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1. Overall System Objective

The system aims to improve the management of full service vending machines. This translates to reducing the number of visits to a particular machine, while reducing the time that a given product is sold-out, i.e. not available for sale. This increase in operating efficiency will produce increased sales, while allowing depot staff to support more machines, without increasing their daily workload.

2. System Architecture

The system consists of 3 primary elements; these are the population of vending machines to be monitored, a Vending Management System, and a Graphical user interface terminal, based at the bottler's depot.

3. System Operation

Each vending machine to be monitored is fitted with a telemetry device called a VIU, Vending Interface Unit. It is this unit for which FCC approval is sought. The VIU consist of two printed circuit boards, a motherboard and a communications interface board. The two boards are fitted within a single case, to become an operational unit, VIU.

The VIU is fitted within the vending machine, usually behind the Perspex front screen, on a mounting plate. If the machine is electronic, the DEX/UCS port is used to obtain information on the machine status. If the machine is electromechanical, a separate electromechanical interface is fitted, which taps into the machine harness, and allows the VIU to monitor the operation of the machine. The VIU obtains its power either from the MDB port in the machine or via the electromechanical interface. An UL approved power pack can also be used to power the VIU.

The VIU reports the machine status to the Vending Management system, via the integrated communications interface board. This board is in fact an integrated Mobitex data packet radio modem, and has been designed for operation with the BellSouth - RAM Mobitex network. An antenna is

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fitted into the top of the VIU case normally, i.e. within the machine. In areas of poor reception an external antenna mounted to the top of the vending machine may be required.

The RAM network carries the radio traffic generated via the VIU, to the Vending Management System, which will be located in Atlanta, GA. The radio traffic is converted to an X25 data stream by the RAM network, which is then processed by the Vending Management System.

Data from all the vending machines is stored at the Vending Management System, and is accessible to the bottlers.

It is expected that with the exception of alarm calls, all transmissions from the VIU's will be at night, allowing the status of all the machines to be updated, before the bottlers start work the following morning. At the bottler's depot, the GUI will be used to contact the Vending Management System using the normal phone network and a modem, and will download the appropriate information. The GUI will then produce a set of reports, allowing the bottler to determine which vending machines need to be visited.

The GUI and the Vending Management System are software programs running on standard computer platforms, and do not require FCC approval.

4. Early Field Trials

The system concept has already been proven using approved RAM Mobitex radio's, external to the VIU case. However, the VIU has now been redesigned to operate with an integrated ram radio, and this design is expected to go in to full production shortly.