

The description of the idea.

I propose to use a "random generated number" during any credit card's operation.

Let's assuming that there is a microchip embedded into a credit card.

The microchip embedded into the card will have a program which can calculate a "random number". The calculated number will be used as a verification number of card's holder.

The number will be sent to a bank where it will be compared by computer with "bank verification number".

Equality of the numbers would mean conformation of cards and operation validity.

The "random calculated number" and the program.

The number is to be calculation of a mathematics formula:

Number = $PF(A,B,C,S1,S2)$, where

PF- a periodic function, for instance SIN (of course it should be a bit more complicated)

A, B, C are parameters which should be day, time, and sum of money.

S1,S2 are a "secret parameters" which will be given by a bank

(The parameters may not be known by anybody even a card's holder)

Each card's holder will have a unique program and the parameters will be responsible for it if functions are the same for instance.

Since the function is a periodic one, it will give different value for any new A,B,C parameters. It would be very difficult to predict a new "random calculated number" even knowing a few previous calculation, since the function have to be know prior.

So the number will work as conformation of card's validity.

The chip's program will run the function, however before the calculation it will also check a PIN number to avoid a possibility of unauthorized using the card.

The card structure.

The card will have a memory microchip where the random calculation number program is going to be recorded.

Also the card has a metal contacts which will allow it to be connected with an internal devices. See pic1.

The card operation.

To get the random calculated number a card's holder will have to use an additional device – a calculator. The calculator can be any simple scientific calculator, but it must have a port for a credit card connection. See pic2.

The calculator may not be expensive device since it can not be more complicated than a basic scientific calculator.

Using the card.

The card will be issued to a customer by bank in the same way as it happens nowadays, of course all present requirement should be kept in force. However just before be issued the card 's random calculated program will be recorded on PMOS (or EMOS) microchip. The operation will take only a few minutes. And in the same time the same random calculation program will be recorded on bank's computers.

Also the card's owner will receive a PIN number.

So the card will be ready for use.

A card's holder will use the the "improved card" everywhere in the same way as the holder uses a usual credit card nowadays. However the card's holder will have to submit the random calculated number in a shop or restaurant paying for bill.

There is no reason to carry the "card's calculator" everywhere, since shop and restaurant will be responsible for having it (it's insignificant expenses). But card's holder will have to have the device at home for on-line shopping activity.

The calculated number will be send to the bank (together with all data –day, time, and sum of money) where it will be compared with the number calculated based on received data by bank's program.

The bank's program must be kept with high security precautions.

If the numbers are the same then the payment will be approved.

Of course the all the present security provision have to stay in force

And the card should lose validity if lost or stolen as soon as possible.



The claim

The only claim of the innovation is to improve security of credit cards operation and prevent possibility of unauthorized using of credit cards.

The abstract

The present system of credit card operation is not secure that is why there are so many cases of stealing money from credit card 's holders all over the world.

The main drawback of present system is that all credit card data are "fixed" therefore all owner's information may be collected (stolen) step by step. It's unnecessary to note that the credit card information or user personal data are not really secure since they have to be used, submitted quite often.

The proposed idea may help to improve security since it will make some credit card's data "control alterable".

New card will have an embedded microchip and card's owner will use a "random number" at any credit card operation.

The "random number" will be calculated with program which will be kept on the embedded microchip.