# Prepayment And AMI Management System

# Operation Manual

Shenzhen Golden Square Technology Co., Ltd

# Catalogue

# 1. Preface

## 1.1 Writing Purpose

Scope of Application of this manual：smart metering and billing information management system's application users, operating personnel and trainee.

## 1.2 Prepayment system introduction

ΔDaily selling energy operation

ΔBasic information

ΔBusiness maintenance

Reissue Card

Change meter

Vending modification

Cancel account

Energy Price

ΔSoftware system maintain

  Reader software installation and Card Reader configuration
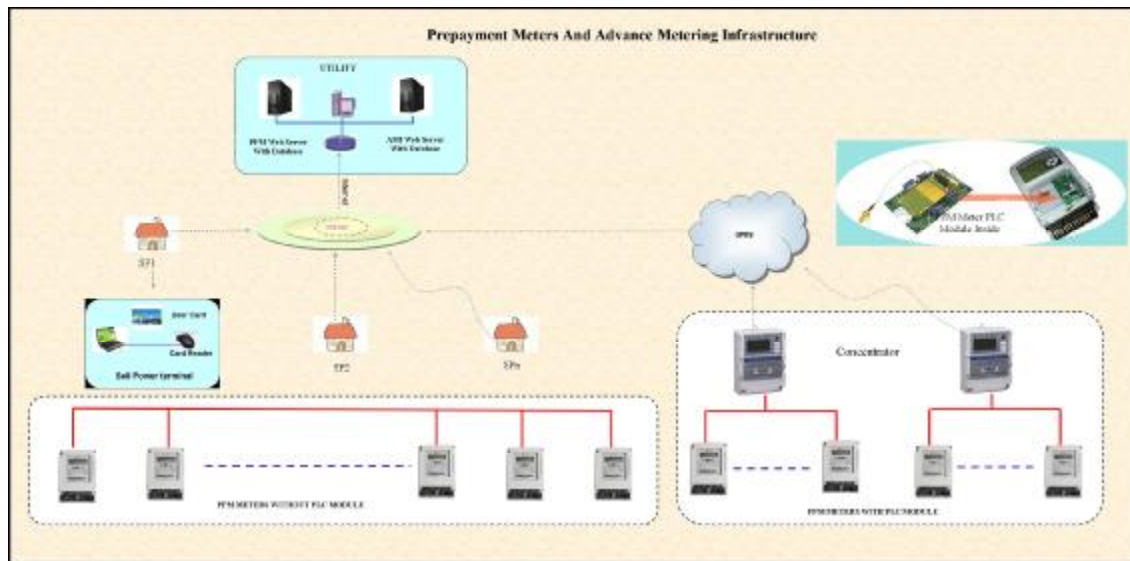
Card tools

ΔSystem Users Management

ΔData Report

## 1.3 System Architecture

## 1.4 B/S Structural System Environment

Server-side: ORACLE database; Server-side is mainly responsible for storage retrieval to query data and resultant reply and providing the safety control of data integrity.

WEB System, server-side needs to offer a middleware software（Weblogic9.2）。
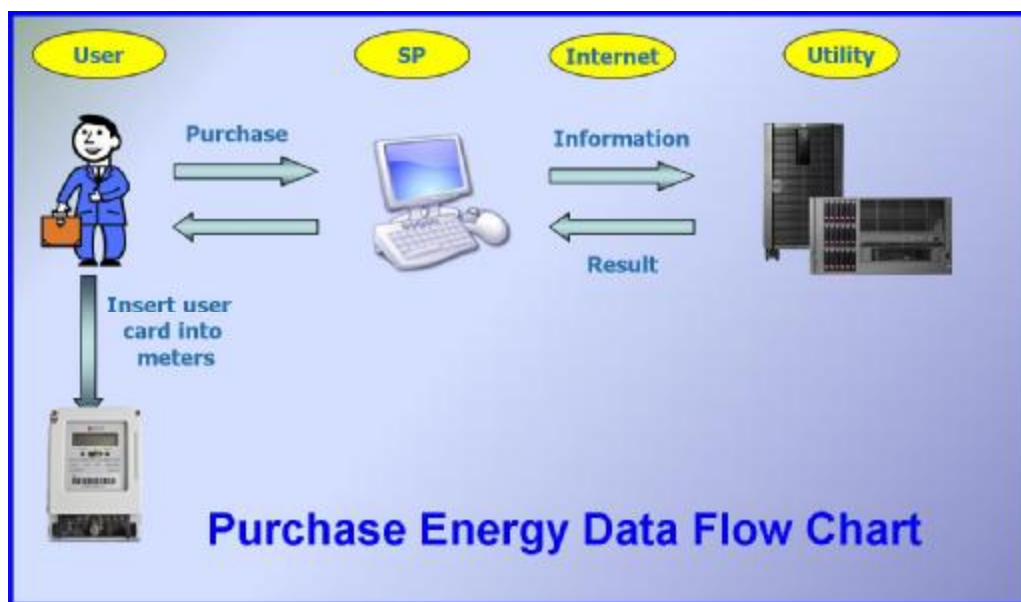
< Structure Chart>



< Center Device Sketch Map>

< Sale Point >

## 1.5 Selling Energy Flow



## 1.6 Smart Card

There are 6 different types for smart cards to realize all kinds of functions.

1. Electricity selling authority card

2. Preset/Scheme card
3. Tariff preset card/Rate Card
4. Consumer card
5. Meter software test card
6. Relay test card

1. Electricity selling authority card

Purpose：
Each salesperson in the sale of electricity business hall should have a electricity selling authority card, when using other cards, it need to insert this card into the card reader all along. A power company holds the cards that means hold the selling kWh authority.

2. Preset/Scheme Card
For the new prepayment meter, the power company will preset some parameters including customer types into this card, then insert this card into meter to preset the same parameter. For example, there are three types for customer:
A. Prohibit to overuse
B. Allow to overuse, if overused energy meet the limited value, it will be switched off
C. Allow to overuse, if overused energy meet the limited value, it is allowed to use the energy for some time

The power company will preset the customer type through the preset card.

3. Tariff preset card/Rate Card
Purpose：If the power company want to configure different tariff, this card is necessary.

4. Consumer Card
Purpose：The end user goes to the sale of electricity business hall to purchase kWh by this card.

5. Meter Software Test Card
Purpose：Used by power company maintainer, check electricity consumption. The Power Meters will write information about user and consumption into the test cards, the information can be read into computers via a card reader for checking.

6. Relay Test Card
Purpose：Used by power company maintainer, test if the relay switch is operating normally or not

# 2. Operation Instructions

## 2.1 Login System

Mouse click the browser shortcut icon ![icon] on the desktop or other position，enable IE browser. In the address bar, input the server address where AMI system located for instance：
http://192.168.10.36:7001/web （Note：This address is not fixed as the server address is different ，So our corresponding workmate will provide the specific one for you）Enter into the page of Login .Picture as followed：
Input user name and password, click on Login then enter into the home page of system.



Chart2.4 Page of System Login

♣ Operating Steps：

    1   In the address bar of IE, input the application access path of WEB of host station

    2   Input the user name and password

    3   Click on LOGIN button

    4   Enter into the main page of system if the user name and password are correct chart2.5 as followed

    5   Prompt the corresponding incorrect information if the user name and password are not correct，back to the page of Login after clicking on YES.

## 2.2 Desktop

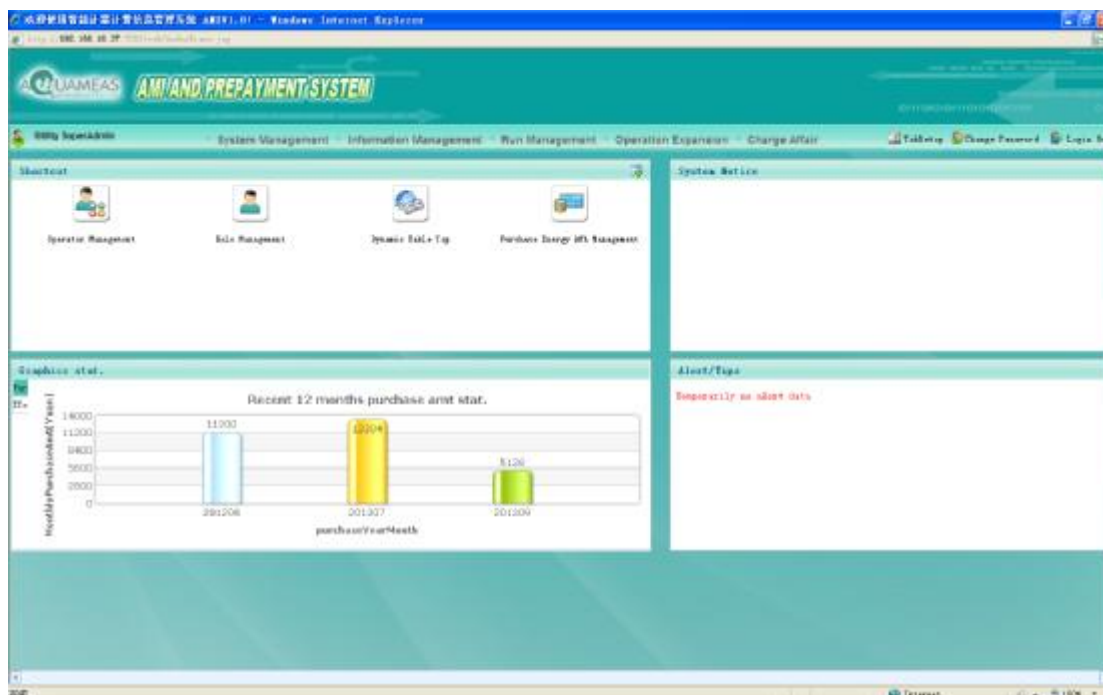Click on【Desktop】enter into my page of desktop，picture as followed.



Chart2.5 Page of System Main Functions

🔹 System Notice

No need to operate, this area only displays the related notice content of system. Information Rolling display from up to down.

🔹 Graphic statistics operating steps

System will automatically display their own area to purchase electricity/IC card-related information based on user permissons after landing.

1 Select the navigation on the left ,automatically switch

2 the mouse should be positioned in their own area,available to display automatically if you want to check the specific data

🔹 Alerts/Tips
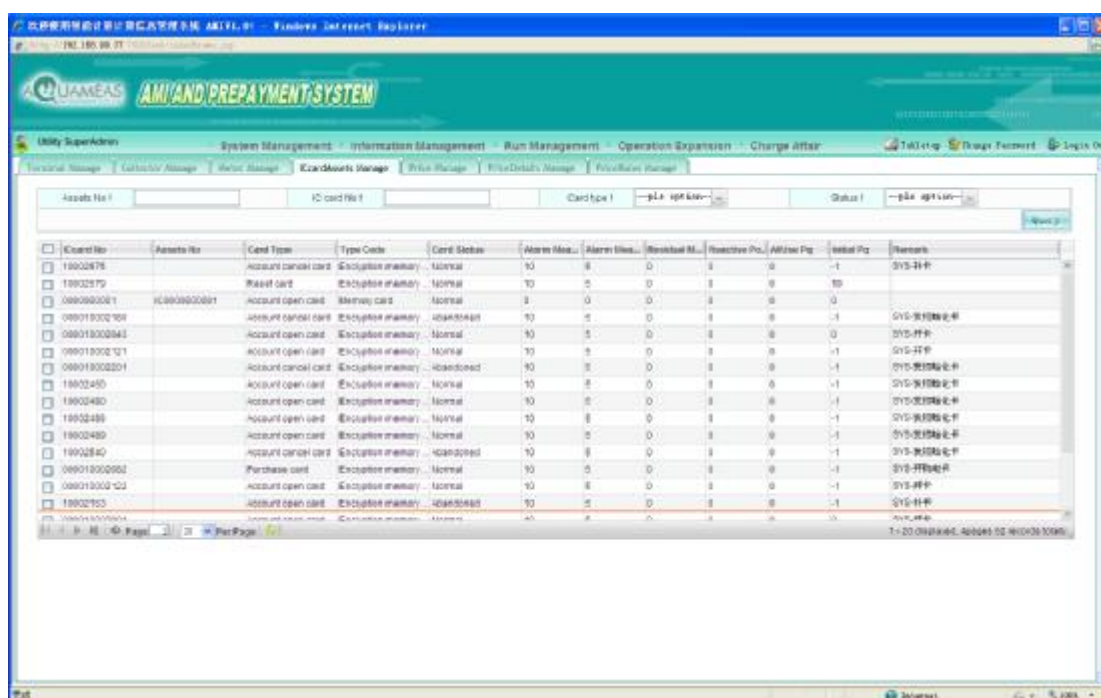
Display alert/tips in the form of list

# 3. Archives Management
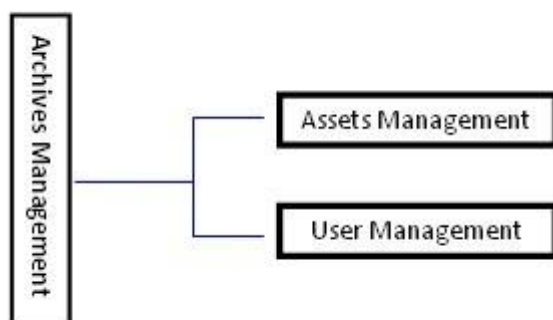
# 3.1 Assets Management

Maintenance of the concentrator assets, collector assets, meter assets, and IC Card assets.The main maintenance is the physical information of various equipments

## 3.1.1 IC Card Assets Management



Function page of IC Card Assets Management listing

Ø Query

♣ Operating Steps

1    Input asset No or IC card No information

2    Click on【Query】button，then display the corresponding data in the listing，in the end finish

the query operation。

# 4. User Management

Maintenance of power supply bureau, power substation, user, metering point. Mainly basic types of information，and the related data setting of billing, like binding price, whether to participate in billing? According to different institution tree layer，The data which each layer pays a close attention to is not the same. The specific data connection of layer as below
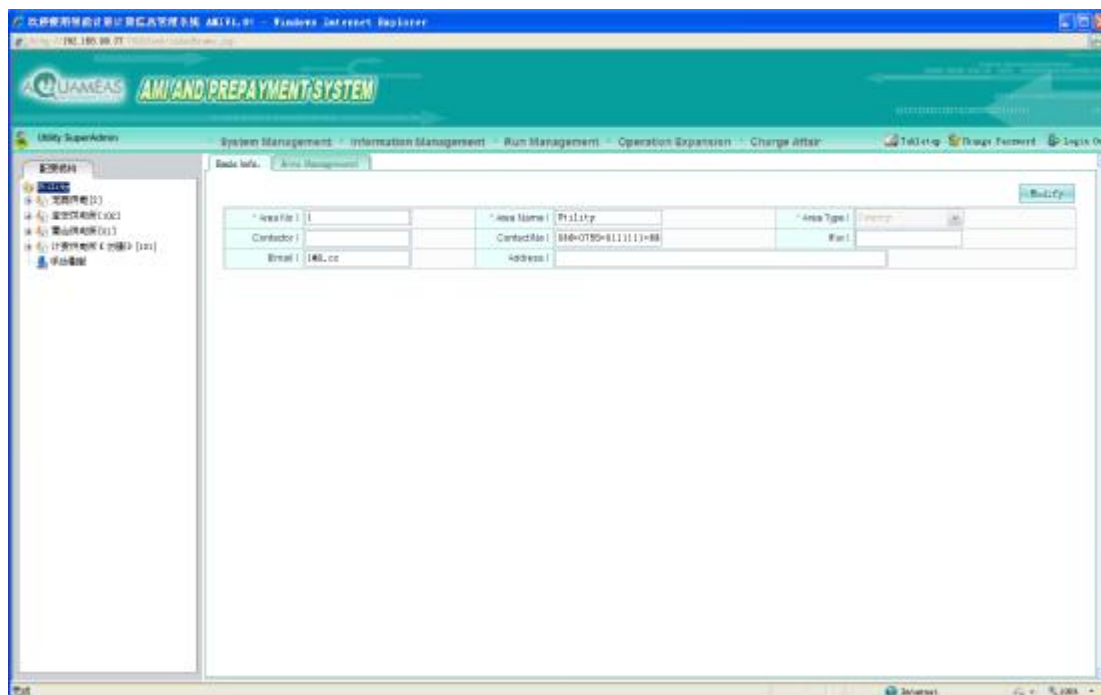
## 4.1 Power Supply Bureau Management

Power supply bureau is located in the top one of organization. The basic information is initialized by system. The supported operation in the management of power supply bureau：
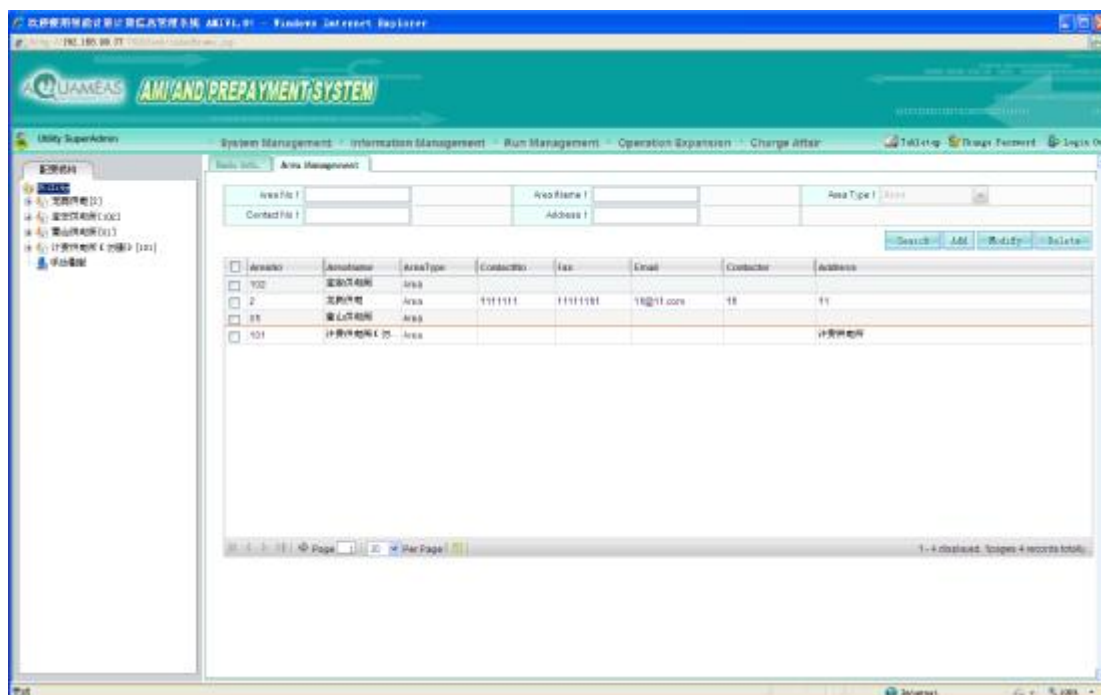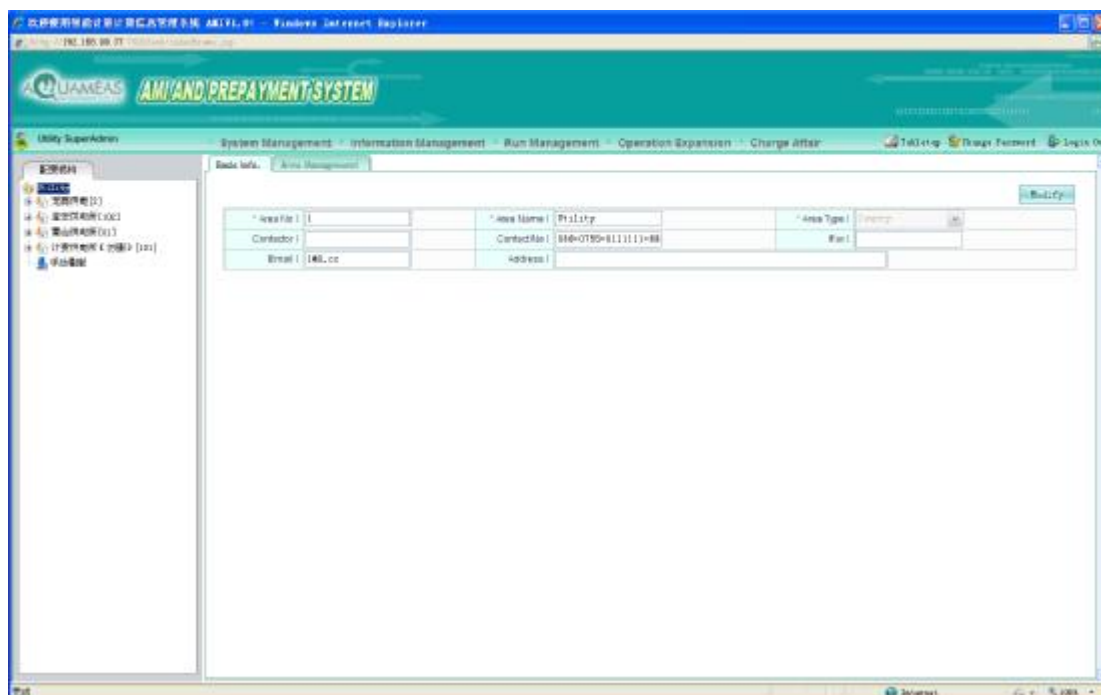


1、Information modification of power supply bureau
2、Add, modify, delete operation of its subordinate power substation
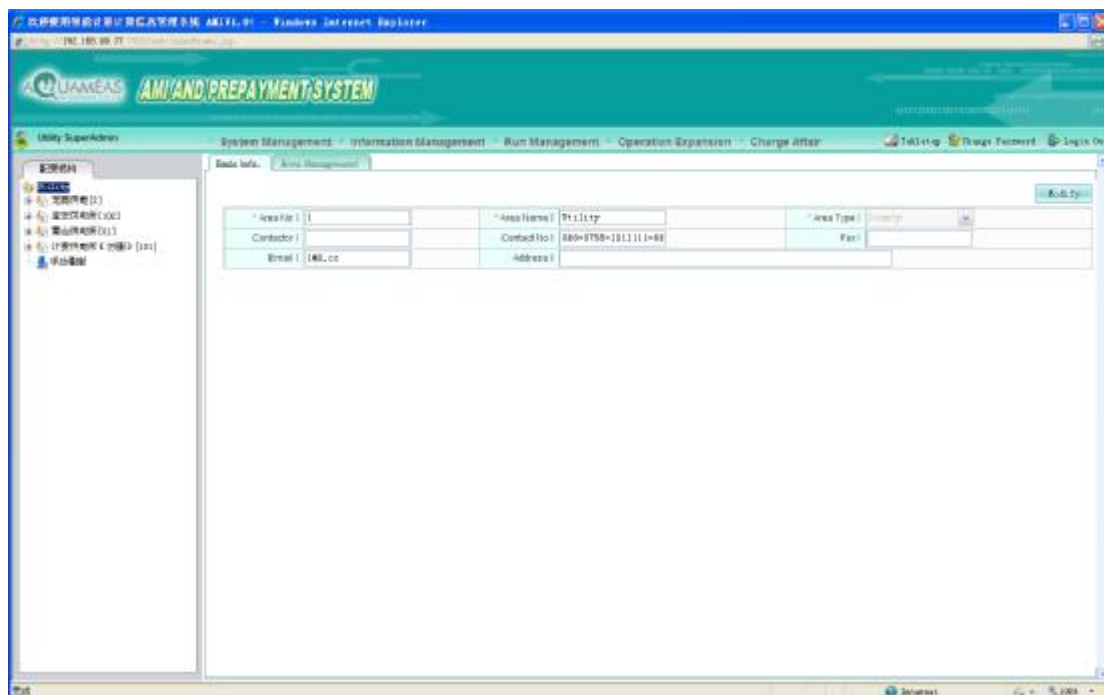
### 4.1.1 Information maintenance of power supply bureau

（1）System user enter into the page of user archives management by clicking on《archives management》—>《user archives》options，as shown in the following pictures

（2）Type in the information which needs to be modified in the following picture



（3）Click on【Modify】button as followed。

（4）Page shown as followed, which indicates the modification of power supply bureau get success information.



〖Rules description〗

Power supply bureau is the top-level organization. Data is initialized by system. Users have no right to add and delete, but support modification operation.

# 4.2 Power Substation Management

The supported operation in the management of power substation：

1、Information modification of power substation。

2、Add, modify, delete of its subordinate transformer.

## 4.2.1 1Information maintenance of power supply substation

（1）System user enter into the page of user archives management by clicking on《archives management》—>《user archives》options，as shown in the following pictures
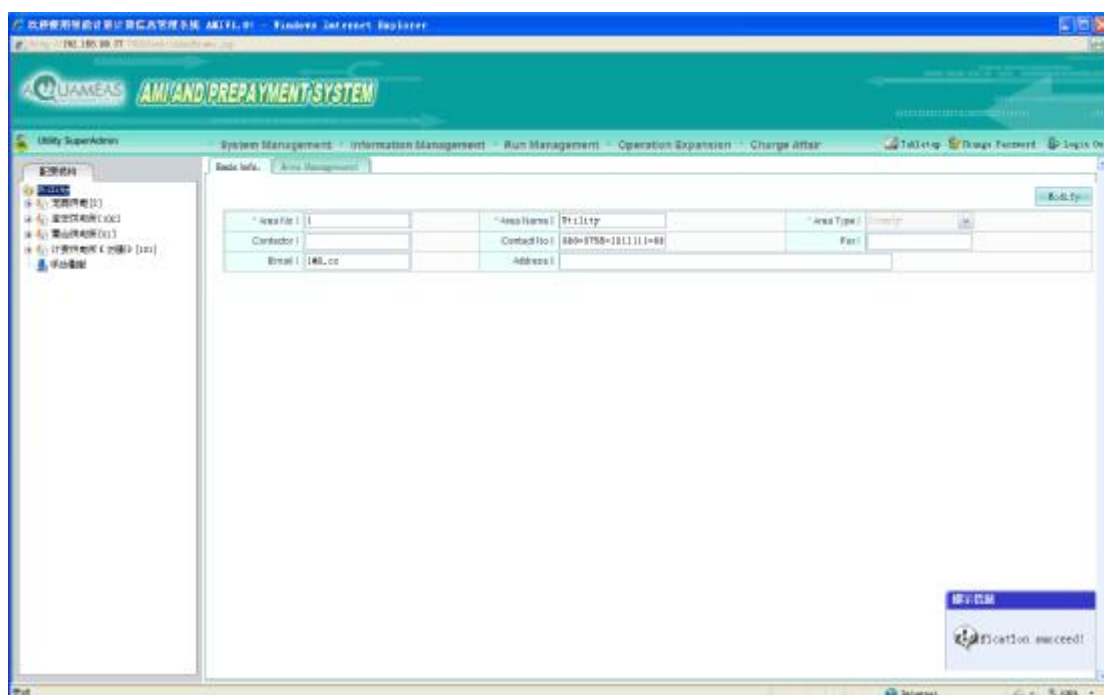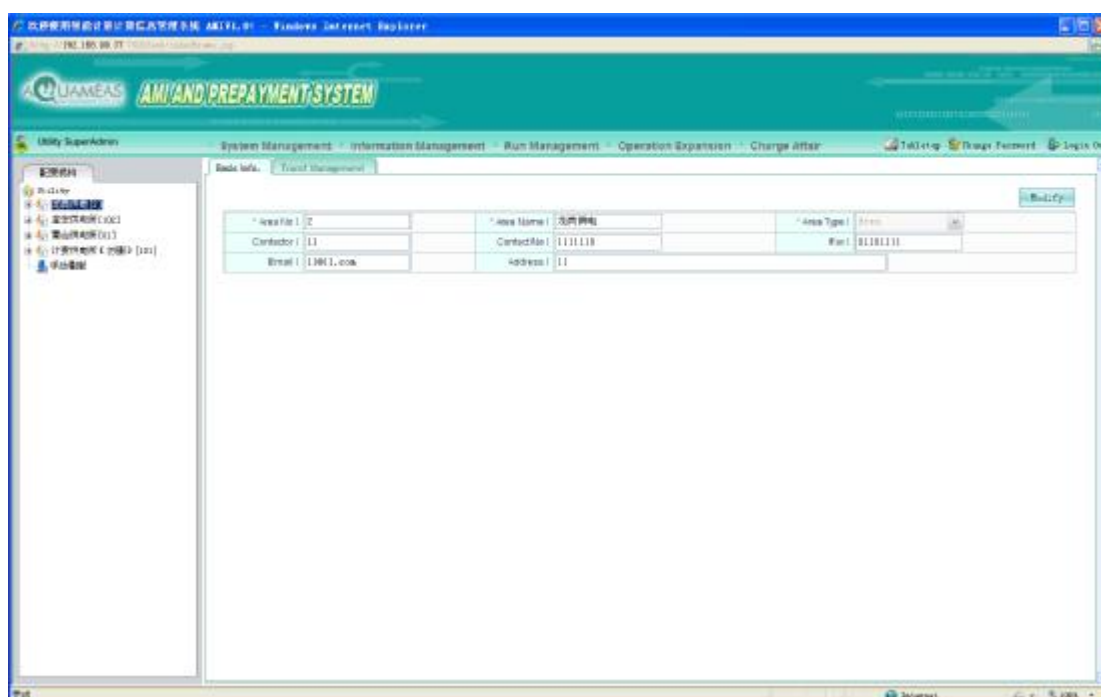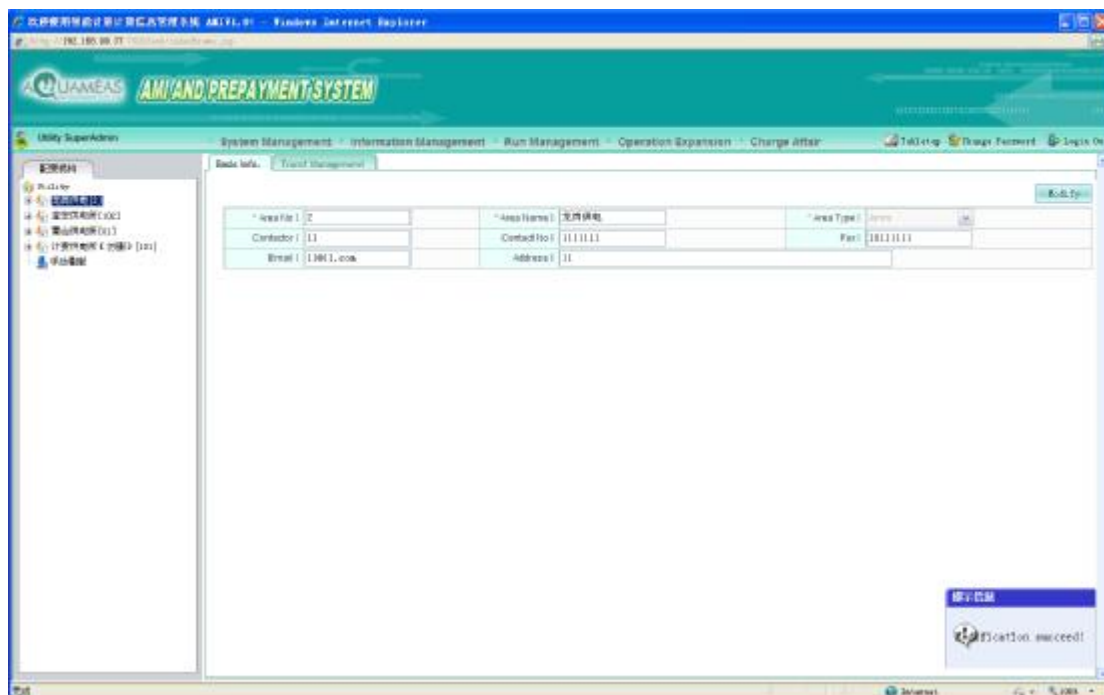


（2）Type in the information which needs to be modified, click on【modification】button
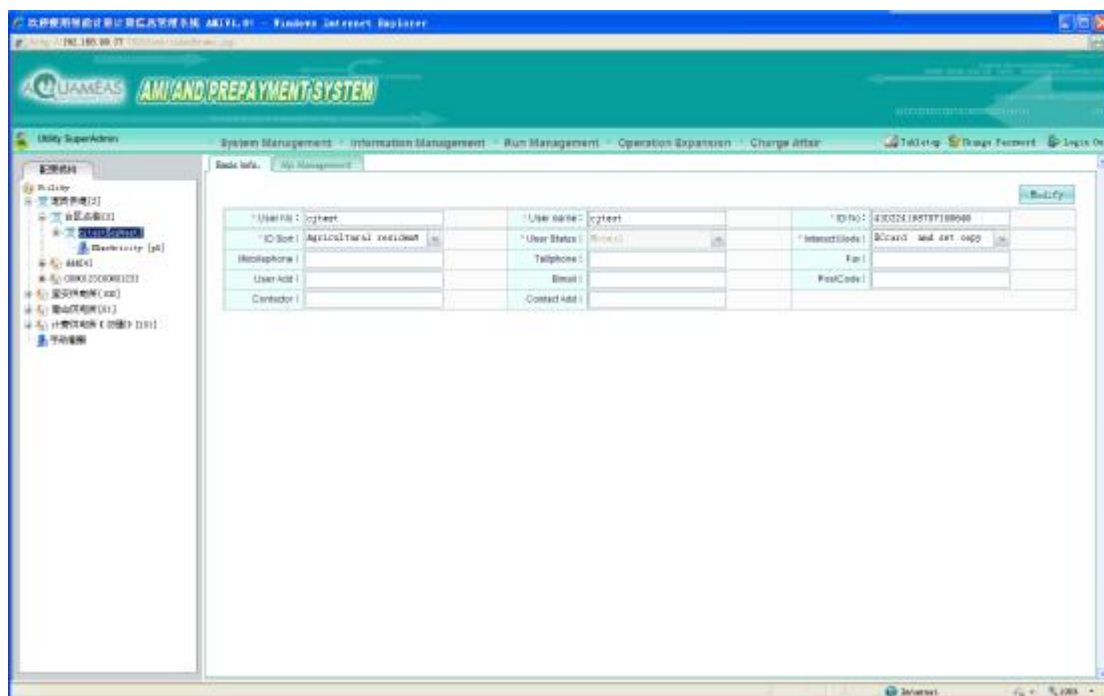
（3）Page shown as followed(red border area ), which indicates the information modification of power supply bureau get success

# 4.3 User Management

## 4.3.1 Maintenance of user information

（1）System user enter into the page of user archives management by clicking on《archives management》—>《user archives》options，as shown in the following pictures



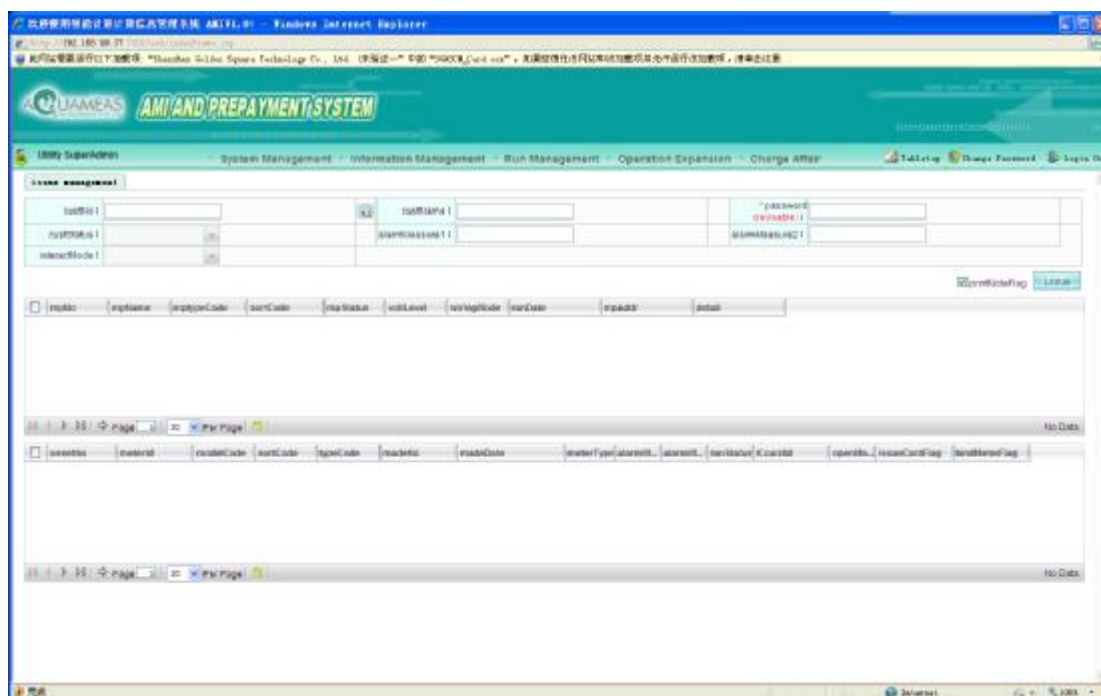（2）Type in the information which needs to be modified, click on【modification】button

（3）Page shown as follow, which indicates the information modification of transformer get success
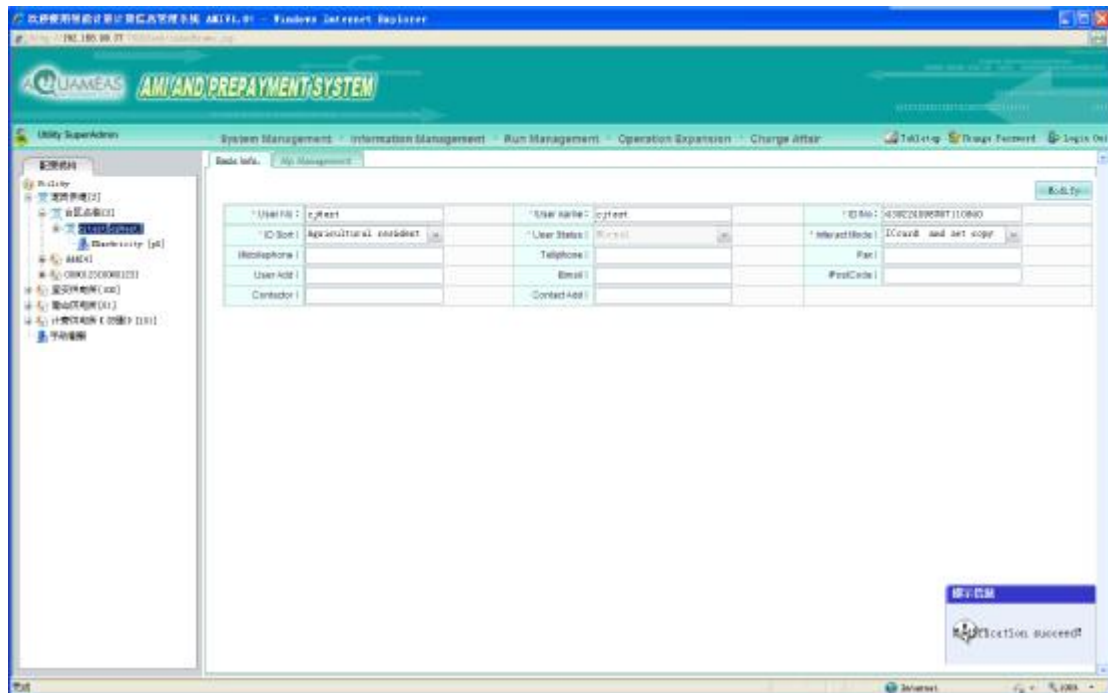
# 5. IC Card

## 5.1 IC Card Business

## 5.1.1 Issue IC Card Management


Page of issue card management
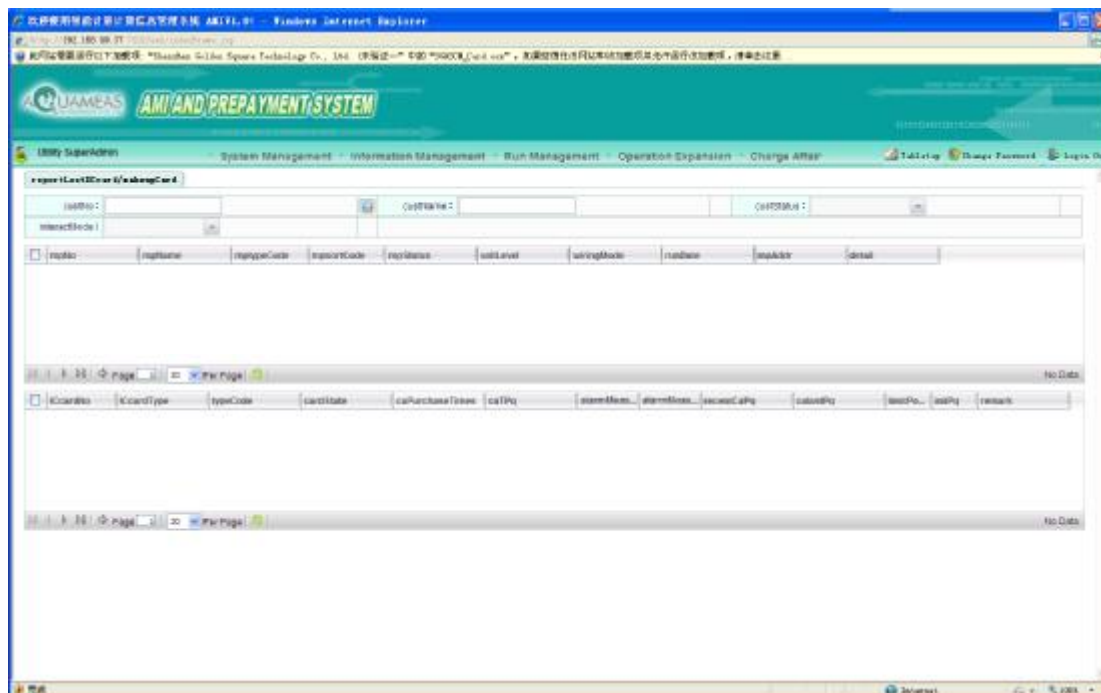
Ø    Issue Card Management

✚    Operating Steps

   1.    Click on【Business Expansion】-> 【IC Card Business】-> 【Issue Card Management】
         menu, enter into the page of issue card management as above;

   2.    Click on ⊞ icon into the page of user query, and select the user records which need to
         be operated(system will shut down this page after finishing this selection, then be back
         to the page of issue card and the selected user records now is in the page of issue card
         management);as follow(☑ selected ☐ Not selected)；

Page of user selection

3.  Pitch on in the listing of user，user metering point listing below this listing will display their own metering point information.

4.  Pitch on the energy meter information which needs to issue card in the listing of metering point，then click on【issue card】button as follow



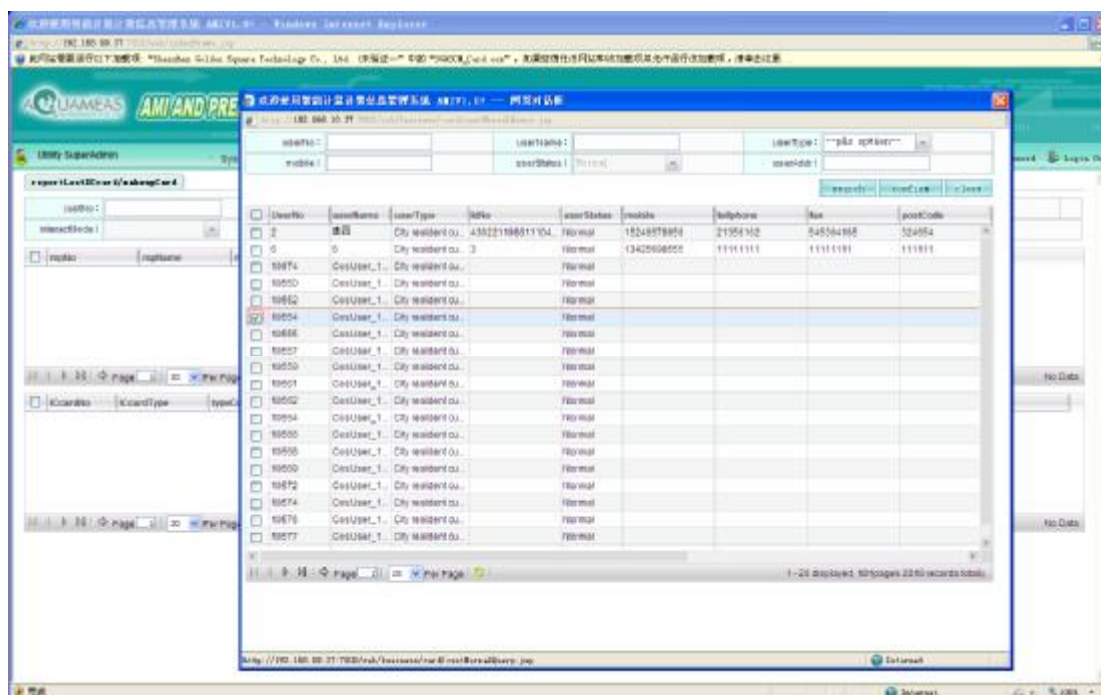Issue card needs to tick the option

# 5.1.2 IC Card Loss Report/Make up



Function Page of IC Card Loss Report/Make Up
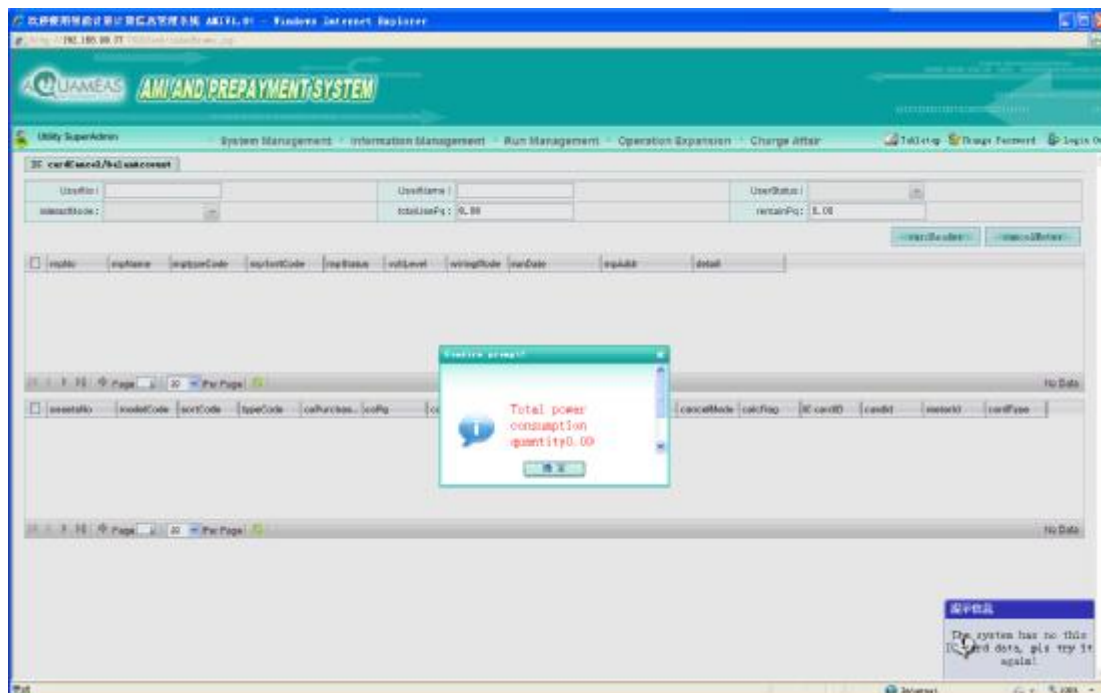
Ø  Card Loss Report/Make Up

♣  Operating Steps

1. Click on【Business Expansion】->【IC Card Business】->【Issue Card Management】 menu, enter into the page of issue card management as above;

2. Click on [icon] icon into the page of user query, and select the user records which need to be operated as follow

Page of user selecting functions

3. Back to the main page of IC card loss report/make up, pitch on in the listing of user information(after pitching on ,the listing of user metering point will display the detailed records of this energy meter all belonging to this user with already issued card)

4. Pitch on the record of card loss report/make up which needs to be done in the listing of metering point information ,first click on〖Loss Report〗button, then click on【make up】button, operation finished。



5.

## 5.1.3 Account Cancellation for Settlement (card)
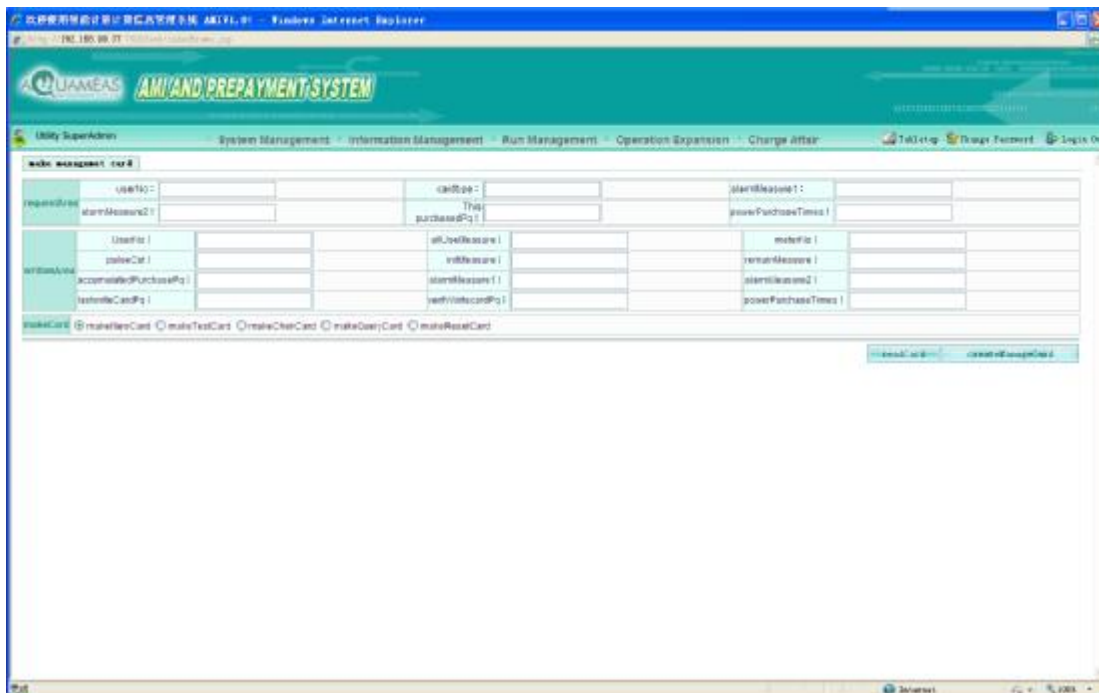


Page of Account Cancellation for Settlement

Ø   Card Loss Report/Make Up

🔸   Operating Steps

1. Click On【Business Expansion】->【IC business】->【Account Cancellation for Settlement】 menu, enter into the page of issue card management as above;

2. Insert user power purchase card into the card reader，click on【card reading】button，which will display the prompt input box. If need to cancel an account, then you should input account opening password of user. Click on【confirm】button into the page of account opening. If to cancel, then click on【cancel】button；

3. Pitch on records which need to be operated in the listing of user

4. pitch on records of account cancellation for settlement which need to be done in the listing of meter information.
   Click on【Making account cancellation card】button，which prompts making account cancellation card get success；and give this card to the user；

5. User will insert account cancellation card into the energy meter，then energy meter will trip out and warning lights；

6. Users take this account cancellation card to the business hall for cost balance；

7. Clerk gets account cancellation card of this user to use and enter into function page of account cancellation for settlement. At first insert IC card into card reader. Click on【card reading】button（Prompt box will display this total power purchase quantity and the remaining power quantity），click on【confirm】button；

8. The same operating steps as 3，4；then click on【meter cancellation for settlement】button，prompt settlement，at the same time click on【account cancellation for settlement】button；if need to print a receipt, then pitch on print；

9. This account cancellation card continues saving the last meter information after cancelling an account. If to use this card again, it is necessary to enter into 【Business Expansion 】 -> 【Making Card Management】 to make this card as a new card.

# 5.1.4 Making Card Management
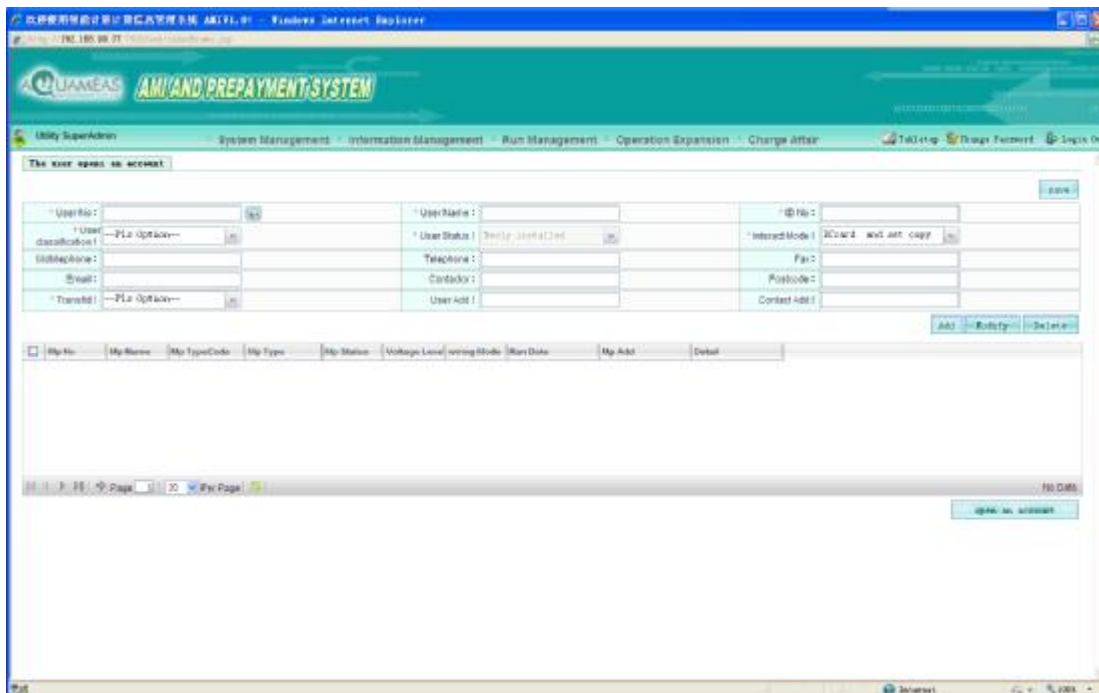


Page of Making Card Management

Ø   Making Card Management

⚜   Operating Steps

1. Click on 【Business Expansion】 -> 【IC Business】 -> 【Making Card Management】 menu ,enter into the page of issue card management as above;

2. Insert IC card into card reader, and connect card reader with pc, then select the needed make type, click on 【making card】
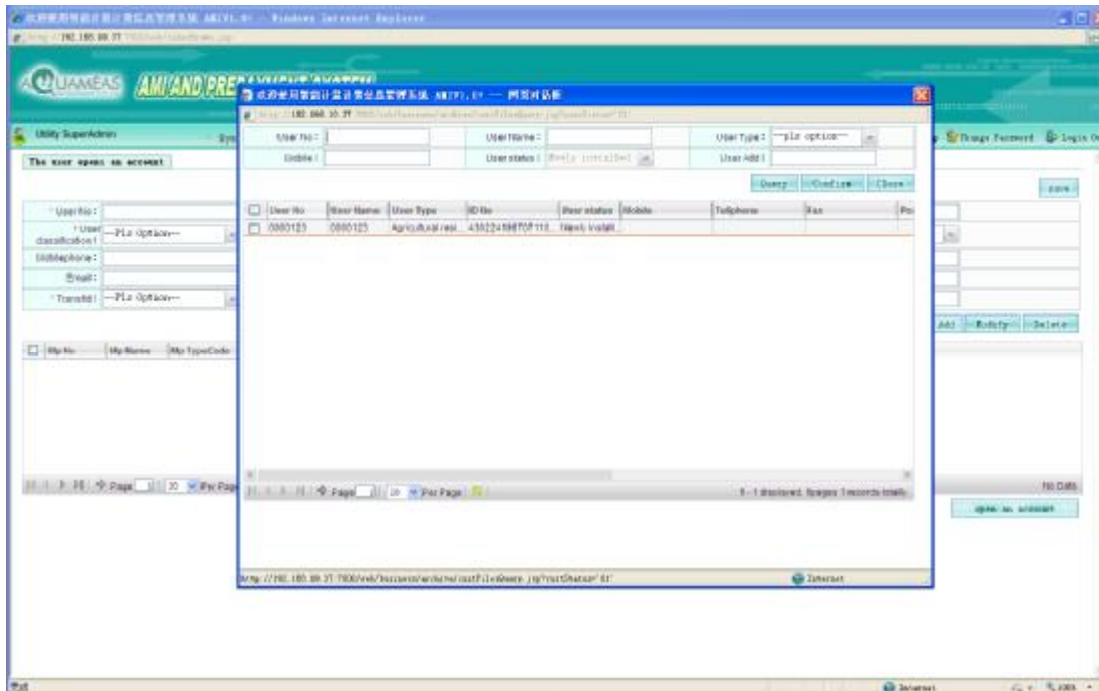
# 5.2 User Business

# 5.2.1 Open an account

Account opening functions including modification of user information, add, modification, deletion of metering point and account opening function.
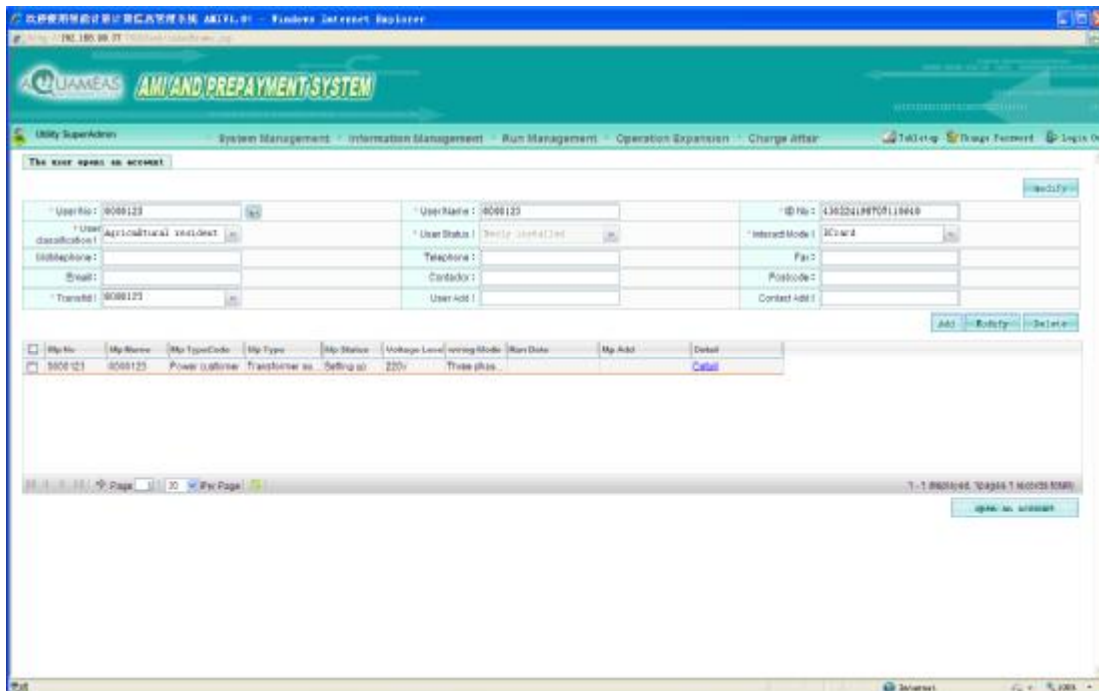
## Modification of User Information

➕ Operating Steps

1. Click on【Business Expansion】->【User business】->【Open an account】menu, enter into the page of opening an account as above;



2. Click on  icon ,enter into the page of user screening as follow;

3、Fill in the corresponding query condition，click on【Query】button，filter out the users。tick the check button in front of records，click on【confirm】button

4、Type in the needed modification information in the area of red border as below，click on 【modification】button，save operation to the modified contents.
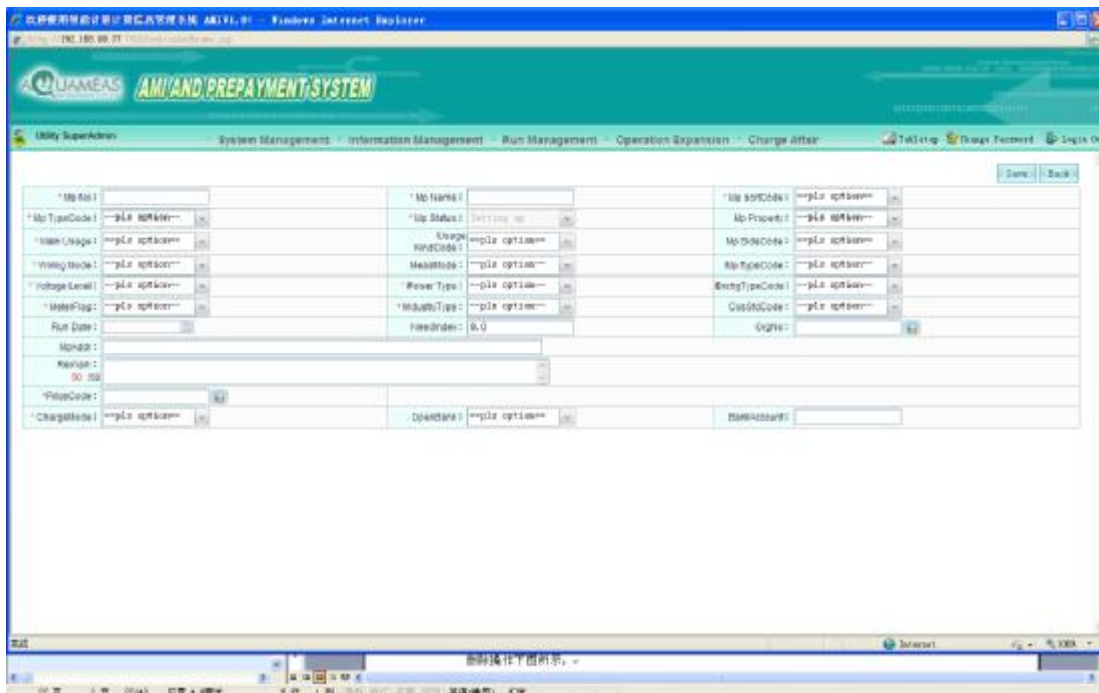


〖Rule Description〗

Ø    Add user in the【Archives Administration】à【User Archives】à【User Management】，need to open an account here for activation.

Ø    User of opening an account should be a newly-installed user.

Add of Metering Point

    Operating Steps

1. Click on【Add】button，enter into the page of add function as below；

2. Input metering point information，red with* are required attribute；

3. Click on【Save】button，finish add operation。

Ø    Modification

✚    Operating Steps

　1 Click on the needed modification【modification】button, as below.

　2 Input the needed modification information，click on modification button, finish the modification operation.

Ø    Deletion

✚    Operating Steps

　1. Select the needed modified metering point information in the function page of metering point listing.（Note：In the gauge outfit of the need modified information, pitch on

　information like ☑ ）；

　2. Click on【Deletion】button，Popping out the prompt of deletion confirmation；

　3. If It is sure to delete，in the prompt box, click on【Confirm】button；If this is no need to delete, click on 【Cancel】button；finish deletion operation as below。

　4. If the status of metering point is in use，it will pop out the prompt as below. click on Confirm, back to the page of user listing。

〖Rule Description〗

Ø    Only is the metering point under setting up can be deleted

## 5.2.2 Cancel an account
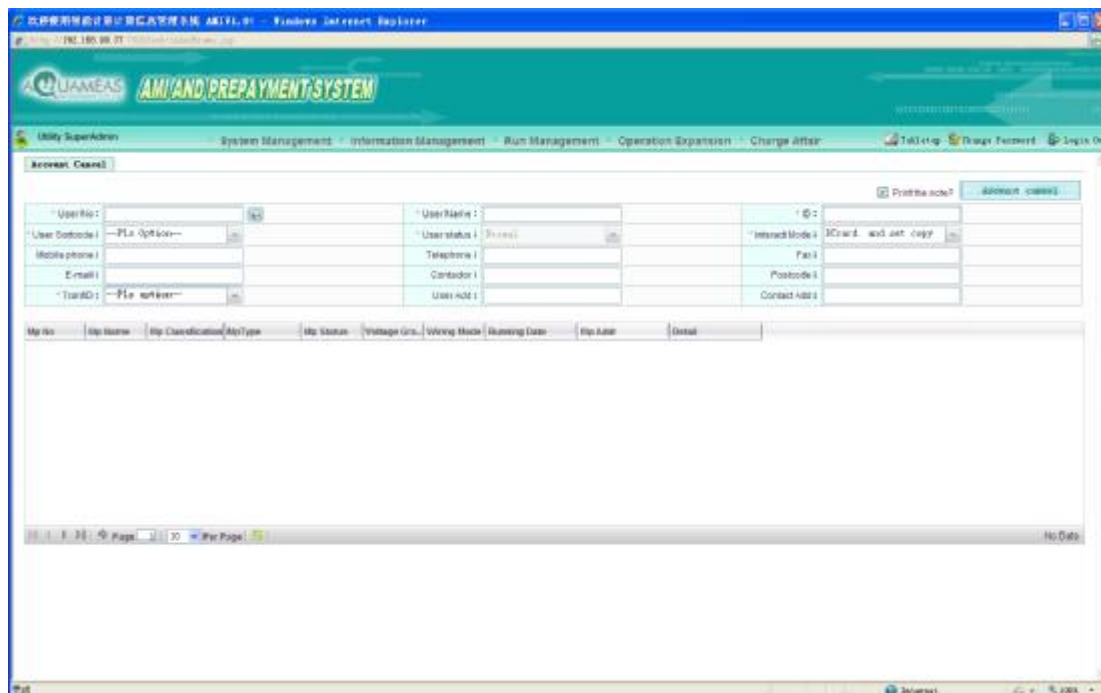


- **Operating Steps**
    1. Click on【Business Expansion】->【User Business】->【Cancel an account】menu, enter into the page of remote reset as above;

    2. Click on ![icon] icon beside user No., enter into the page of user screening as below;
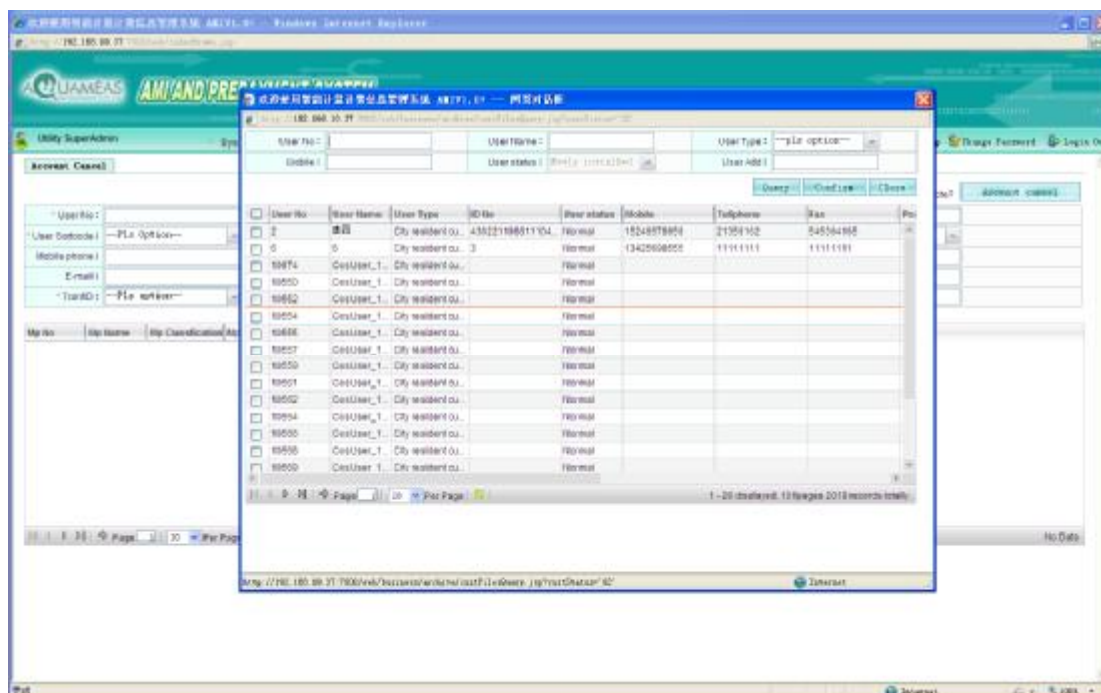


3、Fill in the corresponding query condition，click on【Query】button，filter out the users。 tick the check button in front of records(inside the area of red border on the left as below，

click on【confirm】button

4、Click on【Cancel an account】button to operate account cancellation. If there is no need to print, then take out the tick in front of whether to print a receipt
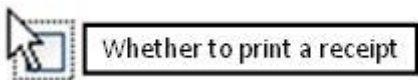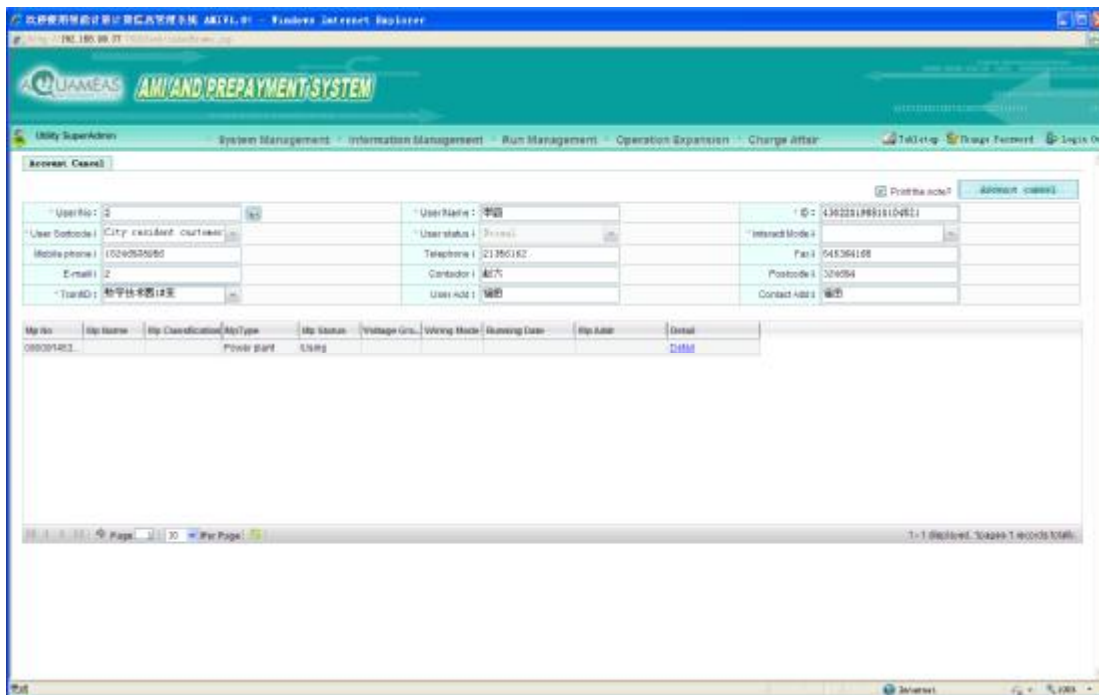
as  。



〖Rule Description〗

Ø    User with this operation must been finished account opening.
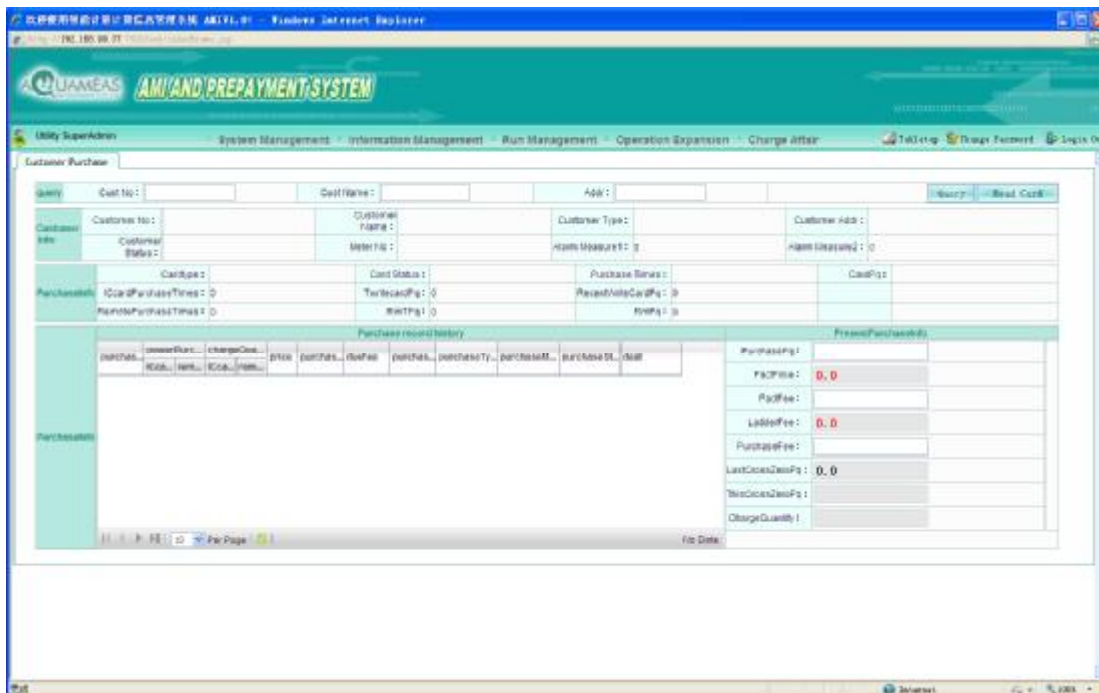
# 6. Billing Module

Billing accounting module has function operations including calculation of charges、charges collecting、charges check、and charges settlement report forms, etc .
Its main functions as below：

## 6.1 Power Purchase Management

Provide IC purchase、IC card dispatching purchase、remote purchase、remote dispatching purchase、recover purchase、purchase print、purchase information、ladder supplement charges collecting functions, and so on.

Ø　Power Purchase Management

✚　Operating Steps

1. Click on【Billing Accounting】->【Purchase Management】，enter into the page of purchase management as above

2. If the user take IC card to purchase，at first the user should connect card reader with pc，and insert one side with touch point of IC card upward into card reader，click on 【card reading】button，the page will show the detailed information of this user and history record of purchase.

3. Input power purchase quantity or power purchase amount（both system automatically conversion according to price）Click on【IC card purchase】button；

## 6.1.1 Purchase Daily Balance

Users click on menu【Billing Accounting】à【Purchase Check】à【Purchase Daily Balance】,enter into query page of purchase daily balance as below.
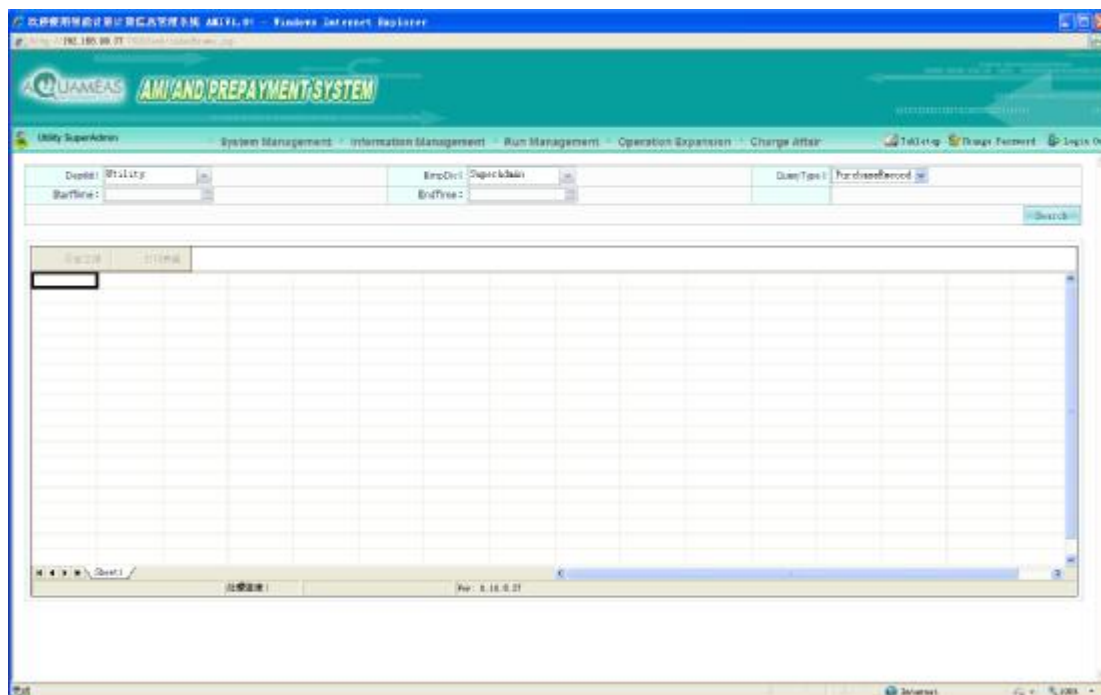
- Operating Steps；
-

1、Input the corresponding search condition，click on【Query】button；filter out the query result.

2、Click on【Export File】button，popping out the save dialog box, input the file name，select the path of save，click on【Save】button，finish export operation.

3、Click on【Print report form】button，popping out print setting dialog box，click on【print】button，finish print operation.

## 6.1.2 Query Record of Purchase

Users click on menu【Billing Accounting】à【 Purchase Check】à【Record Query of Purchase】Enter into the page of record query of purchase as below

- Operating Steps；
  1. Input the corresponding search condition，click on【Query】button；filter out query results. If it is needed to check the details, click on the blue link of〖Detail/Operation〗in the listing, popping out the page as below；



2、Click on【Close】button，back to the page of record listing.