Visitor Management System (VMS)

1. INTRODUCTION

The Visitor Management System (VMS) is a feature-rich suite of components that facilitates the tracing and monitoring of individuals within a complex or building. By automating the processes of registering, tracking and out-processing, the manual overheads of performing such tasks are reduced significantly. Manual paperwork is also minimised with comprehensive electronic data export and sharing.

Having evolved over a period spanning more than six years, the VMS is a stable and robust platform based on a scalable modular architecture. Additional capabilities such as Biometrics and RFID integrated tracking are continuously being added to provide a greater level of security.

The VMS has been recognised by our customers as an award-winning product that has benefited their organisations. Prominent organisations such as the Ministry of Community Development, Youth and Sports as well as ST Microelectronics use the VMS to increase the efficiency of their security team.

The VMS has its humble roots extending back to the year 2003. It was first developed as a SARS contingency tool to provide electronic declarations and temperature-taking. Its evolution has seen it growing into a cutting-edge technological tool that is used for security, anti-terrorism, visitor and staff tracking and other administrative purposes such as personnel attendance.

The concept of the VMS is based on the following keystones:

a. Making the recording and tracking of individuals as easy as possible
b. Providing the administrative staff maximum control
c. Reducing manual paperwork
d. Generating useful and relevant reports in real-time
e. Furnishing administrative and operational support for emergencies
2. FEATURES

System features – basic package

- Password-protected administrative module
- Multi-language (English, Chinese, Malay, Tamil) user-interface support
- Simultaneous scan-out feature for quick processing speed
- Customisable prompts and visit fields
- Low-level parameters for individual fields e.g. read-only, numeric, mandatory
- Individual field validation masks
- Daily/weekly/monthly report-generation facilities
- Administrator controlled header and footer image support
- Automatic scan in/out intelligence (based on time threshold)
- Support for both drop-down list and free-text for individual fields

Security-related features – security enhancement module

- NRIC (S and T series) validation algorithm
- Pre-registration / Out-processing support for additional security
- Web-based interface for pre-registration and out-processing
- Multiple visitor key support (e.g. pass ID in addition to NRIC)
- Finger-print learning and recognition
- Intelligent Character Recognition (single/double-side) for Singapore NRIC
- Twain camera support for visitor imaging and video-recording
- Smart-card (GEMPlus) support
- Access Card Reader support
- RFID Reader support
- Real-time Access Card / RFID tracking using eLisa engine
- Biometric Thumbprint recognition support
• Sticker-pass or pass-card printing
• Evacuation list
• Real-time Foreign Worker Verification via WEDARS engine
• Personnel Blacklisting and VIP Alert
• Voice calls to pre-configured destination numbers
• Automatic pass number generation
• Fire-drill and emergency evacuation support
• License Plate Recognition

Contagion-control features – tracking enhancement module
• Ambient temperature detection for body temperature compensation
• Fever-based visitor barring
• System-assisted individual visitor temperature-taking/attendance monitoring
• Fast temperature scan mode for high-volume visitor temperature-taking
• On-screen questions and declarations module

Customer-support features – interface enhancement module
• Remote help-desk support
• Audio file support for prompts and questions
• Accompanying children details capturing support (below twelve years of age)
• Vehicle registration number support
• Customisable auxiliary visitor detail prompt
• Caller-ID for quick-visitor contact number registration
Communications/Data-sharing features – communications enhancement module

- Local-area network link-up
- Wide-area network link-up
- Network communications module (real-time data-sharing)
- SMS/E-mail notification for monitored individuals via VCAMS engine

3. FEATURE HIGHLIGHTS

The VMS features the following:

- Multiple input hardware support
  The following Visitor ID capture devices are supported:
  - Laser bar-code
  - Smart-card (Gemplus)
  - Intelligent Character Recognition (Singapore NRIC)
  - Quick-pen OCR entry
  - Proximity card reader
  - Mifare Type A/B reader support
  - Biometric Finger/Thumbprint reader

  The system supports additional capture device integration through either direct device support, DDE or via the Operating System clipboard.

- Visitor/Staff details
  The following data about each individual can be recorded:
  - Individual ID (e.g. NRIC Number, Passport number)
  - Company
  - Destination
  - Vehicle number
  - Pass number
  - Person visiting
Additional data fields can be added via the administrative module with support for either free-text field entry or drop-down list selection box. Individual fields can also optionally be set as read-only and numeric-only. Other settings such as the field minimum and maximum lengths and validation masks.

- **Digital data storage**
  The VMS supports database links via Microsoft Data Access Components. It works with popular database systems such as Oracle 8i/9i, Microsoft SQL Server 2000/2003, mySQL and Microsoft Access.

- **Emergency-related features**
  To assist administrative personnel in handling emergency situations, the VMS is implemented with the following capabilities:
  a. **Integrated Digital Clinical Thermometer support**
     Connecting via RS-232 or USB, the digital clinical thermometer optionally supplied with the VMS provides fast (real-time) temperature taking and recording. The laboratory-configured thermometer performs real-time compensation for environment conditions such as the ambient temperature to give a more accurate body temperature reading.
  b. **On-screen declarations**
     The administrator-customisable on-screen declaration prompts capture useful details from visitors and staff. These details can include whether visitors are carrying any sensitive materials (e.g. when entering a military camp), visited any disease-affected regions (e.g. during SARS or Bird-flu epidemics), etc. The prompts are completely customisable and come with optional audio accompanying playback for voice prompting.
c. Evacuation list

By tracking the visitors/staff who scan in and out of the system, the VMS is able to generate a list of visitors/staff who are still in the premises. This allows more effective and complete evacuation of personnel in a building that has been compromised.

With the optional eLisa engine, the VMS can also be used to track the exact / last known location of specific individuals. The generated lists can be used by rescuers or evacuation ICs to speed up and finetune the evacuation process.

- SMS/E-mail notification

The VCAMS engine integrated module allows the VMS to send out SMSes, alphanumeric paging or e-mails to specific individuals who have recorded their mobile phone or alphanumeric pager numbers. This is useful in cases of emergencies where individuals need to be contacted en masse.

Additional notification facilities include notifying the relevant administrative staff via SMS, paging or e-mail when a monitored individual enters or leaves the premises.