

## Innovation based on tradition.

Efficient parking facility management starts with a well-developed management system. The architecture of MONOCARD III offers the highest possible degree of flexibility. The management system MC3Z incorporates comprehensive, well-developed functionality to meet the recognized needs of a modern parking facility, whether this is a small parking area or a highly complex combination of parking facilities.

monocard III

## Management System MC3



### System Setup Console

Central management of all system data.

### Parking Management Console

To monitor and control the entire parking facility and its devices.

### Device Console

To monitor and control the individual devices. This console introduces alarms, carries out commands and logs the activities of individual devices.

### Alarm Management Console

For a comprehensive management of all alarms given by MONOCARD devices, but also by external components like fire detectors, etc.

### Customer Data Center

Centralised management of all client data, e.g. addresses, long-term tenant or account card information. Interfaces to external systems like invoicing or reservation system.

### Tariff Management System

To easily manage and graphically display a high

number of most different tariff structures. What-if analyses allow planning for a certain period of time.

### Manual Ticket Processing

Manipulation of tickets for congresses, advance payments, long-term tenants, etc.

### Parking facility management and traffic flow control

Management system for the building, its areas and parking zones. Definition of parameters for entry and traffic flow control within the parking facility.

## System Architecture

The MONOCARD III – management system has been implemented consequently as a «three tier» client-server architecture in order to offer total flexibility for the management of distributed systems, e.g. in a combination of complex parking facilities. The MC3Z system architecture offers the following advantages:

- New operator devices such as PDA or external access via www can be easily realised without modifying the database or applications.
- The parking operator has rapid access to data from various servers.
- The maintenance and further development of MC3Z is ensured in a secure and economic way by a clear separation of user interface, applications and database

## Development Tools

MC3Z is a completely new, fully object-oriented application developed in JAVA and C++.

Data, system configuration and runtime information are managed in a SQL database. JDBC or ODBC are used as standard database interfaces.

All user interfaces can be run with a standard web browser. They have been developed either in JAVA servlet technology or with SpiderControl™, a graphic design tool for JAVA applets.

## Interfaces to Standard Office Products

For the interface between MC3Z and Microsoft Office standard products (e.g. Excel), standard interfaces are used. A standard SQL-interface is available for comprehensive evaluation tools. Therefore, also value added applications, e.g. reservation system, can be linked easily to MC3Z.

## Communication Concepts

MC3Z is upward compatible. The network between the devices like paypoints, entrance and exit stations, and the central station can be realised by a current loop (CU20) concept or by TCP/IP as well.

MC3Z has been designed in such a way that a CU20 concentrator can be positioned generally at every place in the TCP/IP network and split up into several distributed concentrator systems. The central station is based on an IPC (Industrial Personal Computer). The operating system Windows 2000 Professional is used. This concept can also be adapted to other operating systems like Linux.

Distributed concentrators allow the following interchangeable possibilities of a HW-exploitation of a parking facility:

- IPC with local CU20 concentrator
- Remote system exclusively as CU20 concentrator
- Embedded systems as gateway for 1..n CU20 links

Based upon the development of new technologies, this concept can replace or complement existing peripherals with CU20 interface by new Ethernet-based peripherals.

## Technical Specifications

Hardware	
Industrial PC with:	256 MB memory 18 GB disk
Interfaces	7xRS 232 2x16 I/O's for external devices Ethernet hub 10/100 MB
Operating system	Windows 2000 Professional
Database	SQL standard