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Novax 2020 Rev 1108

A few new features have been added to the meter. Broadly fitting into two categories.

- 1/ Wireless networking using cellular SMS text service.
- 2/ Working hours timers.

SMS Text Network

This is basically a low-priority messaging service which operates on mobile digital telephone networks. Messages are restricted to 256 characters, and tend to be used to 'fill-in' unused capacity on the network. All mobile providers support SMS, as such it is likely to continue to be low cost. Messages can take several seconds to be delivered, but in the general application this is not considered to be a problem.

The Novax 2020 meter has a graphics display, which means it can display text as well as numbers, in the same way as a Mobile Data Terminal. Simply by sending a text message to a cab, the office can display dispatch details of a job on the selected meter's screen, thus we have the basis for a simple taxi dispatch system.

Upon receipt of a text message, the meter will switch to its "MDT" mode and display the message received. In the MDT mode operation of the meter's buttons will generate a response to the network. Operation of the "*" button will send a "Mode-Change" response, and return the meter to its normal mode.

Description of SMS Network Operation

With the meter configured for the SMS network and a compatible modem attached, the meter will send an unsolicited message each time it changes state; *For Hire*, *Hired* or *Logged Off*. In addition to the meter status, the location of the cab can be included in the message, if the vehicle is equipped with a GPS receiver, should vehicle tracking be required, the GPS records can be forwarded to a third party mapping service to plot the location of each cab on the map display. The office will always know the meter status! (and potentially its location), the essential ingredients for dispatch. Cabs can also be polled by the office system in order to update their location and status.

Payment Card Transactions

At the end of a fare, (return to Vacant) the meter message will contain the fare and transaction details, if a payment card was used, thus real-time data transfer to the office is also achieved.

Costs of the SMS Network

Commercial rates of \$0.01c or less, per SMS text message are now

quite common.. One network provider is offering an unlimited number of texts for \$6 per month as an add-on to their prepay system. That's a total of around \$10 per month, for a full two-way unlimited bi-directional network. No doubt other phone companies offer similar rates.

For small companies, messages from the meter to the office may not be required, dispatch messages can still be sent to the meters, and there is no cost to the drivers. This is the **lowest cost dispatch system**, the driver can use his RT to respond if required. Pre-pay SIM-cards can be used in the vehicle modems and will still operate after the credit has expired, the network cost for each vehicle is thus zero, the only cost is to office. Even retrieval of fare transactions can be achieved. The office can periodically dial up each cab in the fleet, and request a "record-dump", thus acquiring stored records and payment card details. The most recent 96 non-cash records (last 50 metered records) are stored in the meter's memory, and can be transferred by one phone call from the office to meter, the cost to the office; \$0.15c or less depending on the phone company contract, the cost to the driver is zero.

Working Hours and Rest Periods

With the new regulations regarding driver working hours and rest times, the full bi-directional network system can help the office to comply with the requirements. When taking a rest the driver will switch his meter to "Off", a text-message is sent by the meter to the office to log him off, and the rest period begins. Driver's rests and working hours can thus be logged by the office software, warnings can be issued if the working hours limits are exceeded. If required, an "End Shift" command can be sent from the office, this will switch the driver's meter "Off" and end the current SHIFT. If the meter is so configured, the meter is effectively locked, until the office sends a "Start Shift" command. This can be used as a "log-on"/"log-off" facility, thus all the tools to enforcing the regulatory rests.

To assist drivers to monitor their own working hours, three new timers have been provided and will be displayed on the "For Hire" screen of the meter. The left-hand timer records hours and minutes worked since the driver last took a ten hour break. The right-hand timer records hours and minutes worked since the driver last took a thirty minute break. The timers will be automatically reset when the appropriate breaks have been taken, ie the meter switched to the "off" mode for the required period (30 minutes/ten hours). "Hours worked" timers accumulate whenever the meter is "For Hire" and "Hired". The third timer logs the time since a 24 hour break was taken, and will only be displayed if this period exceeds 70 hours, in which case the timer will be displayed in place of the other two timers. (Timers are a configurable option.)

Meter Indicators

A number of symbols will display on the meter screen to indicate operation of the network.

'Envelope':- indicates SMS network configuration and the modem has been detected.

'Network':- indicates data is actively being sent and acknowledged.

'Cross-hairs':- indicates GPS fix is "good"

'Telephone Ring':- indicates that the meter is configured to answer incoming calls, and the modem has been detected.

Other Changes in Release 1108

Printed receipt: Now includes payment card expiry date, and second copy of the receipt is printed "Customer Copy" across "signature" space.