPR **identifies** the card owner automatically and with a high degree of reliability at the entrance to the facility on the **basis of the license plate**, which it checks for access authorisation using integrated recognition software. An additional integrated LPR system at the car park exit enables the vehicles that leave to be compared with the vehicles that have entered. The advantage of this is additional key operational data on the occupancy of the car park, duration of stay, origin of the vehicle occupants (important for shopping centres) and the security aspect.



Even the most basic standard version of LPR offers useful functions such as:

- **Inventory information** on all vehicles located in the car park at a particular time
- **Uncomplicated replacement tickets** if the original is lost, because the exact entry time can easily be established via the license plate number
- **Blacklist**, with registered license plates of vehicles that, for certain reasons, should be turned away at the entrance
- **Whitelist**, that relates customer cards to particular vehicles and thus prevents misuse
- **Reporting system**, in which the system clearly lists all relevant information for evaluation purposes.



### Easy expandability

Additional functions such as theft protection and fraud recognition, VIP list, greylis, driver camera and overview camera increase the usability of LPR still further and support the operator in running the parking facility yet more professionally and with little extra work, thanks to the innovative technology.



## MANAGEMENT INFORMATION DASHBOARD (MID) – CLEAR MONITORING, RELIABLE CONTROL

DESIGNA is setting new standards in car park management with **PM ABACUS**, it is simple to operate and a highly efficient tool. It reliably integrates a multitude of functions and networking options in one **professional system** – offering the operator a broad range of information with which the performance of the car park can be better established and the facility thus further optimised.

DESIGNA has developed the **Management Information Dashboard** in order to quickly filter **the most important key data** from this data stream in a utilisable form and to **present it clearly**. MID monitors selected parameters independently and continuously, compares them with threshold values which are set automatically and adapted regularly for each facility, and displays their respective status in colour and as a traffic light signal in the form of a pointer instrument.

Critical values or developments can thus be quickly recognised and the operator can **react immediately and precisely**, without having to evaluate the information material himself beforehand. MID makes an important contribution **to operating parking facilities still more economically** in the future.

To this end it analyses parameters from the operational side of the business, from the commercial area and on the cost accounting level – ranging from the condition of the equipment and the number of different registered alarms right up to the occupancy and turnover of the car parks.

Registering critical data at a glance and thus **adapting the system in a more targeted way to its operating parameters** – with MID, DESIGNA has made available a tool that is perfectly adjusted to PM ABACUS in order to do this.



## CENTRAL ADMINISTRATION: CONSISTENTLY TRANSPARENT

Those who operate **an entire network of car parks** rather than just a single one are faced with many different challenges. No matter whether they are spread out through an urban area, a region or an entire country, the central administration of different locations requires a system structure which makes all processes absolutely transparent, on a hardware as well as a database level. PM ABACUS has been consistently developed for this task right from the outset. With its superior networking and scaling capability, this system permits a level of **control and flexibility** never achieved before. In addition to this, Ethernet and TCP/IP as global standards make PM ABACUS open to the integration of systems for Facility Management, video monitoring, vehicle registration number recording and other services.

### The database concept

Every transaction that occurs during the parking process is assigned to the respective ticket in the central SQL database and made available for the reporting system. **Extensive evaluations** are generated at the touch of a button and made available immediately all over the world via the WebReport Internet application. From here, it is only a short step to your company database, because the automated data import into SAP or other corporate software is seamless.

The transaction data collected over a longer period of time enables the visualisation of the typical “ticket process”, from entry to the car park right through to departure – **ideal for marketing purposes**.

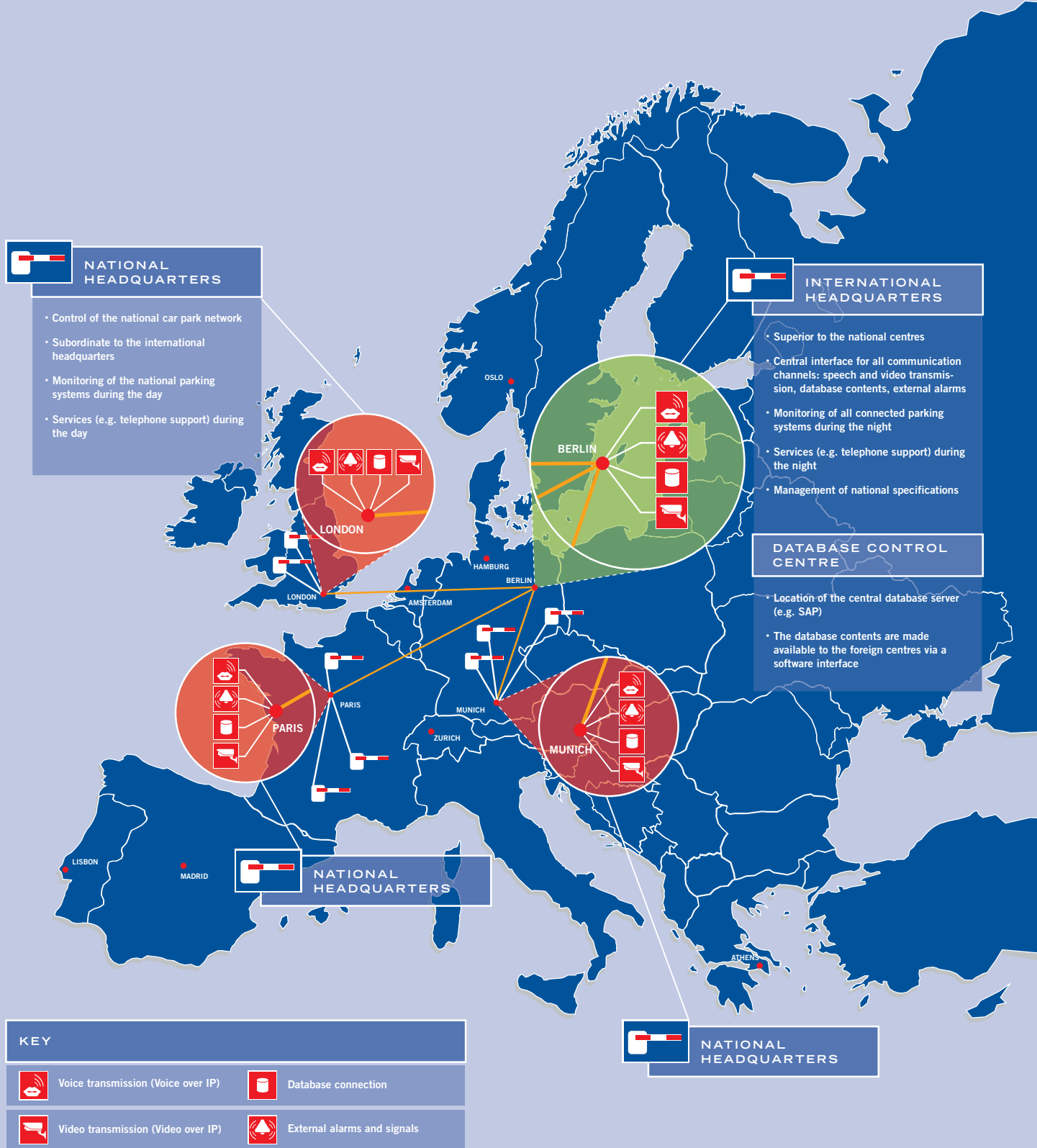


### Central tariff administration

With PM ABACUS, you also have the tariff structure completely under control – individually configured for your various locations and user groups. Permanent ticket holders receive individual terms and conditions and the accrued costs are invoiced automatically at the agreed intervals. **Car park management can hardly be any more convenient and customer friendly.**



DIAGRAM OF AN INTERNATIONAL CAR PARK NETWORK



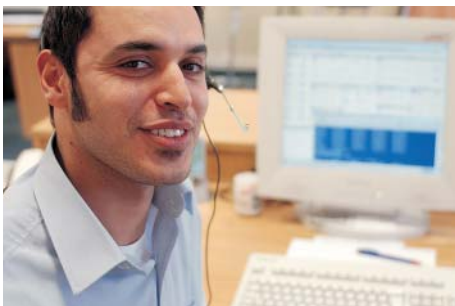
## UNLIMITED PERFORMANCE: WHAT PM ABACUS IS REALLY CAPABLE OF

**Globalisation** hasn't stopped at the doors of car park network operators. In this sector, too, large, internationally active consortiums are leaving their mark on the business landscape to an increasing extent, and this trend is continuing. DESIGNA provides the suitable platform for projects of this magnitude with PM ABACUS technology.

The individual parking lots are linked to their respective national and international headquarters **per Virtual Private Network (VPN)**. This is where all of the threads come together: voice and video information, reports and statistics, external alarms and signals. Thanks to the universal, interface-open infrastructure of the PM ABACUS network, it can serve as a base medium for system-internal as well as system-external services. The result is a massive **increase** in the utilisation value and therefore **in return on investment**.

In this way, synergies and savings can be exploited to the full. If, for example, all **monitoring and service functions** are performed by the main local or national administration during normal business hours, international headquarters takes over this task during the night **for all connected car parks**. Although the customers at each site notice none of this, they are welcomed by a service employee in the national language when they press the call button at the entry terminal.

It goes without saying that a system of this complexity and magnitude must be able to master a variety of country-specific peculiarities and manage them in a sensible manner. This begins with finance standards and in no way ends with the certified reporting system. This requires not only **perfect technology** but also, and in particular, **superior know-how**. **DESIGNA offers you both of these.**



## WHAT COUNTS ON A SHOPPING TRIP: MORE FREE SPACE, MORE BENEFITS

**Shopping centres are adventure worlds.** The customer is supposed to feel good wherever he goes, while excellent service and exceptional campaigns are intended to produce a positive buying mood. The parking system plays a key role in this scenario and not only because virtually every visitor is also a parking space user. In particular, it's because attractive and relevant value added can be generated for customers through the medium of the car park ticket.

Accordingly, a store of special tickets held in PM ABACUS can be issued by a random generator and raffled off in a prize draw. **Customer loyalty cards** are a part of the "mandatory programme" in retail nowadays, and these can also be deployed practicably in the field of car parking. Reduced rates for regular customers or discounts on parking fees depending on the value of goods purchased create an incentive and intensify the feeling of being appreciated as a customer.

Since **discount systems** are one of the great strengths of PM ABACUS, it only stands to reason that this technology is greatly appreciated by operators. Whether the devices operate on or off-line, vouchers are issued or accounting is done by cost centre, PM ABACUS fits flexibly into existing or planned structures. The fact that special **occupancy reports** can be issued for shopping centre tenants and further charging is possible on the basis of parking area utilisation increases the benefits for operators.

If the parking management system is additionally connected to a registration number recording and parking control system via the TCP/IP interface, **extensive customer service opportunities** are opened up. Apart from the rapid identification of vacant spaces upon arrival, the exact location of a vehicle can also be determined at any time at electronic information terminals by entering the registration number. Without any doubt: with PM ABACUS, you are **ideally prepared for the challenges of tomorrow.**









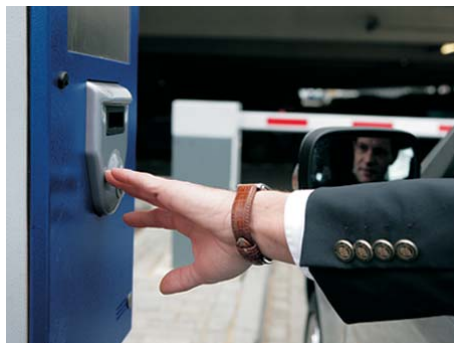
## PARKING AREA MANAGEMENT IN HOSPITALS: 24/7 OPERATION

The grounds of a typical, modern central or large hospital comprise not only a large number of buildings, each with its own surrounding area, they often cover entire city districts. This poses an **equally great challenge** on the “parking system”, which in this case not only has to regulate the incoming and outgoing vehicles in the car parks but also the entire traffic flow within a large area.

**Many different user groups** with just as many different demands have to be considered here. Where ambulances and fire engines require the fastest possible unrestricted access, the main issue with employees and permanent ticket holders is fair and flexible parking fees. The catch phrase “socially compatible rates” plays an important role during the planning phase and there is also a political dimension.

The powerful **tariff configuration tool** contained in the PM ABACUS system can demonstrate its full strength here. Very specific profiles, such as those for shift workers with fixed working hours, or patients who have to make regular return visits, can be set up easily and conveniently, thus resulting in satisfied users.

Without doubt, maximum reliability in **permanent 24-hour operation** is absolutely essential in this particularly sensitive environment, where human lives are at risk. The fully perfected technology and 35 years of know-how in the field of parking management that are contained in PM ABACUS make it predestined for operation in this area.



## BEFORE TAKE-OFF: PARK THE CAR AND ENJOY THE SERVICE

At hardly any other place in the world will you encounter **such high density parking** as at an international airport. The first priority is to regulate the constant in and outflow of flight passengers. The second is to control the parking of a usually very large number of airport employees and service company personnel with completely different requirements. Add to this car rental and taxi handling, valet parking and other special parking forms. These are great challenges which demand a **high-end parking management** system.

### Case example Hamburg

The strengths of the PM ABACUS system become particularly obvious in such a diverse user situation. This is why DESIGNA technology is also to be found at many other large European airports. Take the example of Hamburg, where roughly 7,000 permanent ticket holders park with the help of non-contact Easy Move technology\*. Approximately 5,500 of them are service company staff whose parking fees are charged on the basis of time slots. The system automatically generates **user protocols** which are made available in the intranet with password protection. At the same time, the data is imported into SAP software where it is used for accounting and controlling.

### Value added through service

As a service to airport customers, parking is also ideally suited for additional special offers. An excellent example of this is **Holiday Parking**, where the airport issues vouchers to travel agents who then pass these on to their customers when they book a flight. When customers then park their cars at the airport for a week, for example, they receive a welcome discount at the pay station. This is only one example of many to show how parking can be used creatively to increase **customer loyalty** with the help of PM ABACUS.



\* Easy Move: contactless access using a transponder card.





## HOTELS AND EXHIBITION CENTRES: UNIQUELY VISITOR FRIENDLY

The car parks of hotels and exhibition centres have to be able to cope with a **large number of possible usage needs**, often round the clock. PM ABACUS is especially well suited to meeting this challenge, as the system is designed to easily integrate even complex demands into one solution.

Being able to easily park their own vehicle on the way to the hotel, the theatre or to conventions is self-evident for most people. For this reason a system is needed in this area that not only impresses clients with its **reliability, speed and simple serviceability**, but also offers the opportunity of combining different user profiles and creating additional incentives by linking with a variety of offers.

**PM ABACUS works quickly, and is user friendly and fail-safe.** More added value can be created with the possibility of implementing special rates for particular events, discounts and joint campaigns with selected partners.

Hotel guests will experience a new level of service with the special **hotel ticket**. A normal short-term parking ticket can be recoded upon check-in via the manual ticket machine by entering the guest's intended date of departure. During this agreed time period guests can **use the car park as often as they wish**, without visiting the ticket machine specially each time before they leave. The guest will come to value this easy to use and time-saving service.

With the **"theatre tariff"**, short-term parking tickets that are issued at the car park entrance over a certain time period are charged differently at the car park's ticket machines. At all payment times that lie within this period the customer pays a price that has been fixed in advance by the operator. The benefit: **tickets can be paid for in advance** in order to avoid waiting times at the ticket machines at the end of a performance.

**Convention tickets** entitle the holder to repeatedly enter and leave the car park at no cost during a set time period. In addition, these tickets can be acquired before an event by the organiser so that they can be passed on to the participants. On the one hand this procedure makes it easier to calculate the **need for parking spaces more precisely**, and on the other, customers are able to enter and exit considerably more easily and quickly.

**Optional extensions** such as the license plate recognition system (LPR) via TCP/IP interfaces make PM ABACUS even more effective in this area. In addition, TFT colour displays with a graphical presentation of the operating instructions and **multilingual menu navigation** make the system yet more convenient and simple to use.



## CUSTOMER SERVICE: OPTIMAL SUPPORT FOR EVERY STAGE OF YOUR PROJECT

**Technologies are made by humans and used by humans.** We are very much aware of the truth of this statement at DESIGNA. Ultimately, it must be made possible for every user today and in the future to truly understand and master a system, no matter how elaborate it may be. That's why we give you the precise instructions and support that you need in every phase of the project cycle – from consulting to planning, installation and support – to ensure that you can always recognise and fully exploit the potential of PM ABACUS.

In the After Sales area, everything is split into three clearly defined categories: **Training, Support and On-Site Service.** In our training sessions, we make you so completely familiar with our hardware and software that you are not only ideally prepared for practical everyday situations but also for solving smaller problems on your own. To achieve this goal, we simulate the handling of the applications over and over again at the training centre. The set-up and maintenance of the devices are explained in detail.

Should you then need support in practical situations, a direct line to the engineers in our support team is open to you at all times. Our experience has shown that many difficulties can be overcome very quickly over the telephone or **through remote maintenance**, because thanks to the open architecture of PM ABACUS, our professionals can look right into the heart of each system component. The status of the control computer installed in every device is evaluated and potential sources of disturbance are usually corrected directly.

Should it ever be necessary to call out a technician, our regionally organised on-site service staff will visit you or your customer without delay. Thanks to state-of-the-art electronic diagnostic equipment, defects are detected quickly – and usually corrected just as quickly. PM ABACUS not only stands for the greatest possible amount of innovation but also for maximum profitability. **This applies to the future, too.**





SIGNA

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