Jrsys Mobile Banking Solutions

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Mobile PKI solutions

1. Mobile CA
2. Mobile RA
3. Mobile Signing and Validation Service
4. Secure Single Sign On
5. OTP Server
6. Mobile Secure SDK
7. PKI+OTP Java Applet
Mobile Security Solutions

1. Mobile CA
   - Setup CA to issue certificates

2. Mobile RA
   - RA to connect to current CA

3. Mobile Signing and Validation Service
   - Verify the PC/Mobile Digital Signature
   - Digital Signature Log Service

4. Secure Single Sign On
   - User management with PKI future

5. All in One OTP Server

6. PKI+OTP Java Applet+Mobile Secure SDK
PKI for Bank

- Setup Root CA
- Setup SubCA
- Setup RA
- Setup MSVS(VA)
- Issue certificates
  - PC Smart Card
  - Mobile Smart Certificates
    - Secure Micro SD
CHT WebTrust Mobile RA

Chung Hwa Telecom WebTrust CA certified RA
All in One Cloud Authentication

All in One Authentication Service:
ID/Password, OTP, Smart Card, Mobile Slim SIM and Micro SD.
Secure Single Sign On

◆ Secure ID/Password
  - Kerberos base Challenge/Response password authentication
  - System administrators, hackers cannot get the user's password

◆ All in one simple Single Sign On
  - Distributed Web base Active Directory management can easily provision million users
  - Support ID / Password, One Time Password, Smart Card PKI or Fingerprint logon

◆ Multi-platform support
  - Easily integrate with existing Portal and enhance the security
  - For PC, Android, iOS users
  - Support different application using various programming languages under Windows, Linux, Unix, AIX, …
  - Support cross Domain, Platform authentication and authorization
3 million bank accounts hacked in Iran

**Summary:** First, he warned of the security flaw in Iran's banking system, providing them with 2,000 bank account details. When they didn't listen, he hacked across at least 22 banks.

**Update:** Google kills Iranian blog with 3 million hacked bank accounts

After finding a security vulnerability in Iran's banking system, Khosrow Zarefard wrote a formal report and sent it to the CEOs of all the affected banks across the country. When the banks ignored his findings, he hacked 3 million bank accounts, belonging to at least 22 different banks, to prove his point.

It does not appear as if Zarefard stole money from the accounts. Instead, he used the hacked information to potentially gain unauthorized access to the financial systems of these banks.
Traditional Dangerous Authentication

- Hacker can sniffer users’ passwords
- Penetrate the SSO can get all users’ passwords
- Send ID and Password to Cloud
- Cloud Service
- Database
- Bad administrator will be the disaster
- Obtain account and password by compromised database

90% of the Single Sign On are not secure!

Web base only! No Client/Server No Cross Domain No Cross Platform
Hacker sniffer your ID/Password

Sign in

MyID

Password

Sign in

Man in the Middle
Secure Single Sign On

- **Hacking the SSO Server cannot get any user’s password**
- **Bad administrator cannot get user’s password**
- **Even if AP1 is compromised, other APs will not be affected**
- **No ID/PWD**
- **No UID**
- **Mobile PKI Mobile OTP**
- **Server generate a random challenge**
- **User decrypt the random challenge by his password then build up a secure channel with SSO server**
- **Once for all, support Web base and Client/Server Cross Domains, Cross Platforms, Cross Programming Languages**

- **AP Servers**
  - AP1
  - AP2
  - AP3
Active Directory Web Administration

◆ **User Management**
  - ID, Account Info, PKI certificates, OTP or BIO data
  - Insert, Update, Delete and transfer to other organization
  - Reset password
  - Activate/ Deactivate user

◆ **Group Management**
  - Insert, Update, Delete, Move

◆ **Application management**

◆ **Role management**

◆ **Event Log**
All in One OTP solutions

Low cost solution

- Slim SIM OTP
- SMS AOTP
- OTP APP
- QR code OTP
- MicroSD OTP
- jrsys OATH OTP Server
- OCRA OTP
- Android Token
- iOS OTP
- e-Ink Display Master Card
- OTP Token

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OATH OTP Server

OTP Management Server

Management
- Token Register
- Token Management
- Token Issuer Management
- Application Management
- Operation Log
- Statistical Report

OTP
- Otp Verify Service
- Token Resynchronization Service
- OTP Verify Log

Application Id:
Token UID:
OTP:
Challenge Value:

Verify

Challenge-Response Verify

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- JRSYS PJC - 2010/10/08 updated
Secure PC/Mobile SDK

Your Software Application

ERP
Enterprise Resource Planning

Human Resource Management

Customer Relationship Management

Supply Chain Management

Financial Resource Management

Jrsys All in One Secure PC/Mobile SDK

Jrsys Security Suites

Jrsys Secure Mobile Token

USB PKI Token
Smart Cards USB PC/SC reader
Secure MicroSD
Android/PC Dual USB
PC USB
Android Micro USB
iOS/PC Dual Token
iOS PC
Bluetooth Reader
Software PFX

Jrsys Middleware

Your Application can work with Secure Devices

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Mobile Payment
Complete Payment Solutions

- **Smart Phone**
  - QR code payment
  - Secure NFC Mobile POS
    - Build in Secure Micro SD
Jrsys is one of the 7 innovative ideas to provide greater access to financial services from 98 best ideas of 26 countries.
The evolution of financial card

- Magnetic stripe cards, Chip cards, Secur Micro SD

1st generation

2nd generation

3rd generation

- Improve the Security level
  - Magnetic stripe cards: Easily to be copied
  - Chip card: Symmetric key / Native OS/Java OS
  - Secure MicroSD: PKI card / Java OS
Secure T-Flash Micro SD

CC EAL 5+ certified Secure Element

Secure Mobile Applications
Secure PDF
Secure e-Mail
OTP/PKI
SMS/VOIP

Mobile Wallet
Mobile POS
Mobile Money

Digital Signature /Encrypt/Decrypt

Java Card Operation System

Secure Element

Certificates

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jrsys NFC Mobile POS

• Issue US$1 NFC card to user for contactless payment
• Mobile phone as a POS for any shop to Top-up or Debit the NFC card
1. Consumer buy goods

2. Merchant use Mobile POS with Secure MicroSD to generate the transaction QR code

3. Consumer take the QR code and input his PIN code to confirm the payment then send to bank

4. Merchant push order confirmation to merchant

Secure QR code Patent pending
Encrypted Bill/ e-Invoice

- Encrypted Bill Cloud Service for Enterprise, Bank
  - Telephone bill, Bank Statement, Salary, Invoice, …
- Document can only be decrypt by the registered Mobile phone

1. Download APP
2. First time registration by Short code SMS and 3G/4G network

The document can only be Decrypt by this Phone with right PIN code

Encrypted Bill Cloud

- jrsys Secure PDF Encryption Service
- jrsys Secure PDF management Server

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World first Android/iOS MicroSD Secure PDF

jrsys Mobile/Cloud Security Products

Signed and Encrypted PDF by Hardware Secure Element

Secure Micro SD & Bluetooth Smart Card Reader

Joint developed by jrsys & Foxit
Partner of Google, Amazon, Microsoft and HTC.

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Secure PDF

Worldwide over 150 Millions happy users
Tiny and Fast PDF reader than Adobe
Microsoft RMS preferred PDF reader
1. Mobile CA
2. Mobile RA
3. Mobile Signing and Validation Service
4. Secure Single Sign On
5. All in One OTP Solutions
6. Mobile Secure SDK
7. Secure MicroSD, PKI/OTP tokens
8. Mobile POS+NFC card
9. Secure Bank statements
Jrsys Secure your Mobile Life

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2013/7/12 before Typhoon