

Access Control System

Technology Forum – Smart City Infrastructure

Matrix Research Limited

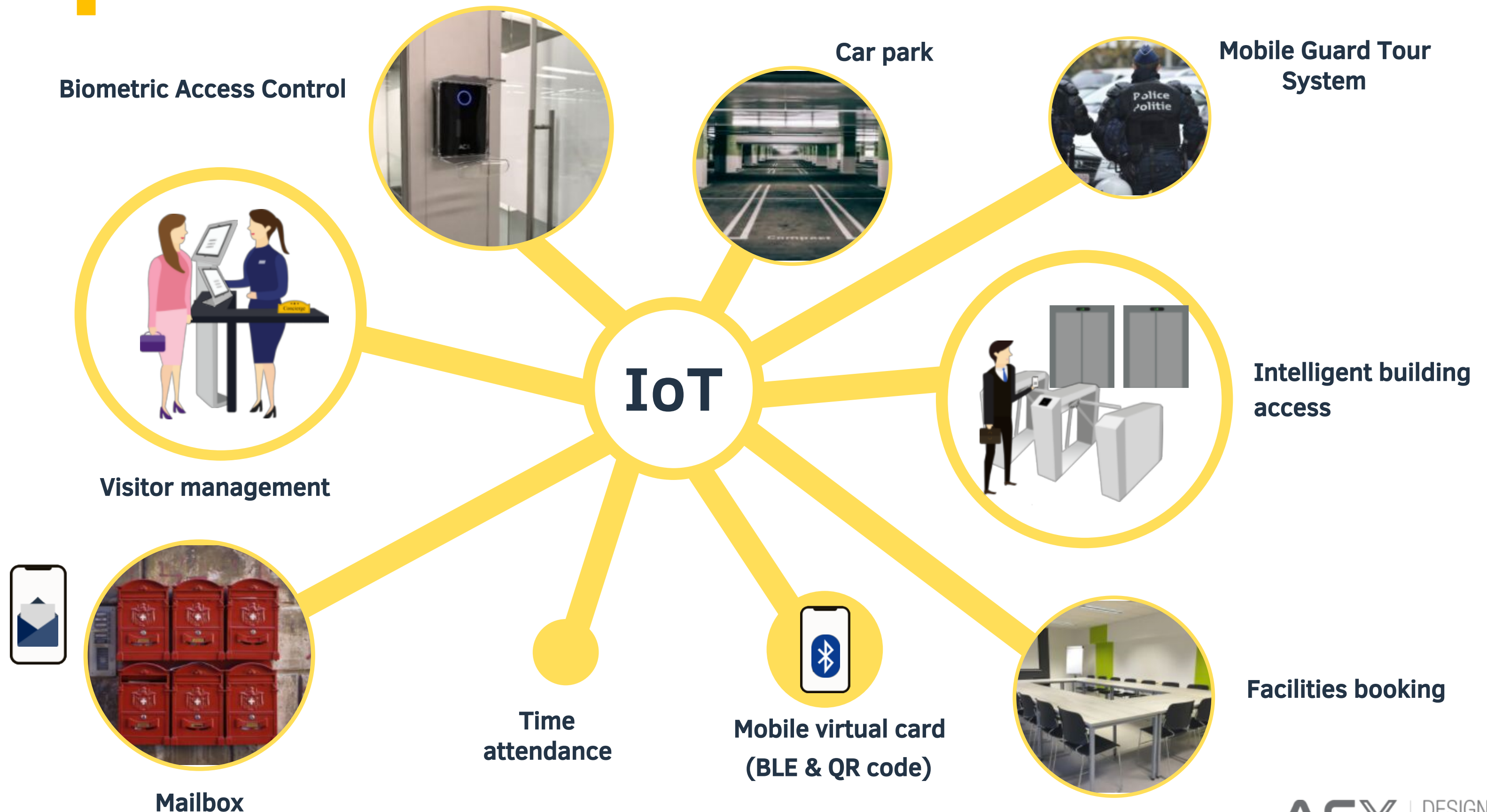
COMPANY INTRO

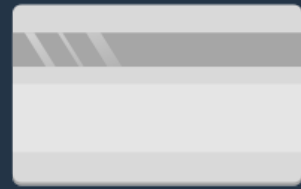
Matrix Research Limited

- Over 25 years of experience in product development, system design and implementation for biometric, mobile virtual card and contactless smart card solutions
- Original R&D software and hardware products
- Runs offices in Hong Kong Science Park and mainland China, Guangdong province
- **ACX** is the product brand of Matrix Research Limited



Comprehensive IoT Access Control System

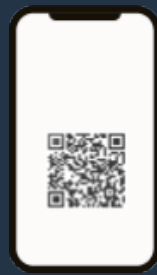




Contactless RFID card



Bluetooth



QR code



*Facial recognition



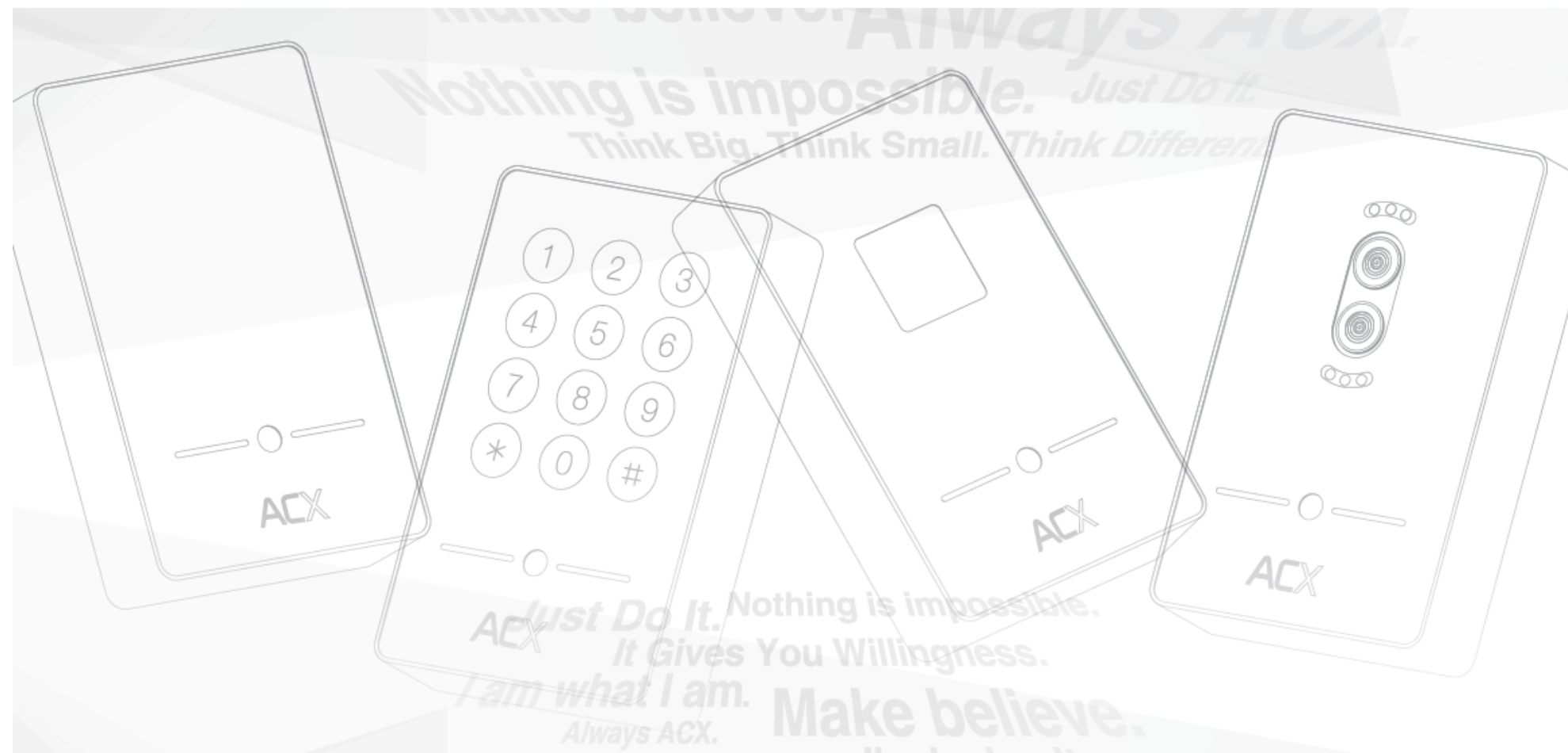
*Palm Vein



Competitive Advantages

Multi-technologies Reader

Our multi-technologies readers offer a 4 in 1 variety of access options, built-in Contactless smart card, Bluetooth and Scramble QR code, additional features for **PIN**, **Palm Vein** or **Facial Recognition**.



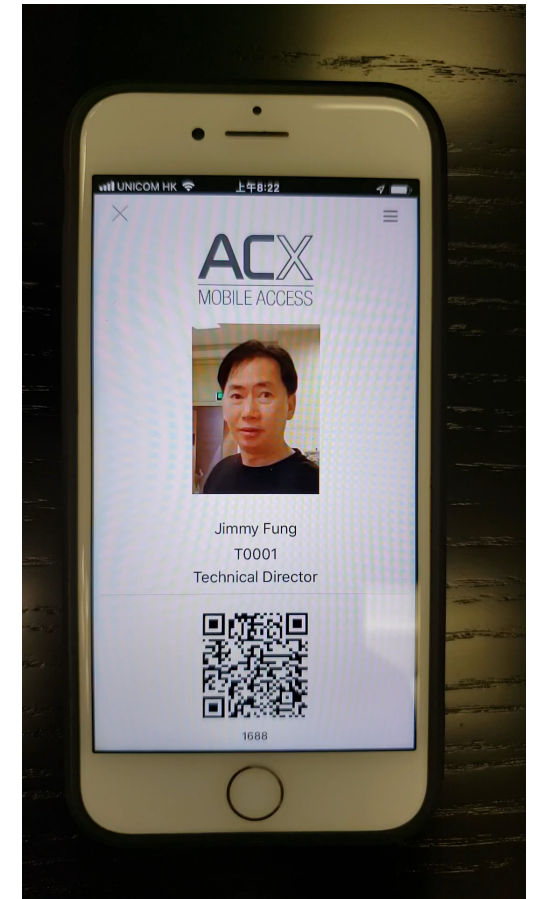
Competitive Advantages

Disruptive technologies



Scramble QR Code + Bluetooth virtual card

- ✓ Valid QR codes are revised every second to prevent forging
- ✓ Random encryption in Bluetooth communication prevents interception



Integrate personal biometrics into smart card

- ✓ Complies with Hong Kong Personal Data (Privacy) Ordinance
- ✓ Facial Template + Palm Vein Template + Fingerprint Template on the same NXP DESFire EV1 8K bytes contactless smart card



Why Palm Vein?

COMPARSION										
	認證種類	識別特徵	資訊特徵	使用特點	抵觸感	精度	FRR	FAR	可信度	適用場合
1	聲紋	提取聲紋的特徵，製作聲紋模型，進行比對識別。可以利用電話進行識別。	易受雜音和周圍環境以及身體狀況(感冒等)影響	雜音的影響較大	低	差	3%	3%	差	電話銀行，電話購物
2	人臉	根據眼睛、嘴等部位的形狀、位置等模式進行比對識別	對姿勢、照明變動敏感，對眼鏡、鬍子、化妝、整形處理較困難，孿生兄弟難以分辨。臉部照片被保存，留下事件發生時的證據	對照明變化敏感	高	差	2.60%	1.30%	差	電子護照
3	筆跡	筆順、筆壓、運筆速度等的比對，找出本人基準簽字誤差程度	即使是本人也難以幾次寫出一樣的東西	抵抗情緒比較小	低	差	1%	1%	差	支票/信用卡支付
4	指紋	通過接觸型感測器抽取指紋模式進行比對，身體識別中實用化程度最高	長期接觸水和化學製品的人、以及皮膚乾燥的老年人的指紋劣化	使用者的心理抵觸比別的識別方法大	低	一般	0.10%	0.001%	一般	個人利用的終端識別，如手機、PC、PDA等
5	虹膜	通過非接觸型感測器抽取眼睛的虹膜模式進行比對	虹膜既有一生不變部分和由於健康狀態而變化部分，亞洲人由於瞳孔較小，不合適此方法	眼睛前放東西造成心理不安	高	高	0.01%	0.0001%	好	門禁裝置
6	掌靜脈(非接觸)	識別精度非常高，因系非接觸型，在衛生面和心理面利用者的抵觸較小。身體內資訊無法偽造、偽裝	醫學上人各不同，同一人的左右手也不一樣，孿生、克隆也不同，除手掌大小其他沒有變化且保持終生不變	幾乎沒有抵觸感	非常低	非常高	0.01%	0.00001%	非常好	高精度，公共場所(ATM、門禁、PC注冊)

Palm Vein Project Reference



- Design, supply and installation
- Palm Vein and QR Code reader
- Access Control and Visitor Management System
- Multi-sites office central control system
- 80 sets Palm Vein reader installed



Palm Vein reader with frame



Palm Vein QR code reader



High Security Zone



Benefits

Green technology



Go paperless with green substitutes

Mobile virtual card and biometrics

Multi-credentials building access control system



Past, current and coming projects

Office buildings



HKSTP – SPX1 / IE 2.0 / AMC (2021)



SWIRE PROPERTIES

Taikoo Place phase 2B (2021)



(2018)

Private hospitals



Gleneagles™
HONG KONG
港怡醫院

(2017)



養和醫院
Hong Kong Sanatorium & Hospital

(3AKN - 2020)



(2019)

Casinos



Safe Deposit Box System



ROYAL ENGLAND
SAFE DEPOSIT BOX LTD.
英倫皇家保管箱有限公司

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