

CONTROLLING YOUR BANKING AND PAYMENT SYSTEMS

TOP SECURITY MEASURES



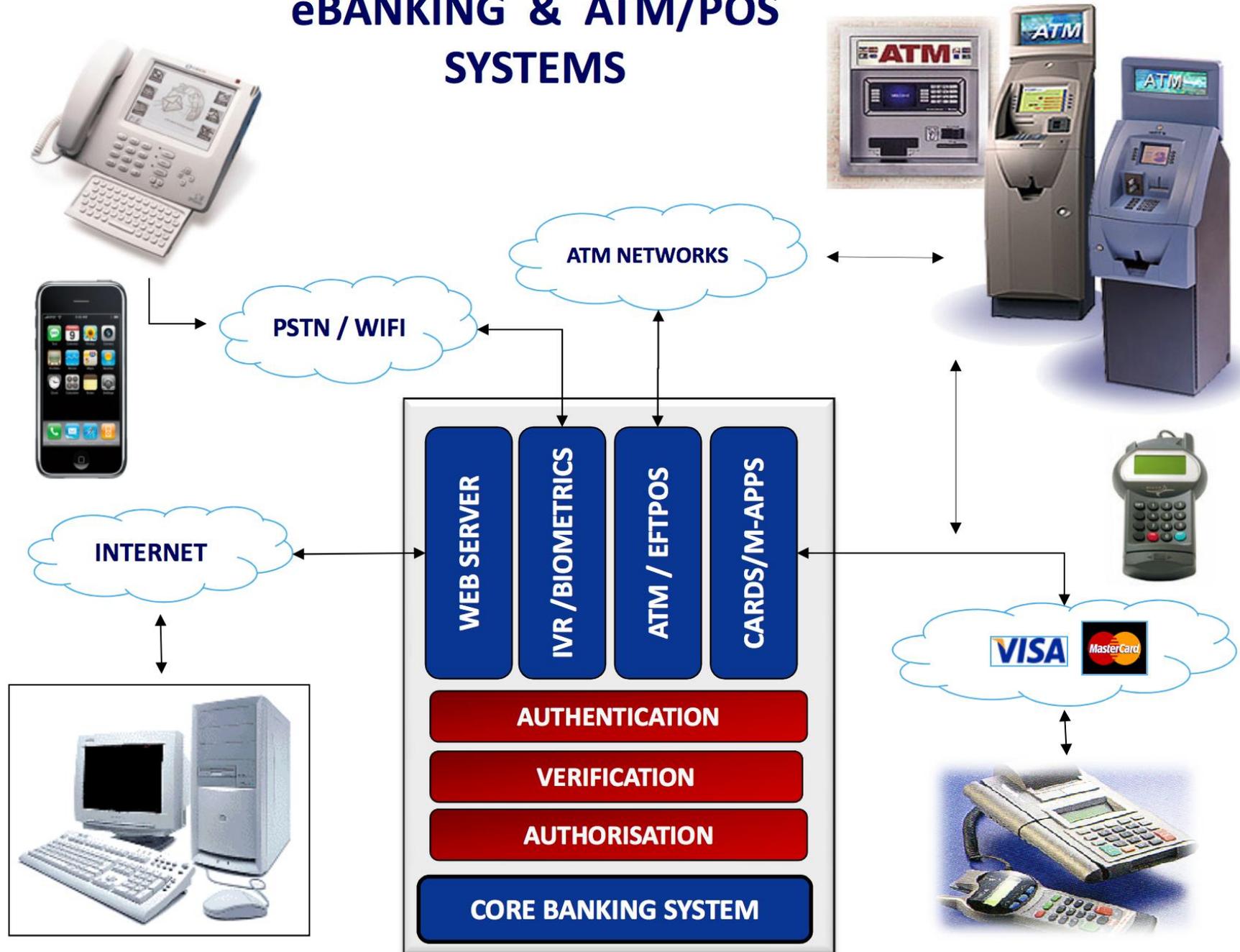
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V-Key (Singapore)

16 May 2017

eBANKING & ATM/POS SYSTEMS



WHY WE NEED CRYPTOGRAPHY

The only known practical means of protecting data in a communications network.

System security tool for online banking, payments e-commerce and m-commerce to achieve:

- a) confidentiality
- b) integrity
- c) authentication
- d) digital signature



No password is secure
regardless of its
complexity, length and
change frequency.

P@\$\$w0rd Hacking



A dramatic, dark, and stormy sky with heavy, grey clouds. The bottom edge of the image shows the dark silhouettes of trees and a utility pole against a slightly lighter horizon.

HOW MASSIVE IS PAYMENT CARD FRAUD?

What is the role of cryptographic security?

Platinum

4321 5678 9012 1234

4321

VALID DATES

08/98 - 08/31/00

JOSEPH SMITH

System
Number

Bank
Number

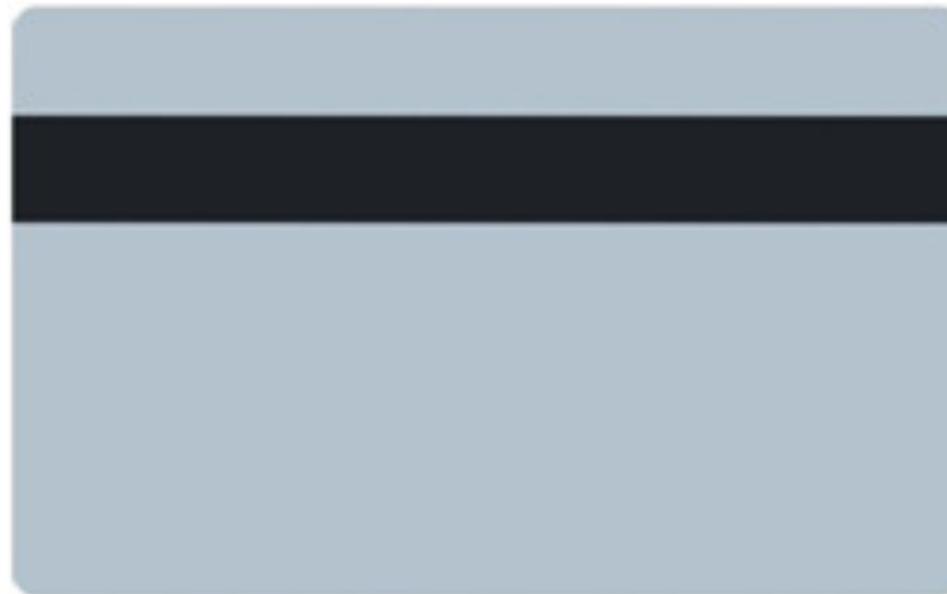
Account
Number

Check
Digit

ANATOMY OF A MAGNETIC STRIPE

; nnnn nnnn nnnn nnnn = YYMM SVC DDDDDDDDCVV X

Start Card Number Separator Expiry Date Service Code Discretionary End



THE ACHILLES HEEL OF PAYMENT CARD SECURITY

CHIP AND MAGNETIC STRIPE



The chip cannot be cloned



The magstripe is easily cloned

MasterCard. Prepaid

5412 7512 3412 3456

5412
12-16
LEE M. CARDHOLDER



\$45 MILLION ATM HEISTS

40,500+ TRANSACTIONS | 27 COUNTRIES | \$45 MILLION IN LOSS



NEW YORK CELL
\$2,800,000

RAKBANK CYBERATTACK
SEPTEMBER 22, 2012 @ 2:40PM - 5:05PM
40,500+ TRANSACTIONS | 20 COUNTRIES | \$5 MILLION IN LOSS

BANK OF MUSCAT CYBERATTACK
FEBRUARY 19, 2013 @ 3:00PM - FEBRUARY 20, 2013 @ 1:26AM
36,000+ TRANSACTIONS | 24 COUNTRIES | \$40 MILLION IN LOSS



Note: acquiring bank layer is not shown



Note: acquiring bank layer is not shown



\$5M



\$40M



MAS Payment Card and Online Banking Security Enhancement Roadmap

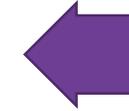
	2010				2011				2012				2013				2014			
	1Q	2Q	3Q	4Q																
DDA Credit/Debit Chip Card Migration	█	█	█	█	█															
DDA ATM Chip Card Migration	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
One Time Password for Card Not Present	█	█																		
New/Replacement Card Activation	█	█	█	█	█	█	█	█	█	█										
Cessation of Domestic Magstripe Transactions for Credit/Debit Card	█	█	█	█	█	█	█	█	█	█										
Transaction Alerts	█	█	█	█	█	█	█	█	█	█										
Deactivation of Overseas Cash Withdrawal for ATM Card	█	█	█	█	█	█	█	█	█	█										
Transaction Signing for Online Banking	█	█	█	█	█	█	█	█	█	█	█	█								
Deactivation of Overseas Use of Magstripe for Credit/Debit/Prepaid Card	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█					

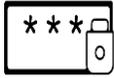
DDA: Dynamic Data Authentication ATM: Automated Teller Machine

Mobile App Security



- Device Binding 
- Jailbreak and Root Detection 
- Device encryption 
- Secure Storage 
- Push Notification 
- Geolocation Fencing 



-  Face Authentication
-  Voice Authentication
-  Fingerprint Authentication
-  Iris Authentication
-  One-Time Password Authentication
-  Transaction Signing

The Future of Digital Security



The future of digital banking is mobile banking based on the omnipresent smartphone

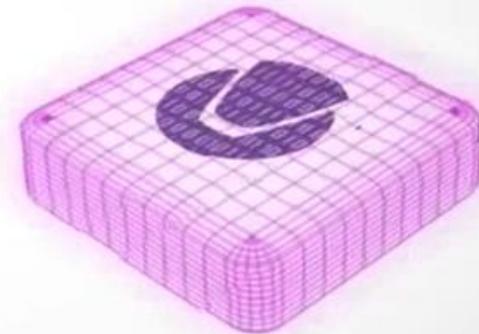
The future of digital security for mobile banking and payments is biometrics

Together, the smartphone and biometrics will change the way we do banking and payments



V-OS

THE WORLD'S FIRST
VIRTUAL SMART-CARD CHIP

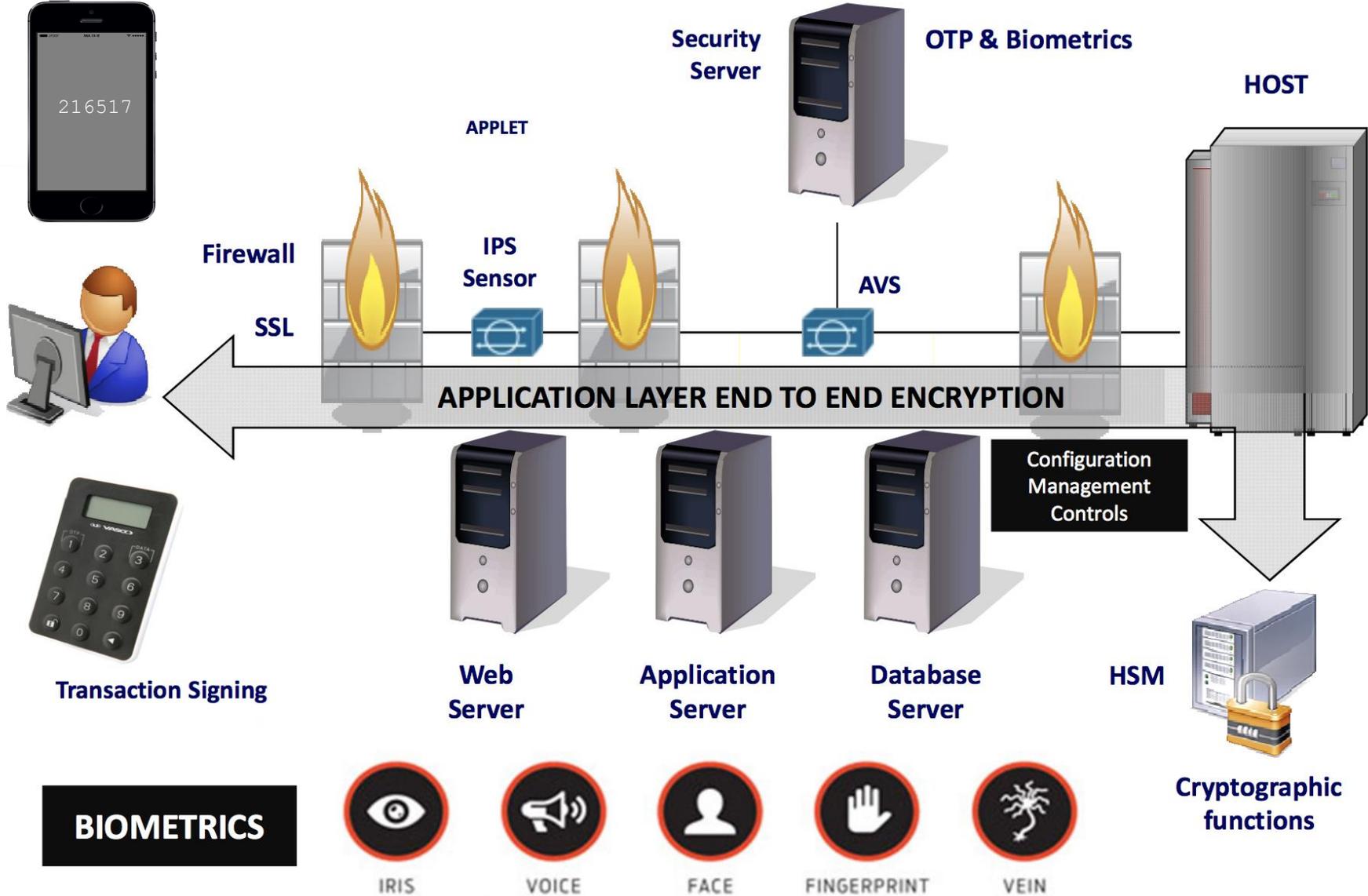


IVM Accredited 

Trusted. Certified.



ONLINE BANKING SECURITY ARCHITECTURE



BIOMETRICS



IRIS



VOICE



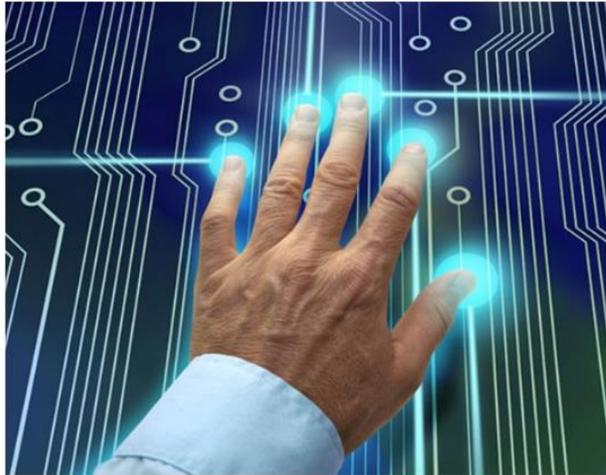
FACE



FINGERPRINT



VEIN



Deployment of Biometrics in Banking



Finger Vein



Palm Vein



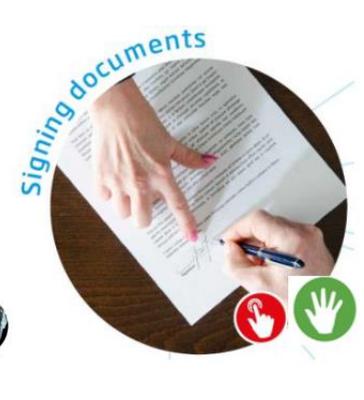
Voice



Fingerprint



Face





Thank You

For any enquiries, please contact us at enquiries@v-key.com