M-PARKING

A BRIEF DESCRIPTION

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VERSION 1.1

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Introduction

ASYRMA is proud to be ahead of most mPayment-related developments around Europe and around the world. We believe in the bright future of m-commerce and the high revenues that will stream in its wake.

We strongly believe m2m (in general and m-payments in particular) could quickly become a high growth activity for the telecom operator. With the technology now available, mobile machine-to-machine communications could ultimately be bigger than voice telecommunications.

ASYRMA has developed a proprietary solution for mobile vending, the "mVS".

The ASYRMA's m-VS platform is an integrated solution consisting of custom hardware **(ATSB-100)** and software **(mVS gateway)** directed towards the realization of a micro-payment solution, which can be coupled with common machines that accept physical (coins / tokens) or electronic (credit card / smart card) payment.

- It allows any machine to become a part of a distributed network of systems that report status and errors to a central location. [For Remote Control and Monitoring/Telemetry Applications, e.g.: for most electromechanical devices (doors, gates, pumps, vending machines, park meters etc.) as well as living environment (temperature, humidity, etc)].
- Without canceling other forms of payment, it also allows cashless payment using a mobile phone.
- It can operate and control (subject to the internal intelligence of the machine) virtually any type of machine on the market that is equipped with transaction facilities (ticketing, vending, park meters, etc).

The ATSB-100 embedded computer for telemetry is built around an Intel 8051-compatible processor with four design goals in mind: System Expandability (can accept up to 16 functionality-enhancing devices, from relay boards and Digital/Analog I/O boards to LCD screens and keyboard interfaces. New boards can be designed according to the needs of a specific application). System Stability (always-on, always-available device. Includes a 'hardware watchdog' to continuously check operation, making the likelihood of a non-responsive system very small). System Performance: system processor runs at 24MHz, with enough power to drive most demanding applications in this category. If more power is needed a compatible substitute processor can be used without any modifications. System Programming: last but not least, the module is operated by software residing in its FLASH RAM. This software can be updated over the air, without a need for technical expertise on site.

Through its internal serial port and external interface cards, it can be connected to virtually any device that possesses some sort of electro-mechanical system.

m-Parking: possible scenarios:

1) **'simple'**: one ATSB to be included in each Park meter. System works as is, with 'payment slips' printed by the meters. User has the additional option of paying by sms as in Vending machine model. No change in systems otherwise, no 'numbered place', no retraining of wardens etc.

Negative: no «κοινωνική πολιτική» since no 'remote recharge'. Possibly an sms can be sent at end of period to remind user to go back to car [to recharge or leave].

2) **'dual'**: Park meters continue to function as they are, no infrastructure upgrade is needed. Users with coins pay at the machines and place the payment slip in their car.
Users who want to pay by mPayment send an sms with the car's registration number to a predetermined number shown on the park meter. They can also pay for more time if their meeting or errand goes on longer than expected without returning to their car.

Wardens check coin-paid cars the regular way. Cars without an apparent slip are checked against a database using a device carried by wardens. These devices can be either ruggedised wireless PDAs or java phones depending on the implementation scenario.

The system can be also programmed to send a text message when the parking time is about to expire. Payment is taken directly from the driver's mobile telephony account (or m-wallet prepaid account).

Positive for «Δήμος» and users: remote recharge is possible. Low cost of infrastructure upgrade: no ATSB needed, just get PDAs/javaphones for wardens.
Negative: Wardens have to be retrained. Users and wardens could be confused by 'dual' system.

3) **'advanced'**: All park meters are upgraded to 'keyboard' operation. All users have to introduce registration numbers or 'parking space id' (assuming parking spaces are numbered), whether by park meter keyboard or in sms text. Otherwise system identical to 'dual' mode for sms users.

Positive for «Δήμος»., wardens and users: unified system, common for all users.
Negative for «Δήμος»: have to invest in park meter keyboards, PDAs/javaphones, warden retraining and possibly park space ids.

About ASYRMA Ltd.

ASYRMA (Applications and Services for Wireless and Mobile Systems Ltd) is the Greek provider of wireless data and mobile Internet solutions. Its mission is the development and integration of solutions enabling business clients to fully utilize the potential of mobile data. ASYRMA also distributes and supports hardware and software for mobile platforms in Greece. Future expansion plans include Cyprus and the Balkans.

Established in mid 2000, this start-up company has a diversified product and services portfolio ranging from m-payment solutions and machine-to-machine communications to Automatic Vehicle Location systems and workforce mobilisation solutions.

Through its worldwide contacts and partnerships, ASYRMA offers a particularly high level of service to our clients who wish to obtain sustainable and profound competitive advantages.

ASYRMA is a member of the Mobile Data Association, Associate member of Ericsson Mobility World and MobiCom SIG member.