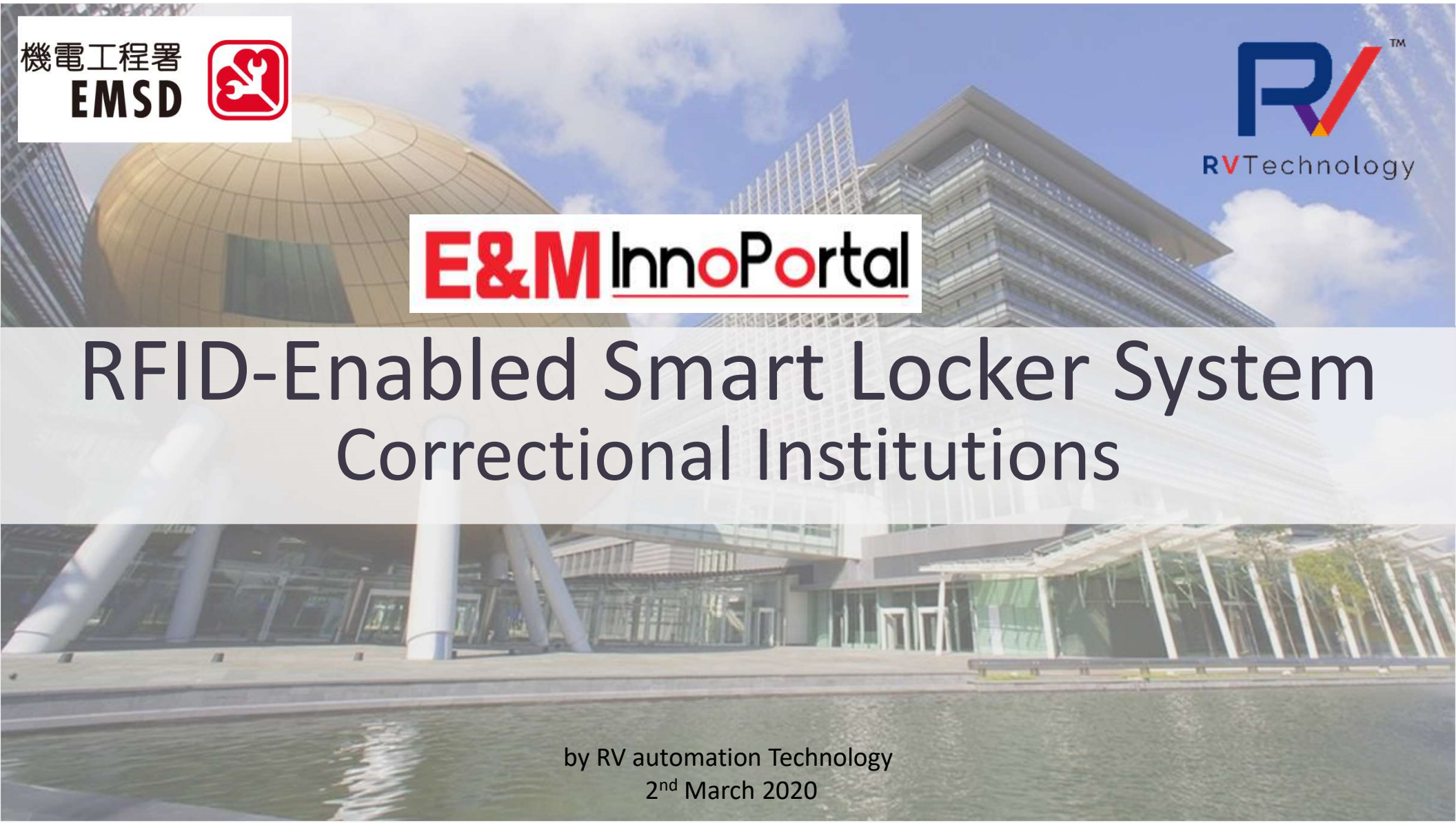

機電工程署 EMSD

RVTechnology

E&M InnoPortal

RFID-Enabled Smart Locker System
Correctional Institutions

by RV automation Technology

2nd March 2020

Content table

Summary

Design and Build a RFID-Enabled Smart Locker System for Correctional Institutions
(REF : W-0235)

Project scope

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- The objective of this project is to design and build a smart locker system using specified RFID wristbands to unlock locker cells. The RFID wristbands will be provided by another supplier.
- The smart locker system should be completed with a system software with an user interface.
- The design of the system software should be able to meet the operational needs of correctional institutions. The user interface should enable system administrators to register and deregister RFID wristbands in the smart locker system. The system should be able to generate system usage reports.
- The smart locker system should be made of tamper-proof material.
- The designs and specifications of the smart locker system should be suitable for deployment in prison environment.

Smart Locker System

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- Locker system
  - Main storage shelf
    - Main locker body (10 locker)
    - User interface panel
    - RFID reader
    - CCTV
    - Computer system
    - Router
    - Electrical door lock
    - Can bus control system
  - Supplementary storage shelf
    - Locker body (12 locker)
    - CCTV
    - Electrical door lock

Specification

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Smart Locker Shelf

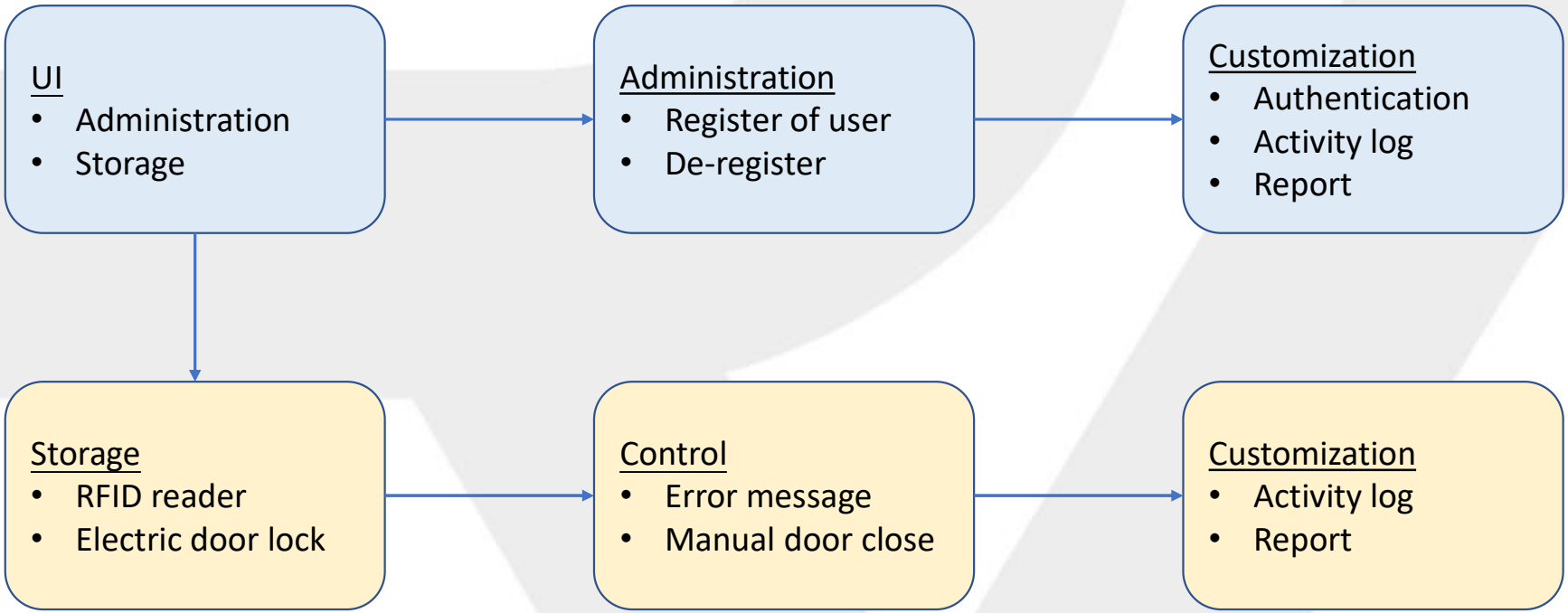
1. Material: SPCC with paint
2. Customized color
3. Sheet metal thickness : Class 1, SPCC
4. IPC
5. User interface panel
6. Sensor on individual bin
7. Closed door (double side) design
8. UL certificate electronic components
9. RFID reader
10. Customized software
11. CCTV

Specification

RFID Reader specification

- USB 2.0 Full Speed Interface
- CCID Compliance
- Smart Card Reader:
  - Read/write speed up to 424 kbps
  - Built-in antenna for contactless tag access, with card reading distance of up to 50 mm (depending on tag type)
  - Supports ISO 14443 Type A and B cards, MIFARE, FeliCa, and all 4 types of NFC (ISO/IEC 18092) tags
  - Built-in anti-collision feature (only 1 tag is accessed at any time)
- Application Programming Interface:
  - Supports PC/SC
  - Supports CT-API (through wrapper on top of PC/SC)
- Peripherals:
  - User-controllable bi-color LED
  - User-controllable buzzer
- Supports Android™ OS 3.1 and above

User Work Flow



Storage Capacity

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- Main Storage Shelf
  - Shelf size 2000mmX1003mmX608mm(HxWxD);10 storage cavities
  - Cavity size 295mmX395mmX585mm (HxWxD); if sensor is needed, width will be reduced by 40mm

- Supplementary Storage Shelf
  - Shelf size 2000mmX1003mmX608mm(HXWXD);12 storage cavities
  - Cavity size 295mmX395mmX585mm (HxWxD)); if sensor is needed, width will be reduced by 40mm

- Cavity size could be configured by customer and quantity of cavity will be updated
- For Standard module, suggest 1 Main Storage Shelf and 2 Supplementary Storage Shelf on both side for ease access. (Total 34 lockers)

Timeline

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Description	Duration
Finalize project scope and requirement	6 weeks
Design and development of system	20 weeks
Hardware (16 weeks)	
Software (20 weeks)	
System test and integration	6 weeks
Delivery and installation	2 weeks
Customer buyoff and training	2 weeks
Total project timeline	36 weeks


Thank you
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