

Biometric Authentication Systems

An Introduction To Biometric
Authenticated Transaction Systems

Innoviti Embedded Solutions

Agenda

- **What are biometric authentication systems?**
- **Steps in using biometrics**
- **VeriFone-Innoviti products**
- **Next steps**

What Are Biometric Authentication Systems?

- **Systems that use biometrics - fingerprints for verifying user identity**
- **Used for preventing fraud**
- **Also used as identity in markets with low literacy levels**
- **Once user is identified, transaction is processed as usual**

Steps In Using Biometric Systems

Steps In Using Biometrics

- **Addition of biometrics to a transaction process requires three steps**
 - Enrollment
 - Storage
 - Verification

Enrollment

- **Process of capturing customer demographic data (name, age etc.) and fingerprints**
- **Associating data with customer ID**
 - Minimum 4 fingers data are used
 - PC based application with USB biometric sensor used



Storage

- Process of storing customer enrollment data for use during verification
- Fingerprint data storage
 - On smart card for **offline** verification
 - On server for **online** verification
- Data moved from enrollment to storage through LAN, media

Verification

- **Process of matching a live fingerprint with a stored fingerprint retrieved based on customer ID**
- **POS devices for verification**
- **If storage on card, verification offline**
- **If storage on server, verification online**

Typical Usage (Offline Verification)

- Customers enrolled and provided **smart cards** with fingerprints
- Customer wants to transact...
 - Puts finger on POS terminal sensor
 - Enters ID (or enters card with ID)
 - POS verifies if **live fingerprint** matches with that **stored on card**

Typical Usage (Online Verification)

- Customers enrolled and provided ID
- Customer **data** stored on **server**
- Customer wants to transact...
 - Puts finger on POS terminal sensor
 - Enters ID
 - POS **connects to server** and **verifies live fingerprint** with that stored on server

Transactions

- After authentication transactions can be processed as usual
- Transactions: payment, savings, insurance, loans, pre-paid cards etc.
- Transactions can be offline or online based on business requirement

Offline?

Offline transactions can be faster, more reliable. However they need an End-Of-Day settlement to synchronize server

VeriFone-Innoviti Products

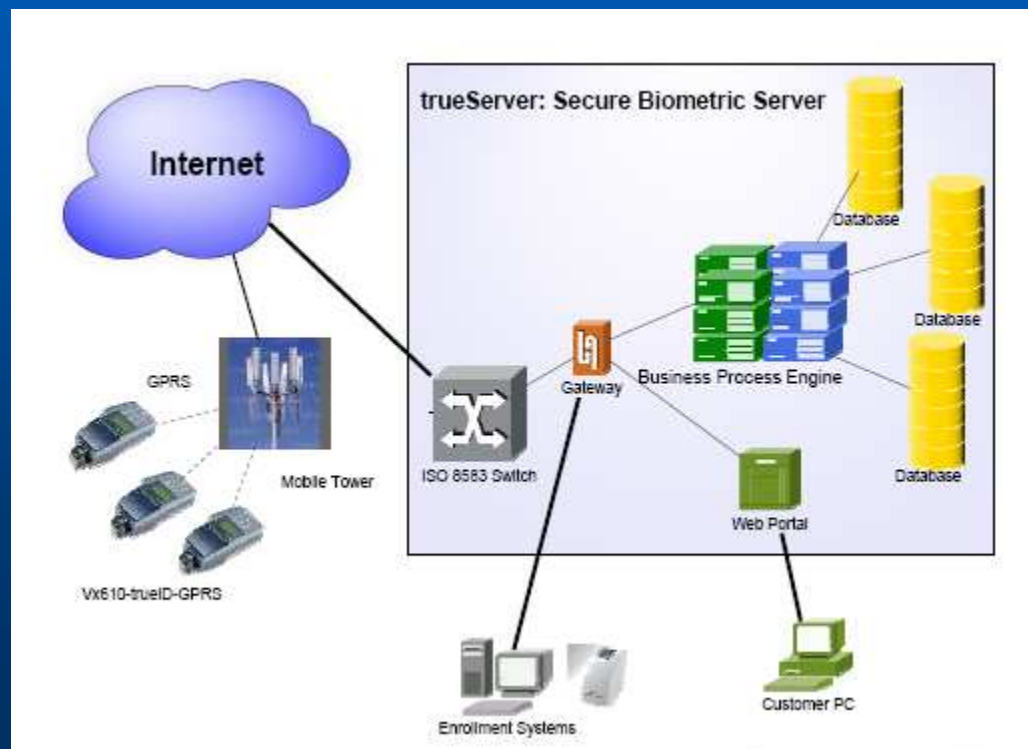
Enrollment System

- SFR 300: USB sensor for enrollment
- SDK for PC based application creation
- Custom applications can be developed on request



Storage System

- trueServer: Secure Biometric Server



Storage System...

- **Allows POS and Web access for transactions and administration**
- **Transaction history available**
- **Stores fingerprints in 128-bit encrypted format**
- **Connectivity to mobile and Internet for alerts, mobile transactions**

Verification and Transaction Processing System

- **Two models**
 - Dial-up: Vx610-trueID
 - GPRS: Vx610-trueID-GPRS
- **Biometric compatible with enrollment**
- **Portable system with high capacity battery**
- **Based on VeriFone's leading Vx610 platform**



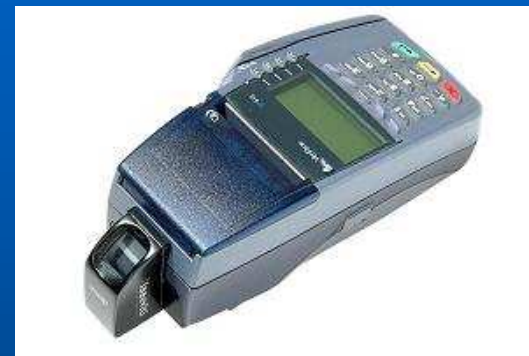
Next Steps

Next Steps

- **System design requires understanding of**
 - End user scenario
 - Fingerprint verification: online/offline
 - Transactions: online/offline
- **Demonstration of biometric authentication through demo system**

Demo System

- Vx610-trueID-GPRS
- Demo application
 - Enrollment
 - Verification
- Storage on Innoviti hosted trueServer
- GPRS connection
- Server transactions
 - Enrollment view
 - Verification attempt view (success/failures)
- Cost: USD 1000 per kit



TEMPLATE ID	USER ID	USER NAME	USER IMAGE	LAST VERIFIED ON	STATUS
9	9443073933	Ramesh Chauhan		2008-05-01 11:36:00.412	PASS
8	9563667050	Ranbir Murthy		2008-04-30 19:26:50.917	FAIL
7	9562223642	Suresh Kumar		2008-04-30 19:02:41.448	FAIL
6	9562223642	Suresh Kumar		2008-04-30 19:01:19.152	PASS

Thank You

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