CENTRAL MANAGEMENT SYSTEM
CMC-2020

Central Management Computer *CMC-2020*

FEATURES:

- *MS-Windows® Operating System*
- *MS-Visual® Basic Graphic User Interface (GUI)*
- *MS-Access® of MS-SQL® Database (depending upon anticipated activity level of system traffic – number of lanes).*
- *Comprehensive "Real-Time" Monitoring and Control*
- *Turnkey Complete System*
- *True System Integration*
- *Modular Composition – Select Software Modules You Will Use!*
- *Revenue Control:*
  - *Monitoring*
  - *Reporting*
  - *Statistical Analysis*
  - *Accounting*
- *Access Controls:*
  - *"Real-Time" Monitoring*
  - *Reporting*
  - *Statistical & Trend Analysis*
  - *Accounting & Invoicing*
- *Parking & Count Control:*
  - *Monitor Traffic Flow*
  - *Differentiate Counts between Monthly Cardholders and Transient Patrons*
  - *Comprehensive Reporting*
  - *Statistical & Trend Analysis*
- *Comprehensive Reporting*
- *Open System Architecture*
- *Software Compatibility with All Traditional Microsoft® products like Excel, Access, and SQL.*
- *User Configurable Report Creation*

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TOTAL INTEGRATED SYSTEM SOLUTION:
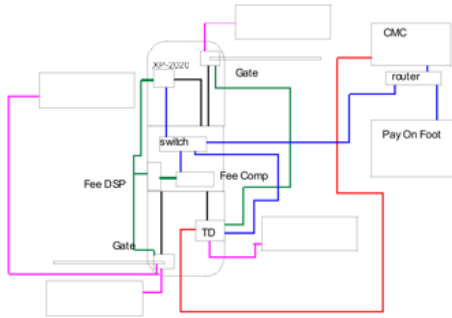
The **EPS** concept represents the most effective and efficient use of today's technology adapted to the Parking Industry's most complete line of Parking Access and Revenue Control (PARC) products and systems available.

The **EPS** *Central Management Computer* (CMC) system software provides a complete solution for virtually every parking installation of any size, from the most modest surface facility to major multi-level parking structures with wide-area networking application requirements. **EPS** can provide a total "turnkey" system for any parking application.

SYSTEM ARCHITECTURE:

The **EPS** *Central Management Computer* (CMC) system software is a personal computer (P/C) based, open-architecture (ODBC compliant) software system. It utilizes the Microsoft® *Windows* operating system, providing the user with virtually all of the benefits associated with the world's largest and most respected software developer's features, including networking, database management, communications, archiving and data storage, and control capabilities. Couple the operating system with the fact that the **EPS** CMC program was written using Microsoft® *Visual Basic* to insure the best and most advanced in graphic user interface (GUI), making the term "user-friendly" truly applicable. And finally, the **EPS** CMC software utilizes the Microsoft® *SQL* database engine, to sort, archive, and store all of the data collected by this on-line system.

The major advantages of such a strong connection to P/C industry stalwarts as IBM-compatible P/C hardware running exclusively in a complete Microsoft® environment, assures the user of the finest, most stable and user-friendly system available in the Parking Industry.

NETWORKING SOLUTIONS:

Because the **EPS** CMC System is a completely scalable P/C based marriage of hardware and software, it provides comprehensive control of all system activities at the parking facility. This scalability means unprecedented accuracy because of built-in checks and balances performed with every transaction and/or event recorded by the PARC System. The data acquisition and communications protocol (TCP/IP) are computer industry proven, reliable, and accurate. The versatility of this system networking architecture, based upon a client/server protocol incorporates the latest open system architecture technology, and is accepted the world over as the most reliable and consistent available.

COMMAND & CONTROL:

One of the most beneficial reasons for having an "on-line" PARC System is providing the user with the necessary Command and Control of all of the peripheral devices within the system. This feature will allow the system operator to either manually or automatically activate or deactivate any specific device, or group of devices. These commands include activation/deactivation of lot "FULL" signs, activation/deactivation of card access control readers and/or ticket dispensers, activation/deactivation of lane control lights (Lane OPEN/CLOSED), raise or allow to lower lift-arm barrier gates, enable/disable automatic exit control devices (Exit Verifiers or "*Express Exit*" Pay Stations), etc.

Through the establishment of user-defined parameters pre-programmed into the CMC System on-site, via the system configuration menus, the system user may program the CMC System to automatically control remote peripheral devices. These automatic controls can be initiated by toggling threshold monitoring of facility/area counts, based upon time zone controls, or other user specified methods.

Through the data filtering and classification of information coming into the **EPS** CMC System, specific events are targeted to provoke system reactions. These "reactions" vary from incrementing and decrementing an event counter, to altering the state of a dry-contact controlling any remote device, to triggering remote programming of another peripheral control device.

PARKING & COUNT CONTROL:

The latest version of the **EPS** CMC System comprehensively supports the complete integration of *Parking Count & Control* of both Access Control System users, and transient patron system users. Instead of segregating access and revenue control, the **EPS** CMC System combines the count system's from both Monthly Cardholders and Transient Visitors into a single completely integrated system, while still maintaining independent counts from each group, at each lane!

This is accomplished by monitoring and recording every activity generated by every card reader, ticket dispenser, fee computer, automatic exit control device (Exit Verifiers or "*Express Exit*" Pay Stations), and particularly every lift-arm barrier gate within the PARC System.

The **EPS** CMC System provides for easy set-up, configuration, and monitoring of all lane equipment within the parking facility's system.

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REVENUE CONTROL:

EPS CMC provides simple to use tools and functionality to help the system manager track and monitor revenues from a central location. The graphic user interface (GUI) user-friendly system screens display transactions emanating from every revenue control device within the system (fee computer, Remote Parking Pay (on-Foot) Station, and/or "*Express Exit*" Pay Station). Rate structures, fee tables, merchant validations, miscellaneous key fees, etc. may be designed and tested at the *SysParc* CMC System computer, and then batch loaded to specific revenue devices in the system network. Revenues received may then be integrated into the system's accounting general ledger.

Through the CMC's system control filters, devices are controlled and monitored to the user defined system parameters. All of the features and functions of the *EPS* fee computers, Remote Parking Pay (on-Foot) Stations, and/or "*Express Exit*" Pay Stations may be customized to the user's requirements designed to meet the parking site's specific requirements.

VALET SYSTEM:

The *EPS* CMC System offers full "on-line" support of the *EPS* Valet PARC System, a CMC sub-system software module comprised of bar code machine-readable Valet Parking (multi-part) Ticket Printers (which operate exactly like Ticket Dispensers), fee collection devices (fee computer, Remote Parking Pay (on-foot) Station, and/or "*Express Exit*" Pay Station). This software module provides complete on-line system integration of the Valet System within an expanded controlled parking application.

The *EPS* Model VP-2010 Bar code Valet Ticket Dispenser is designed to issue a printed date & time, bar code machine readable ticket to an entering Valet parking patron. The *EPS* VP-2010 is activated by the push of a button by a Valet Parking Attendant. The Valet Ticket Dispenser issues one multi-part ticket for each entering parking patron from a continuous ticket roll contained within the Valet Printer's cabinet. Each *EPS* ticket may be fully preprinted on the reverse side with end-user customized printed data, such as general facility location and contract disclaimer.

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CARD ACCESS CONTROL:

EPS CMC provides simple to use tools and functionality to help the system manager track and monitor controlled/restricted access ingress and egress from a central location. The graphic user interface (GUI) user-friendly system screens display access control transactions emanating from every access control device within the system (entry card reader, exit card reader, and valet ticket reader). Access levels, time zones, access groups, individual cardholders, etc. may be designed, programmed, and configured at the *EPS* CMC System computer, and then batch loaded to specific access devices in the system network. Access transactions are then integrated into the system's transaction accounting general ledger.

Through the CMC's system control filters, devices are controlled and monitored to the user defined system parameters. All of the features and functions of the *EPS* card access control devices may be customized to the user's requirements designed to meet the parking site's specific requirements.

HOTEL GUEST PASS SYSTEM MODULE:

The *EPS* *Hotel Guest Pass* System provides easily programmed guest passes with full IN & OUT privileges that utilize the *EPS* CMC System to control the Hotel Guest Pass System module. The hotel guest is issued a bar code pass by the front desk clerk utilizing the model HG-4030 Guest Pass Printer with a keypad and LCD display. The front desk clerk is prompted to first enter their own unique pass code to be granted pass-generation privileges, then enters the number of days for which the pass will be valid. The pass is then printed with the bar code sequential pass number, and date/time of expiration. The desk clerk then has the option to record the sequential pass number on the hotel guest's room portfolio. In the event the Hotel Guest loses their pass, the hotel front desk clerk can disable the lost ticket and issue a new valid pass.

Entry of the hotel guest's pass into the card access database is accomplished automatically upon the printing of each pass. Along with the date/time of issue, the identity of the desk clerk creating the pass, the sequential pass number, and the date/time of expiration.

The Hotel Guest is the provided with the pass, which they use at the bar code scanner access control readers connected to the *EPS* CMC System to gain access to and egress from the Hotel's parking facility(s). The bar code scanner access control readers are connected to the entry and/or exit lane lift-arm gates, to control/restrict accesses.

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VALET TICKET READER MODULE & VALET PRINTER INTERFACE:

The **EPS** CMC provides simple to use tools and functionality to help the system manager track and monitor controlled/restricted access ingress and egress from a central location. The graphic user interface (GUI) user-friendly system screens display Valet Attendant access control transactions emanating from every appropriately equipped Valet access control device within the system.

OPERATIONAL DESCRIPTION of PATRON VALET ENTRY: The client will pull into the Valet vehicle drop-off area adjacent to the Valet Podium where the patron's entry will have been observed by the Valet Parking Attendant. The Attendant will press the ticket issue button on the Valet Ticket Printer (VP-2010). This ticket printer (as pictured to the right) will dispense a multi-part ticket to the Valet Attendant at the Valet Podium, which will start the timing process assigned to that ticket.

The Valet Parking Attendant will greet the client with the bar code ticket's patron claim-check. The claim-check is one part of the multi-part ticket, each part having the same printed bar code number. The client will take this claim-check portion of the ticket with them, and it shall be used to reclaim their vehicle when they have concluded their business at the facility. The Valet will then take possession of the client's vehicle, and attach one part of the multi-part ticket to the vehicle's keys.

The Valet attendant then drives the patron's vehicle to the parking facility's controlled access Entry Lane. In order to gain access into this restricted area, the Valet will drive the client's vehicle into the Entry Lane to a point in front of the lane's lift-arm barrier gate. The Valet will present their own individually unique encoded "Proximity" access control card to the "Prox" reader mounted just to the left of the driver's side door. A successful read of this card will produce an audible beeping signal, and will send an enable signal to the lane's bar code ticket scanner located beneath to the "Prox" reader. The Valet will then present the part of the patron's Entry Ticket to remain with the vehicle (above the sun visor, for example) to the bar code scanner. Because this ticket was dispensed at the Valet Podium, and its issuance was recorded by the Central Management Computer (CMC), this same ticket number will be granted access into the restricted Valet Parking Area of the facility. The bar code scanner will then send a "vend" signal to the Entry Lane's lift-arm barrier gate, instructing the gate to raise its folding aluminum gate arm. After passing over the Entry Lane's closing/safety loop as the patron's vehicle enters the restricted area, the gate will close behind the entering vehicle.

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OPERATIONAL DESCRIPTION of PATRON VALET EXIT: The client will hand their bar code "Claim Check" to the Valet Cashier (or insert it into the Remote Parking Pay (on-foot) Station). The fee computation by the exit revenue control device then proceeds as any normal revenue transaction. At the conclusion of the revenue transaction, the patron's entry "Claim Check" is returned to be used to gain egress from the parking facility. The Valet patron will then take the validated (cashed-out) ticket to the Valet Attendant, who will visually verify that the ticket has been paid for (though this will be machine verified later in the transaction). The Valet will then locate the patron's keys, and go to get the patron's vehicle.

The Valet attendant then drives the patron's vehicle from the parking facility's controlled egress Exit Lane. In order to gain egress from this restricted area, the Valet will drive the client's vehicle into the Exit Lane to a point in front of the lane's lift-arm barrier gate. The Valet will present their own individually unique encoded "Proximity" access control card to the "Prox" reader mounted just to the left of the driver's side door. A successful read of this card will produce an audible beeping signal, and will send an enable signal to the lane's bar code ticket scanner located beneath to the "Prox" reader. The Valet will then present the part of the patron's validated Exit Ticket to the bar code scanner. Because this ticket was validated at an on-line Revenue Control device and the sequential bar code ticket number was validated and recorded by the CMC System, this same ticket number will be granted egress from the restricted Valet Parking Area of the facility. The bar code scanner will then send a "vend" signal to the Exit Lane's lift-arm barrier gate, instructing the gate to raise its folding aluminum gate arm. After passing over the Exit Lane's closing/safety loop as the patron's vehicle departs the restricted area, the gate will close behind the exiting vehicle.

System Management & Accounting Reporting:

The *SysParc* Central Management Computer (CMC) is designed to provide the system operator's management staff with a wide array of comprehensive management and accounting reports designed to automate and simplify the assessment of the parking facility's effectiveness and efficiency. The following is a brief synopsis of several of the reports available through the proposed *SysParc* Central Management Computer (CMC) for the *Disney Concert Hall Parking Garage*:

1. Daily Event Log – This report provides a listing of changes to system and users who made those changes. It includes print communication messages, facility lane equipment alarms, remote gate opening, and system log on/offs.

2. Cashier Shift Report(s) – A report that provides a summary report of one cashier's daily, weekly, or monthly activity, by shift. The system operator will determine the time-frame parameters at the time of requesting the report generation.
This report provides:

      A. A revenue total with cash sub-totals and credit card subtotals by card type.
      B. A summary of non-revenue by transaction type.
      C. A summary of revenue of transaction by type and rate.
      D. A summary of number of transaction by type.
      E. Exit lane count totals (equipment "vend" for ACS access, fee computer, gate, activation loop, and closing loop counts).
      F. Processing errors. This report is used to balance or audit a Cashier Shift.

3. Transaction Detail Report – This is a report that provides a chronological listing of each an every transaction processed by cashier, shift and lane. This report is used to audit cashier information at transaction record level. The Transaction Detail Report lists every transaction number, Exit Processing Date/Time, patron's entry ticket number, Entry Date/Time, Fee Structure number used to calculate the fee, the total amount of the fee processed, amount of any discount validations, amount collected from the patron, and the method of payment (cash, check, debit card, credit card).

4. Credit Card Detail Report – This report provides a chronological listing of each credit card transaction by credit card type (Visa, MasterCard, American Express, Discover), by equipment location, and/or by cashier. The report includes credit card payments made to all machines within the Parking Access & Revenue Control System. This report is used to reconcile credit card transactions with processor payments and with the cashier reports.

5. Exception Transaction Detail Report – This report provides a detailed listing of all exception transactions in chronological order or by transaction type. The report is available for a user-defined time period, and also by a specific cashier, group of cashiers, or all cashiers. This reports is used to audit cashier activity and performance.

6. Summary Reports – This report will provide a daily, weekly, or monthly summary of cashier shift reports, including daily grand totals of all information from cashier shift reports. This report provides an overview of day's / week's / month's activity.

7. Lane / Device Activity Report – For each exit lane, this report provides a summary of revenue by rate type and number of normal and exception transactions by rate type. This report provides trend analysis of transactions by type.

8. Exception Transaction Summary Report – The Exception Transaction Summary Report provides all non-revenue and void transactions in chronological order, by type, and/or cashier for a specified time period. This report is used to audit cashier performance and for statistical information.

9. Daily Lane Use Statistics Report – The Daily Lane Use Statistics Report provides entry and exit counts by date. This report, like most of the CMC Reports, is user-configurable for the time frame covered by this report; Daily, Weekly, or even Monthly. This report is used for management planning and statistical information.

10. Periodic "Length-of-Stay" Duration Report – Provides duration of stay (broken down by hour of day) based on patrons' elapsed time and patron time of entry. The report reflects both Visitor/Transient and Monthly/Cardholder activity within the entire facility. This report is utilized in rate structure and facility usage analysis, management planning, statistical information, rate analysis, and revenue analysis.

11. Sequential Ticket Detail Report – The Sequential Ticket Detail Report provides a complete sequence of transactions related to individual tickets (i.e., information about how and when ticket was issued shall be tied to how and when fee was paid and ticket was processed. This report is sorted by ticket number, and reflects the ticket number's Exit Date/Time, Location, Transaction Number, Entry Date/Time, Fee Structure applied to generate fee due, the total fee generated, the discount validation amount, the actual amount paid by the patron, and the method of payment (cash, credit card type, check).

12. Ticket Value Detail Report – Provides ticket stratification based upon value of all transactions processed. Breakdowns are provided for each rate structure. This report is used for revenue analysis, rate analysis, management planning, and statistical information. The Ticket Value Detail Report provides a complete sequence of transactions related to individual tickets (i.e., information about how and when ticket was issued shall be tied to how and when fee was paid and ticket was processed. This report is sorted by ticket number, and reflects the ticket number's Exit Date/Time, Location, Transaction Number, Entry Date/Time, Fee Structure applied to generate fee due, the total fee generated, the discount validation amount, the actual amount paid by the patron, and the method of payment (cash, credit card type, check).

13. Outstanding Ticket Detail Report – Provides a listing of tickets that have been issued, but are not yet processed at an exit. The Central Management Computer receives data on each revenue control system ticket issuing transaction from the ticket dispenser controller, adding its data to the transaction log and consolidating it into daily activity reports. It is also be capable of retrieving information from the transaction database for user configured and defined reports on revenue control transaction activity.

14. Entry / Exit Statistics Report – This report provides for the counts within a user-defined time parameter of all entries and exits, broken down by hour of the day. This report breaks down these entry/exit events by Visitor/Transient and Monthly/Cardholder transactions, and this report may be generated for a summated report of all lanes within the facility, or by a specific group of lanes.

15 Active Cardholder Report – The Active Cardholder Report details all cardholders within the Access Control System. The report may be sorted by card number, cardholder last name, cardholders within a given group name, access level, card status (active, stolen, lost, expired, revoked, etc.), or payment type (credit card (and which variety), check, or company invoice).