

Tolltex Pre-Paid Account Software



Tolltex provides pre-paid account software that allows users to pay their tolls in advance and present a pre-paid card in the lanes for passage.

Users subscribe to the system by establishing an account. Funds are paid into the account to purchase "trips". Each account is then assigned a card or a group of cards. These cards are used in the toll lanes to gain use of the toll facility.

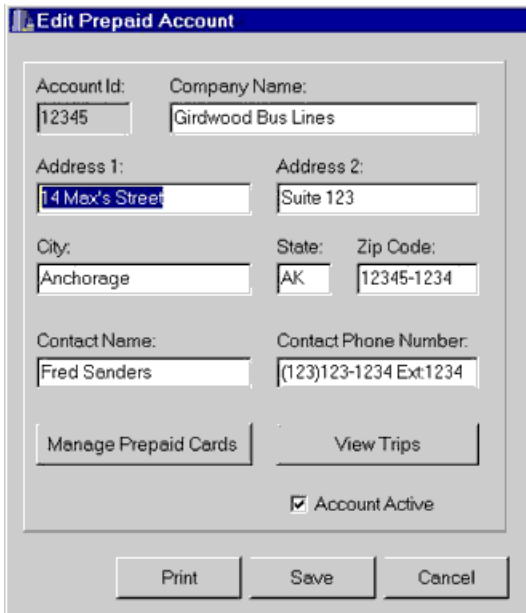
Cards can be either magnetic encoded, bar coded, or encoded smart or proximity type ID cards. Readers corresponding to the type of ID card are used to read the card. Software on the lane controller processes the card to determine if it is valid. If valid, the vehicle is allowed to pass through the lane as indicated by the island traffic signal being set to green and by the automatic barrier gate being opened (if present).

Lane controller software sends a detail transaction message to the host computer where software updates the remaining balance associated with the account/card. Current account information is sent to each lane in the system.

Account information can also be printed on the cards to allow toll booth operators to enter numbers manually in the event that a card cannot be read using the reader.

For "touch and go" applications, proximity readers can be installed in un-manned lanes to allow pre-paid cards to be read automatically.

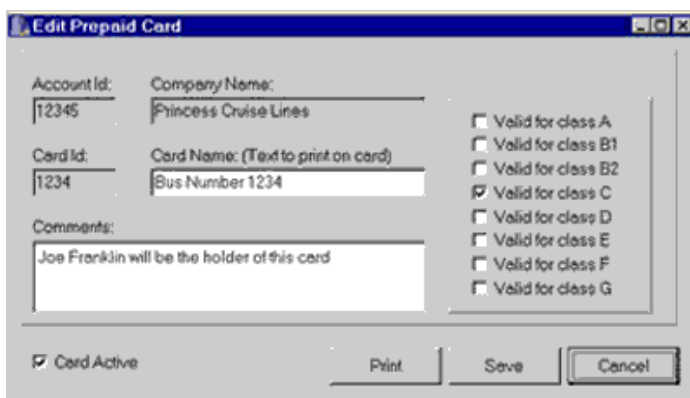
Implementation is based on each user having an account, a certain number of cards issued under the account, and the pre-paid purchase of a certain number of trips that can be used by cardholders associated with the account. Each of these software features are explained below:



The design allows for an "Account" to be established for each user (i.e., a trucking company will have an account). The account identifies the company (i.e., name, contact person, address, phone). Each account has a unique number used within the database and used as part of the individual card numbers. The account then serves as the "Master" for each individual card issued under the account and as the entity responsible for purchasing trips used by the account cardholders.

The image above shows the screen that is used to setup a new account or edit (change) an existing account. The screen also allows an entire account to be enabled or disabled by checking the box next to the Account Active label. When an account is set to disabled, all cards associated with the account are also disabled allowing them not to be accepted in the lanes.

From the account screen, it's possible to "jump to" other screens to manage (add/delete) individual cards associated with the account and/or to view the number of remaining trips associated with the account.



The screen on the left is used to establish an individual card within an account.

Since many users will have more than one vehicle, the system allows multiple cards to be issued under each account

Support for multiple cards allows each account (i.e., a bus bus company) to have many individual cards issued (i.e., one card per bus, or one card per driver). Therefore, revenue paid into an account can be "dispersed" across all drivers that work for the bus company. This feature does not mean the system cannot be used for individuals with only one vehicle. In those cases, a person with only one car would have an

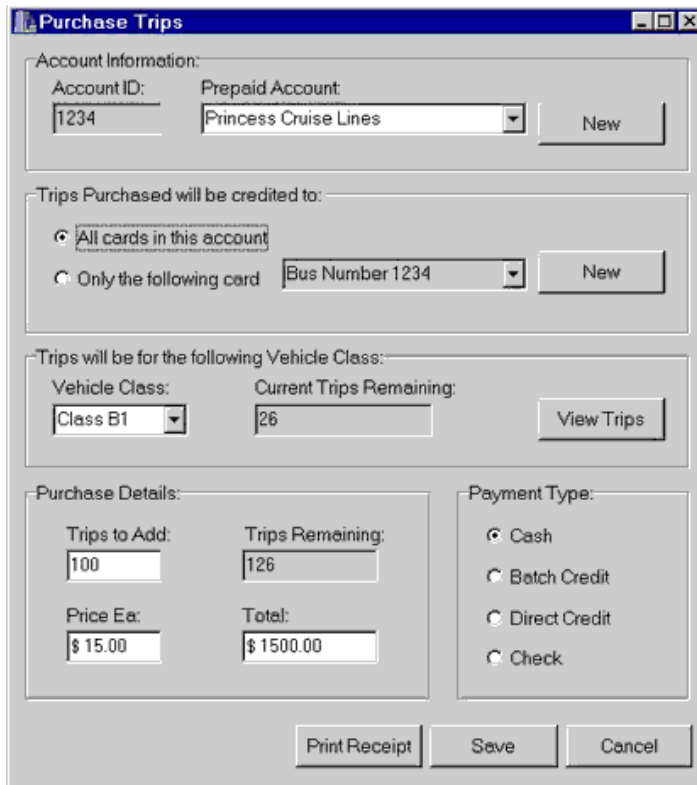
account setup identifying him/her and only one card would be issued under that account.

Greater flexibility is offered by properly managing accounts such as bus companies and trucking companies that usually have many vehicles and/or drivers.

The system also allows an individual card to be used for one or more types of vehicle classes. In the screen above, the card is set to only be valid for Class C vehicles. If more than one vehicle class is to be allowed for a single card, the appropriate box for each class would be checked.

Freeform data entry fields allow each card to be given a name (i.e., Bus Number 1234) and a "Comments" field allows other optional text to be entered.

Note that it is possible to disable an individual card within an account. Typically this would be used if a card is reported lost or stolen.



The screen on the left is used to make purchases for an account.

The money paid into the "Account" is used to purchase "Trips". Trips are passes through the toll lane. Each time a card is presented, it is validated and "one trip" is subtracted from the number of trips purchased for that account. When the account has no more remaining trips, the lane will not accept the card for use. When this occurs in a manned lane, a message is displayed to the toll collector and the patron would pay via cash or some other type of payment. In case of an un-manned Touch and Go lane

that does not have a collector, the vehicle would have to be directed to another toll lane with a toll collector. When more trips are purchased for an account that has been depleted, the card is again accepted in the lanes.

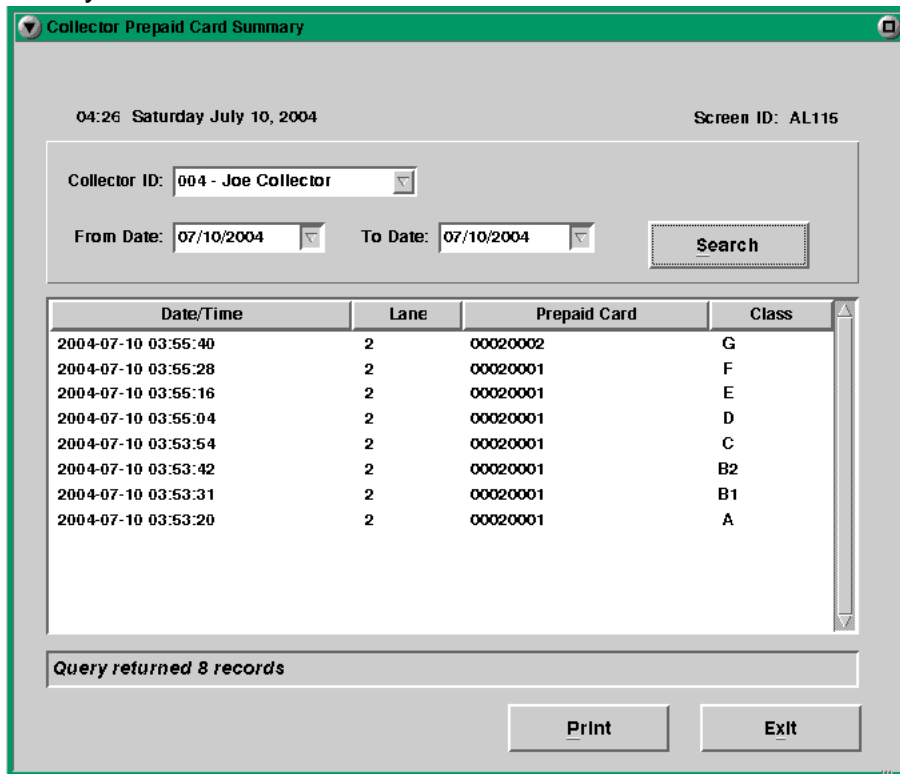
From the Purchase Trips screen it's possible to do the following:

- Select the account from a pull-down list or click "New" to setup a new account.
- Determine which cards in the account this purchase should apply. I.e., all cards in the account or just selected cards.
- Jump to the Card Screen to add a new card to the account.
- Select the vehicle class for which this purchase will be made.
- Determine the number of trips being purchased and the amount that will be charged for the purchase.
- Identify the payment type by clicking on one of the radio buttons next to each available payment type.

The software is flexible enough to allow different rates to be charged to different accounts. This feature allows high-volume users such as trucking, bus, or taxi companies to be given additional discounts based on usage and/or the number of trips they purchase.

Clicking "Save" completes the purchase operation. and Clicking "Print Receipt" produces a printed receipt for the patron.

Pre-Paid cards that are processed in the lanes cause transaction data to be generated by the lane controller. These transactions are sent to the host





computer where they are stored in the database.

Reports are available for management and supervisory staff to audit the system and to perform database searches regarding the use of pre-paid cards.

The screen shown on the previous page illustrates a report that allows pre-paid cards processed by a particular collector during a certain time period to be displayed. Other reports are also available and custom reports can be developed according to the specific operational requirements of the toll facility.

Security to allow access to the pre-paid account software to only authorized users is implemented via user IDs and PINs.

During July 2004, Tolltex implemented this Pre-Paid software for the State of Alaska, USA as an enhancement to the original system Tolltex delivered in 2000. The Tolltex Pre-Paid software is also available for use as part of the **TollTrax** system.