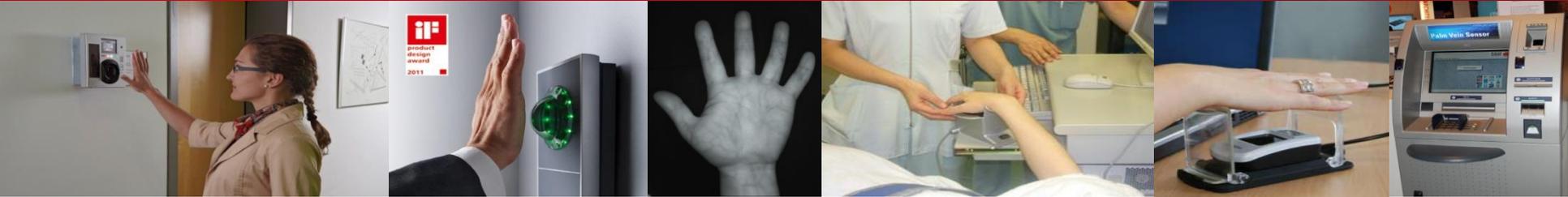


# PalmSecure

## A new level of Biometric Technology Solutions



Paulo Silva  
Solutions Business Group



“the key is your hand”



Usage of biometrics is not anymore a question of “WHY?”,  
the questions are now more  
“WHICH ONE?”, “WHERE?” and “WHEN?”

- Data breach and data theft in enterprises
  - passwords stolen, transferred
  - smartcards forgotten, lost, stolen, transferred
  
- Identity theft
  - unauthorized medical treatments
  - unauthorized building access
  - unauthorized social welfare services
  
- Skimming, Fraud
  - manipulated ATMs
  - manipulated e-banking
  - manipulated ID cards

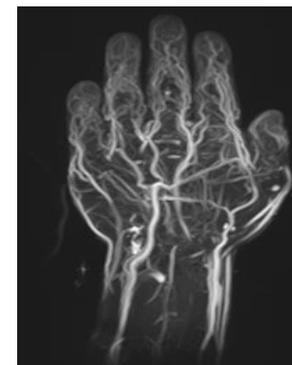
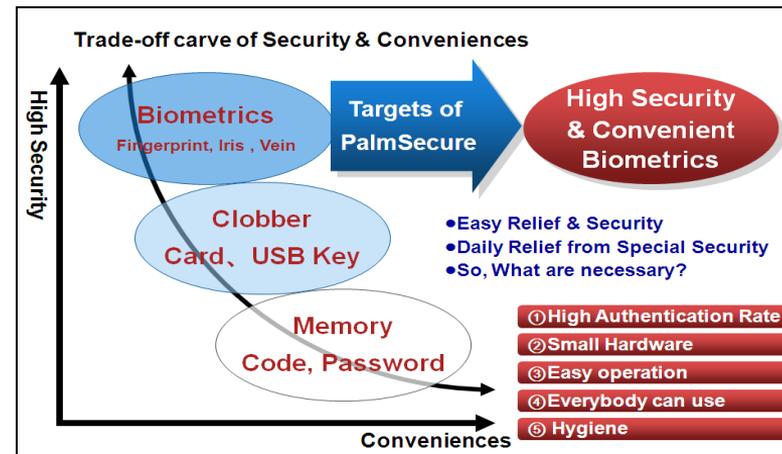
# Why and which biometrics?

## Why biometrics?

- Security combined with convenience
- True authentication
- Accelerating and facilitating access
- Cost and workflow reduction

## Which biometrics?

- Best FAR / FRR / FTA / FTE specification & liveness detection
- Less sensitive to environmental influences
- Applicability rate equal almost 100%
- Hygienic operation
- Age independent usage



## ■ The Product

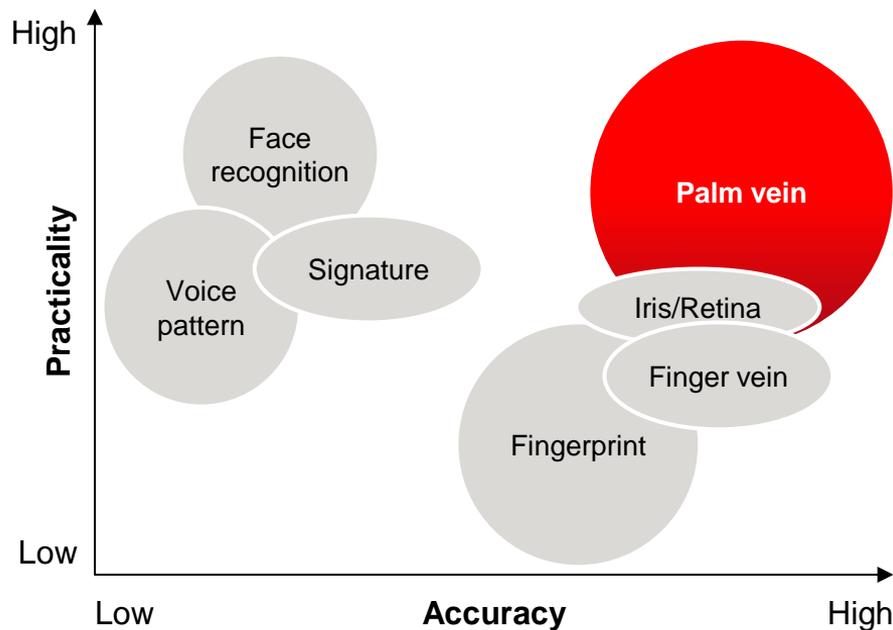
- Compact USB device – 35mm x 35mm x 27mm
- Infra-red captures the veins inside the human body and uses the biometric data making it very secure and virtually impossible to forge
- Very accurate – very low FRR/FAR 0.01%/0.00008%
- High usability with very low FTE(failure to enrol) rate
- Immune from dirt, dust, dryness, moisture
- Fast, ergonomic design makes its application highly adaptable

## ■ Internal biometric

- Unique to every individual, even among twins
- Stable/Unaffected by ageing, one time enrolment
- A very complex pattern of biometric / 5 million points of interest analysis
- Contactless/hygienic, very high accuracy, non intrusive unlike other technologies



# Authentication accuracy



## False Acceptance Rate (FAR) & False Rejection Rate Comparison (FRR)

| Authentication Method    | FAR (%) =           | If FRR (%) = |
|--------------------------|---------------------|--------------|
| Face recognition         | ~ 1.3               | ~ 2.6        |
| Voice pattern            | ~ 0.01              | ~ 0.3        |
| Fingerprint              | ~ 0.001             | ~ 0.1        |
| Finger vein              | ~ 0.0001            | ~ 0.01       |
| Iris/Retina              | ~ 0.0001            | ~ 0.01       |
| <b>Fujitsu Palm vein</b> | <b>&lt; 0.00008</b> | ~ 0.01       |



**Fujitsu PalmSecure is one of the most accurate and most practical technology.**

# Wide range of application areas

## Financial

- Online-Banking
- ATM, Counter
- Deposit boxes



## Personal Record Management

- Social Security
- National IDs
- Health care



## Information Access Management

- PC/Server/Terminal Log in, Enterprises
- Airports, Authorities, Construction area
- Time attendance system



## Cash-less & Card-less Payments

- Retail stores
- Gas stations
- Cashless Catering



There are 30 million active users of Fujitsu PalmSecure in the world.

# Palm vein authentication advantages

## High Safety & Permanence – advantage of veins

1

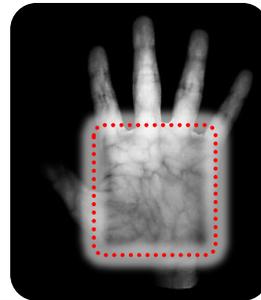
- Hidden under the skin makes forgery very difficult
- Unique even among identical twins
- Never changes stays same throughout life
- Detectable only when blood is flowing



## High Accuracy – advantage of a palm over a finger

2

- Palm vein patterns are complex >5 million reference points
- Palm contains thicker veins than fingers – easier to identify
- Palm veins are insensitive against environment (cold temperature, creamy hands, skin scratches)



## High Acceptance

3

- Very hygienic due to non-contact operation
- Very easy and intuitive to use



# How the palm vein process works

Palm positioned 5-8 cm over the sensor's surface



Life detection and focusing starts



Sensor emits near infra red light to the palm



De-oxygenated blood makes palm vein pattern visible for the sensors camera



The 1-3 KB encrypted biometric template can be stored on either a PC, Server, token or smart card



1axz  
001y

AES encrypted data is converted and compressed into a biometric template which is then AES encrypted again



The AES encrypted data will be transferred to the PC/Server or Notebook for biometric template generation and compression



Inside the PS sensor AES encryption of the raw palm vein image begins

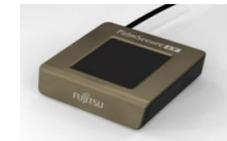
AES – Advanced Encryption Standard

# PalmSecure Product Portfolio

- PalmSecure uses the unique palm vein pattern to perform high level security authentication of individual persons
- PalmSecure sensors can be used for:
  - Physical Access Control Solutions
  - Logical Access Control Solutions
  - Device Access Control Solutions
- PalmSecure based solutions are mainly addressing the following market segments:
  - Healthcare
  - Government
  - Retail
  - Banks
  - Enterprises
  - Industry
- Ready-to-use solutions are available as well solutions for OEMs and SIs



**PalmSecure OEM Sensors**



**PalmSecure Log In / SSO solutions**



**PalmSecure Keyboard for Log In / SSO**

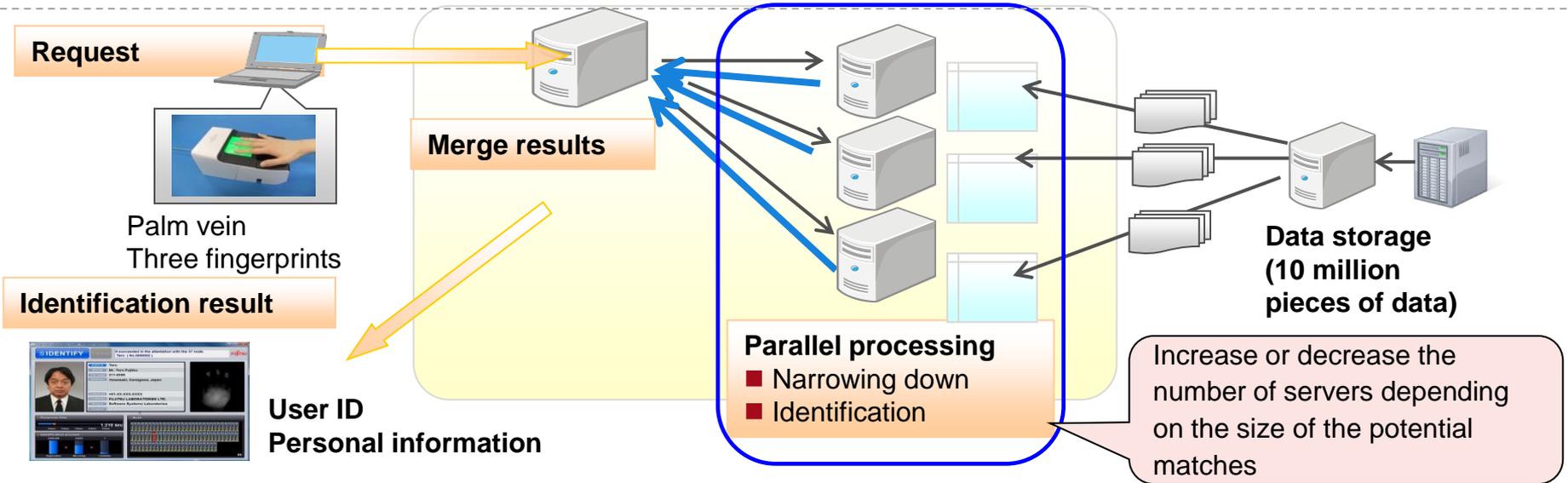


**PalmSecure Notebook / Tablet (BTO planned)**

# PalmSecure – Special Product Portfolio



- PalmSecure & 3 Fingerprint HW solution in combination with Primergy servers, Middleware and storage (plan)
  - Scalable High Security / High Performance 1:N multi-biometric solution
  - Addressing Social Security, Healthcare, National ID card, Population Authentication Services



## FTS PS T&A Terminal

- Time & Attendance System (plan)
  - PalmSecure based time booking system
  - LCD display for results and instructions
  - Optional hand guide for optimal user guidance
  - Fast & reliable 1:1000 users authentication
  - > 1000 users in combination with  
Date of Birth or with Smartcard



# US Healthcare - Baycare Case Study

## Case Study: BayCare Health System

- The leading not-for-profit hospital group in Tampa Bay Area, Florida.
- Owns 9 hospitals, 11 ambulatory Centers, 2,677 beds

### ➤ Problems:

- Medical identity theft, and associated risks such as patient safety and insurance fraud
- Lengthy registration process, having patients fill in forms or having to reveal their social security number
- EMPI clean-ups were time consuming and costly
- Need of quickly and accurately identifying patients in an emergency situation

### ➤ Project:

#### Patient Identification System

-Integrate Biometric Patient Identification System to Siemens Invision and Signature, ensure all patient information is contained in a single record



# US Healthcare Patient Registration Customers



# SSI/SGK Turkey HC Project Summary



- Over 150,000 FTS Thin Clients [FUTRO]
- Over 150,000 sensors
- Over 150,000 hand guides
- 81 cities, services in more than 28,000 places
- 2700 private hospitals
- 1200 state hospitals
- 22,000 clinics
- 24,000 pharmacies



# SSI/SGK Media Work



# Turkish National ID Card Project

- ✓ Entire Turkish Population
- ✓ 5000 stations for enrollment
- ✓ Over 150,000 stations for public use



- ✓ Start date 1.Jan.2013 completion 1.Jan.2016
- ✓ Existing population 72 million
- ✓ Expected population by 2020 84 million

# Fujitsu Secure Printing



- Fujitsu Secure Printing
  - More Information Security
    - Documents for correct persons only
    - User in place while printing
    - No more forgotten documents
  - Cost effective
    - No more unused prints, less paper and ink
    - Centralized printers in effective use
    - No more personal printers
  - Easy to use
    - Fujitsu PalmSecure biometric authentication is easy to use
  - Printer manufacturer independent solution

# Deployed branch solutions - Bradesco, Brazil



- Brazil's second largest private bank, with 4,400 branches, over 40,000 *Bradesco Expresso* units;
- Operates more than 33,000 ATMs, of which 90% are palm-vein enabled;
- Some 10 million customers use the palm vein-enabled system, with more than 700 million transactions completed without a single case of fraud;
- Since October 2012, has offered customers the option of cardless transactions, using just Palm vein technology, account number and password.



**Bradesco**

# Deployed ATM solutions – Ziraat, Turkey



**Fujitsu Palm Vein reader**

- Ziraat is state-owned and is Turkey's second-largest bank;
- Began rolling out palm vein technologies in early 2011, to its 1,300 branches; 50 (soon to be 1,000) staff less micro-branches; 2,900 ATMs; and 30 video-teller machines;
- Aimed to have 1,400 desktop palm readers deployed by January 2012



# Deployed ATM solutions – Bank of Tokyo Mitsubishi, Japan



IC Bank Card with biometrics and ATM system



- BTMU is Japan's largest commercial bank, with 790 branches and 40 million customers;
- It operates around 9,000 ATMs, of which around two-thirds are palm-vein enabled;
- BTMU began offering palm-vein technology in October 2004 and around 1.5 million customers now use it regularly;
- "From BTMU's experience, we consider palm vein authentication as a technology which is already approved as practical, useful, stable service among customers."



# Deployed branch solutions - Ogaki Kyoritsu Bank, Japan



- Following, and in response to, the tsunami of March 2011, Ogaki Kyoritsu Bank permits customers to deposit and withdraw cash via ATMs using only a palm scan (that is, without using a card or passbook);



- Launched in September 2012, the cardless service offered by the bank requires customers to input their birthday, put their palm on the scanner and input their PIN code. Preregistration is required.

マイバンク  
**My OKB**

# Deployed access solutions – Sber Bank, Russia



- Founded in 1841, Sber Bank is Russia's largest bank with 242,000 employees, 19,000 branches and 100 million customers;
- Sber Bank uses palm vein technologies to control access to, and within, Europe's largest data processing centre;
- Opened in November 2011, the centre processes personal and business loans sourced from Sber's regional operations.



# easyGym- New chain of UK Gyms

easyGym.co.uk

FUJITSU

- easyGym is a new chain of Gyms from the easyGroup. (Stellios)
- 4 Gyms already established in the UK and 10 more to open before the end of this year.
- Originally were using Finger Vein Access Control terminals to control turnstiles – all now replaced with PalmSecure



# Berlin Brandenburg Airport

- 30.000 employees and delivery/service staff
- Biometric template in Legic smartcard
- 130 security points
- Other airports investigating now

**BER** BERLIN  
BRANDENBURG  
AIRPORT



# Access Control Products

*Access™ Control*



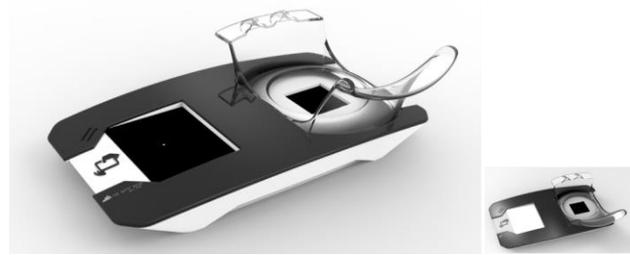
*Wallmount™*



*Sapphire™*



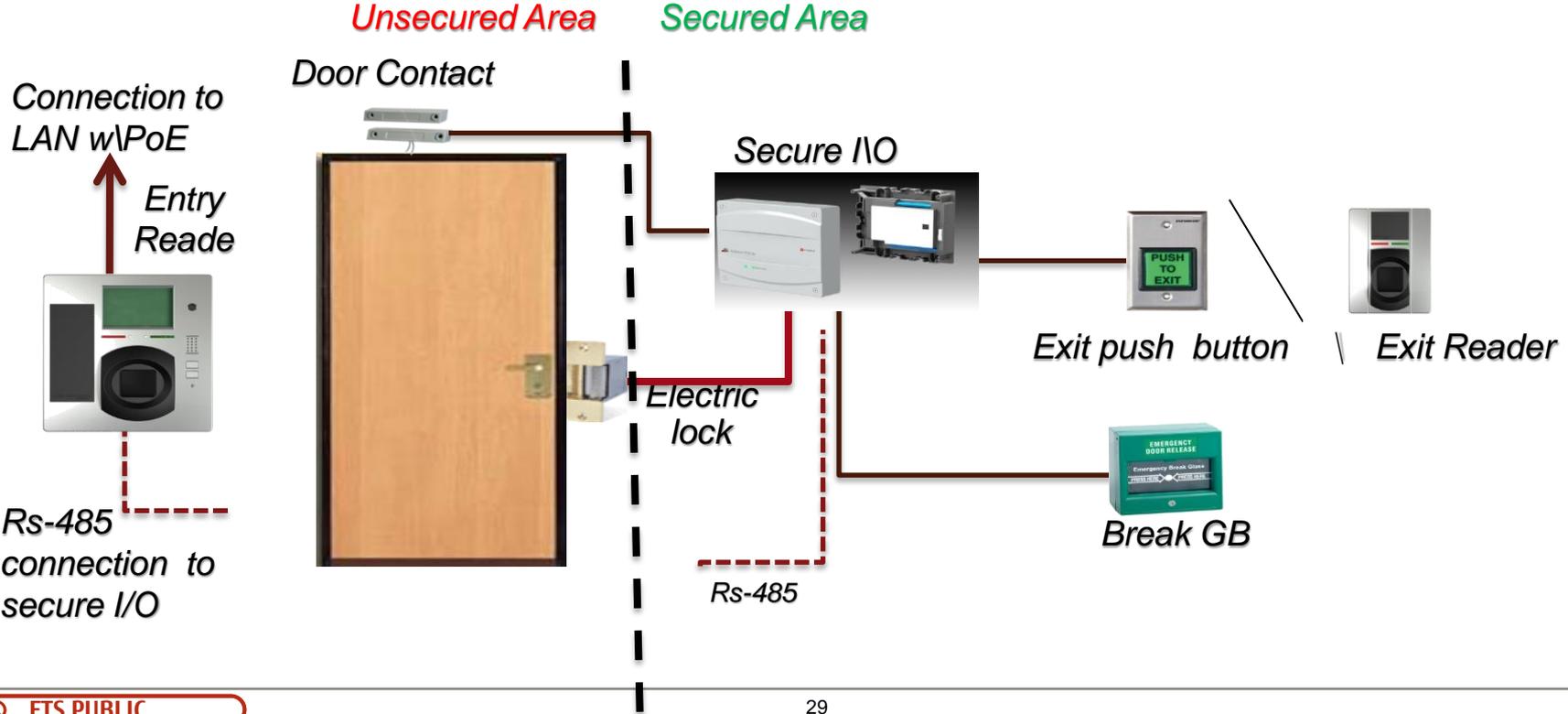
*Time Manage*



*Gate™*



# Typical Configuration



# Video Analytics



Browse and link cameras



Access and view recordings



Investigating alerts and notifications



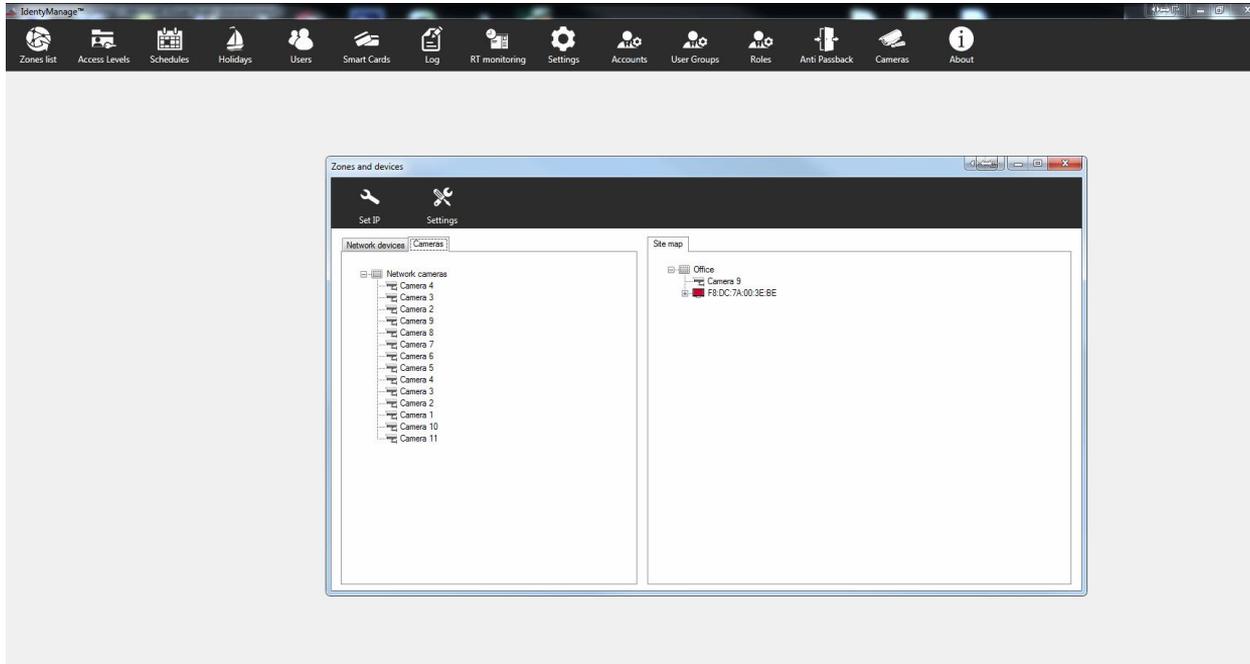
View live streaming



Assign view rights



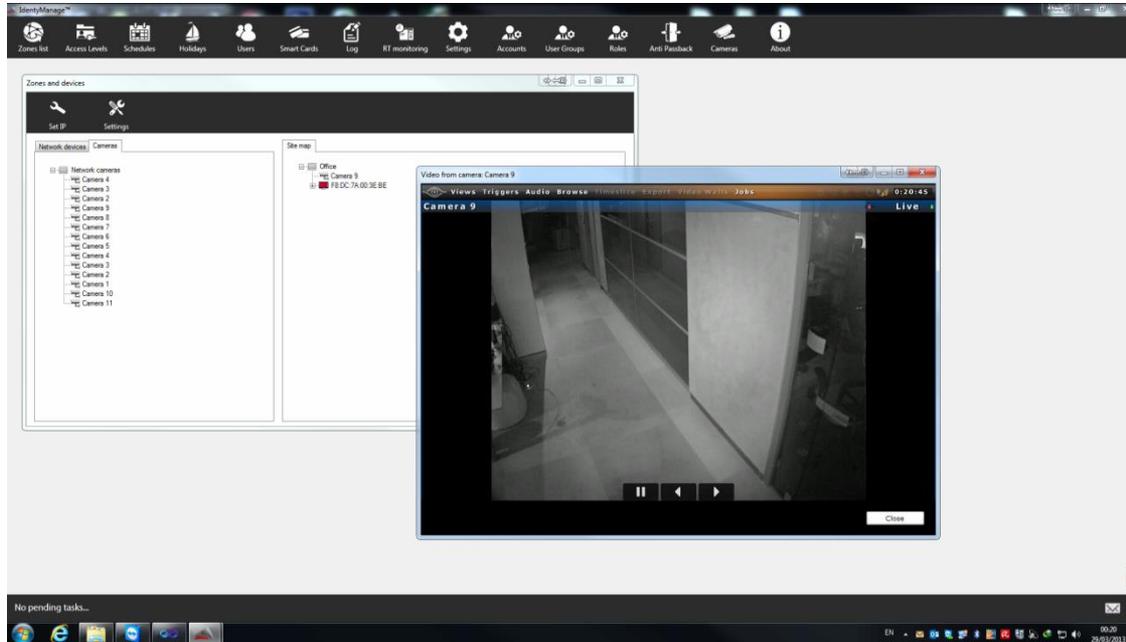
# Easily browse and link cameras to biometric terminals



Build your site map easily by dragging and dropping available biometric terminals and Cameras.

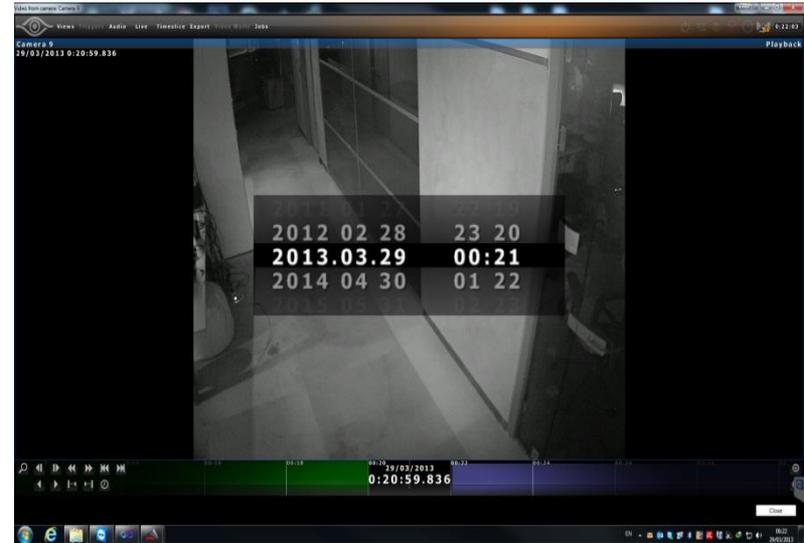
Each camera dragged into the same zone as the biometric terminal will be automatically linked to this device and record all events.

# Live streaming



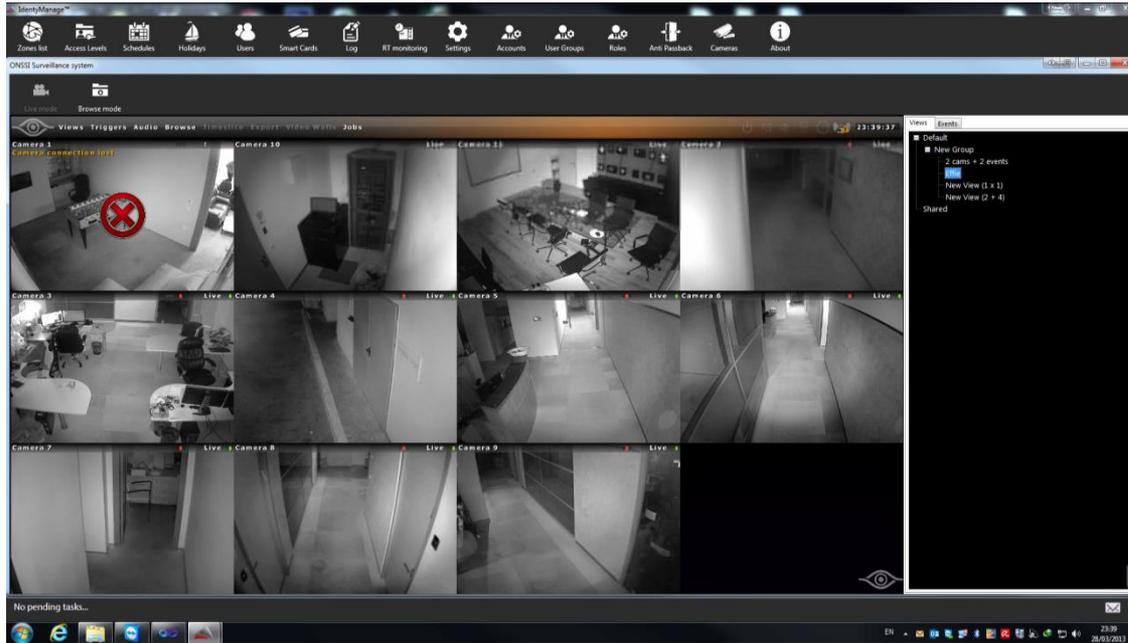
Simple double –  
click  
on any camera on  
the site map will  
open a window  
with a live  
Stream from the  
listed camera.

# Easily access & view Recorder



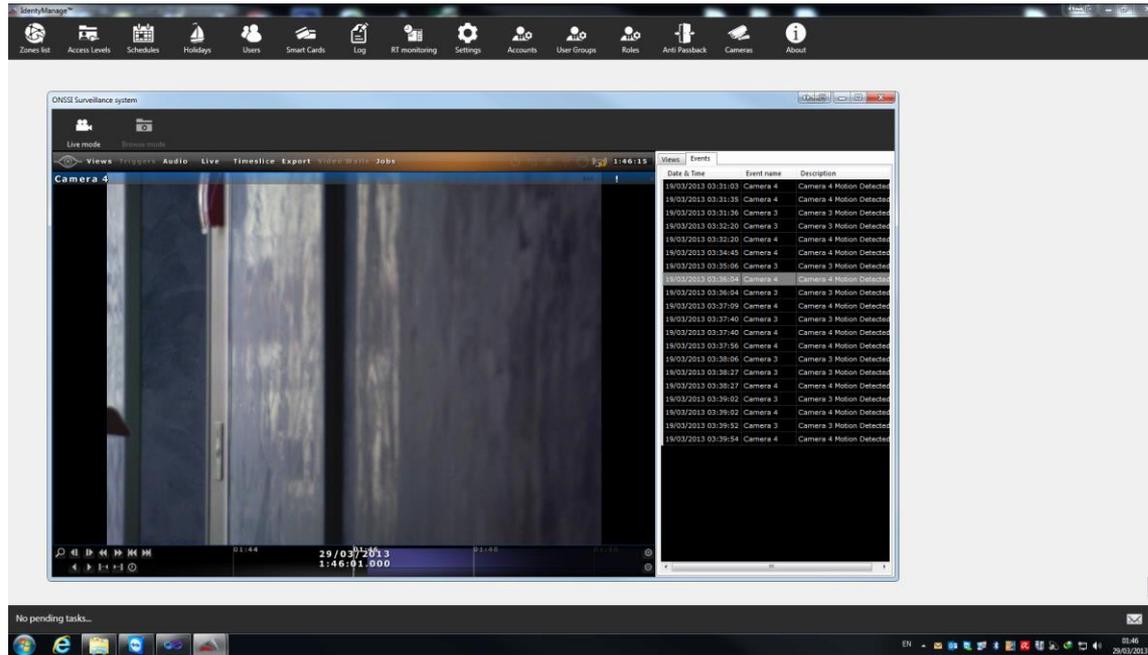
Switch from live video to recorded, just by one click. Easily view and access recordings by time & date.

# Multiple Camera Views on one UI



Switch between the views defined by the SW just by double - clicking on the Selected view.

# View recordings of all pre-defined and generic events



Simply double – click on the event you choose from the list of occurred events to access the recorded data from this event.

You can easily browse the recorder or switch to the live mode on the fly.

# Investigate real – time monitoring notifications

The screenshot displays the IdentityManager software interface. At the top, there is a navigation bar with icons for Zone list, Access Levels, Schedules, Holidays, Users, Smart Cards, Log, RT monitoring, Settings, Accounts, User Groups, Roles, Anti Passback, Cameras, and About. The main area is divided into several windows:

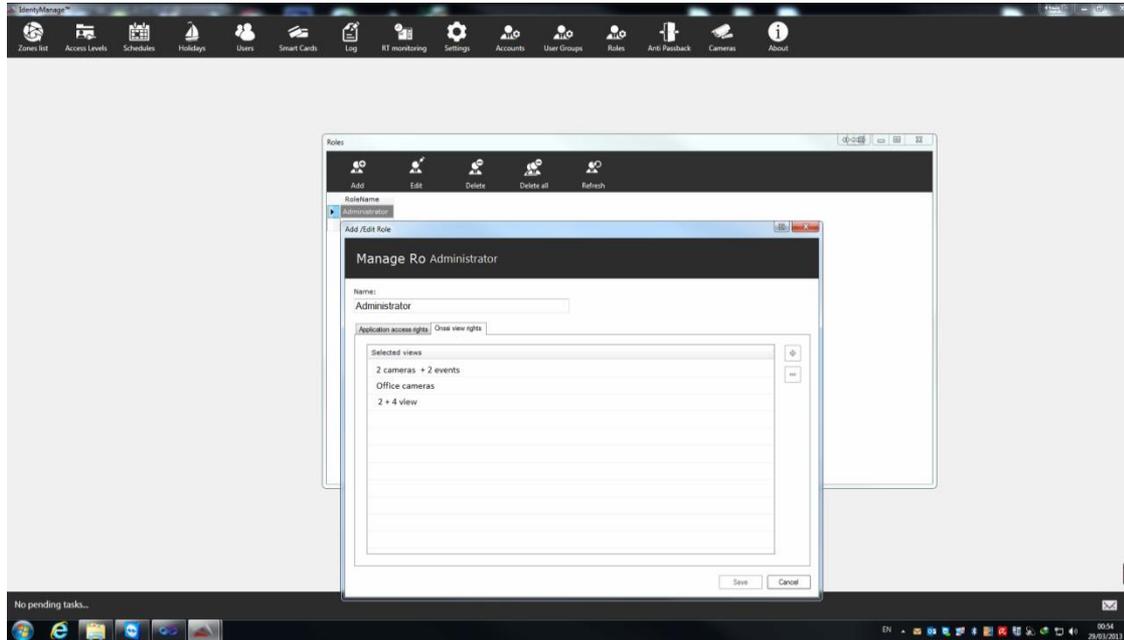
- Monitoring:** A window showing a table of monitoring events. The table has columns for Row index, Date, Time, Event, Access denied, User not found, Biometric used, PIN used, Card used, and Wieg.
- Monitoring result:** A window titled "No user found" showing event details for a specific event. It includes a "User image" placeholder, a "Captured image" placeholder, and a video player showing a camera feed of a person at a desk. The video player has controls for play, stop, and volume.
- Event Details:** A window showing the following details:
  - Date & Time: Tue Dec 11 12:21:48 2012
  - Event: Access denied
  - Event cause: User not found
  - Score: 0
  - In/Out: 0
  - In/Out cause: 0
  - Sensor ID: 1
  - Action: -1
  - Biometric used: Yes
  - PTN code used: No
  - S/C used: No
  - Wiegand used: No
  - PTN number: -1
  - Card number: -1
  - Wiegand type: -1
  - Wiegand number: -1
  - Device: F8:DC:7A:00:3E:6F

At the bottom of the interface, there is a status bar that says "No pending tasks..."

Double – click on the monitoring notification bar will show the event details: date, time, event description and also show the recording of this event.

You can easily review the video recorded and fully investigate specific event, including FR of any suspect you might have.

# View rights



Choose specific views for any account that logs in into the system.

This will allow to the specific account to view only the cameras he is allowed to view.

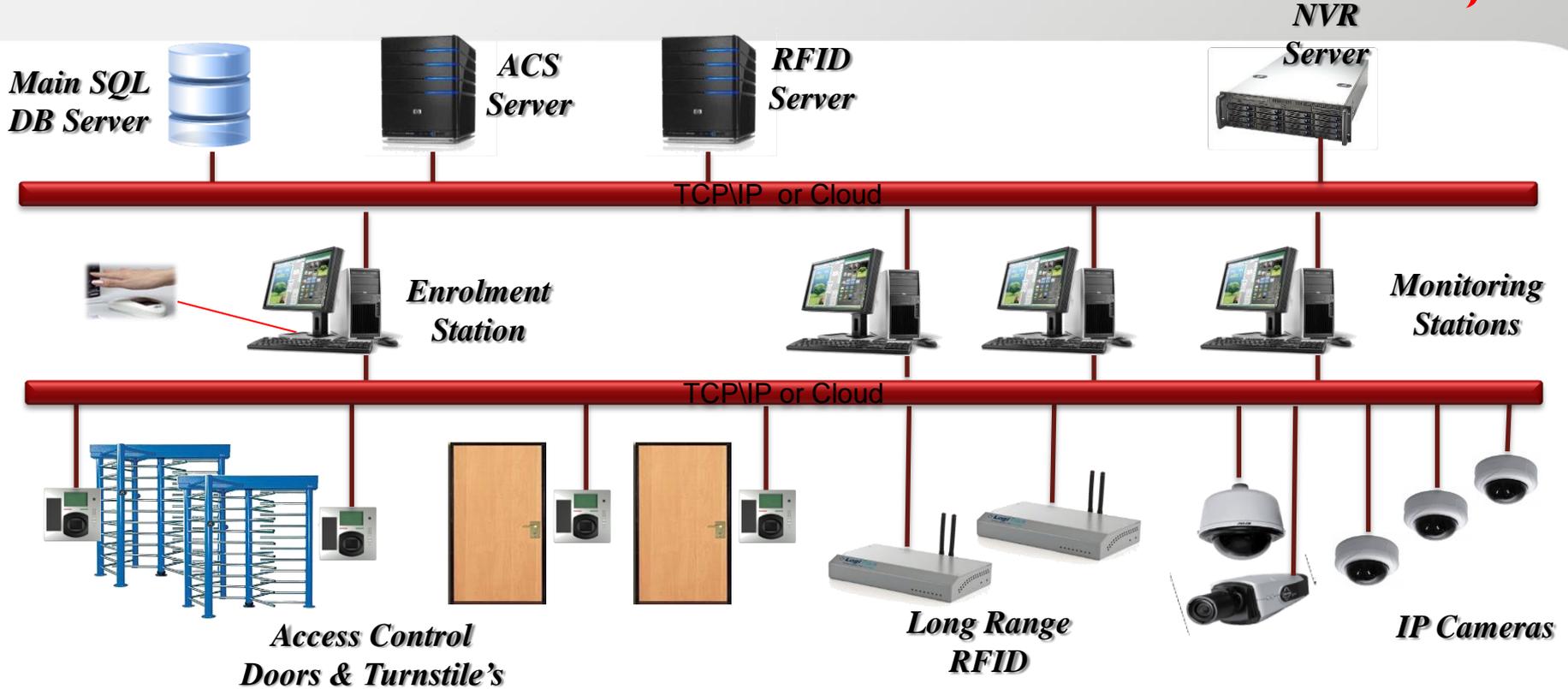
You can specify any number of views to any account.

## Enterprise-Scale Network Video Recorder (NVR)

- Receive on-event or manual (peer-to-peer) NetMatrix push-live-video, directly within SW Client Lite and NetGuard-EVS, with audible and visual alerting
- Powerful investigation tools, including the scalable Kinetic Motion Timeline; digital PTZ into live and recorded images; auto-generation of time interval and motion thumbnails via the Time Slicer and Motion Slicer; and instant access to alerts generated by external access control and other physical systems
- 50 presets per PTZ camera; Point & Click, physical joystick and virtual joystick PTZ control
- Advanced motion detection in SW Client Lite, configurable for motion sensitivity as well as size and speed of object
- Maintenance-free, transparent archiving to network or local drives configuration for archiving schedule and location



# Integrated Architecture



# Enterprise Command & Control

The screenshot displays a security management software interface with several key components:

- Network devices:** A list of cameras and alarm systems with MAC addresses, including F8:DC:7A:00:3E:6F.
- Site map:** A hierarchical tree view showing zones (New zone 1, New zone 2) and partitions (Partition 1 - Exits, Partition 2 - Exits).
- Monitoring:** A table displaying event logs with columns for Row index, &, Date, Event, User, Biometric used, PIN used, Card used, and Wiegand used.
- Monitoring result:** A detailed view of an event showing "No user found" and a video playback of the camera feed.

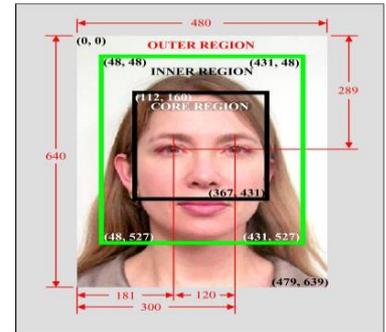
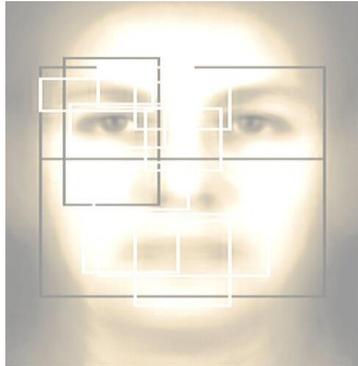
| Row index | &  | Date                     | Event         | User           | Biometric used | PIN used | Card used | Wiegand used |     |    |    |    |
|-----------|----|--------------------------|---------------|----------------|----------------|----------|-----------|--------------|-----|----|----|----|
| 4         | -1 | Tue Dec 11 12:21:48 2012 | Access denied | User not found | 0              | 0        | 1         | -1           | Yes | No | No | No |
| 3         | -1 | Tue Dec 11 12:21:44 2012 | Access denied | User not found | 0              | 0        | 1         | -1           | Yes | No | No | No |
| 2         | -1 | Tue Dec 11 12:21:30 2012 | Access denied | User not found | 0              | 0        | 1         | -1           | Yes | No | No | No |
| 1         | -1 | Sun Dec 2 15:02:02 2012  | Access denied | User not found | 0              | 0        | 1         | -1           | Yes | No | No | No |

**Monitoring result details:**

- No user found**
- Date & Time:** Tue Dec 11 12:21:48 2012
- Event:** Access denied
- Event cause:** User not found
- Score:** 0
- In/Out:** 0
- In/Out cause:** 0
- Sensor ID:** 1
- Action:** Yes
- Biometric used:** No
- S/C used:** No
- Wiegand used:** No
- PIN number:** -1
- Card number:** -1
- Wiegand type:** -1
- Wiegand number:** -1
- Device:** F8:DC:7A:00:3E:6F

**Video Playback:** Camera 2, 11/12/2012 12:21:30-7:05, Playback, Time: 12:23:30

# Facial Recognition Solutions



# Unparalleled Facial Recognition Solutions



- De-duplication
  - Immigration Database
  - State Drivers' Licenses
- 1:N Facial Recognition Applications
  - Visa and Green Card Real Time Video Surveillance Applications
- Mug Shot Booking Station
- Face-based Mobile Identification
- Face Examiner Workstations (FEWS)



# Stadium Biometric Security System

## S.B.S.S



Stadium Biometric Security System

## Provides User Interface For :

- All The Gates Data
- All The Clusters Posts
- Central Database Management
- Black Lists and Ticketing
- System Reports And Audit
- Executive Information
- System State
- Cameras control



## Active-RFID Platform For **Security** And **Monitoring** Solutions



**Guard Monitoring**



**Art Protection**



**Visitor Tracking**



**Laptop Protection**



**Vehicle ID**



**Cold-Chain**



**Retail Loss Prevention**



**Wander Prevention**



**Armory Management**

## TAG Specification

### Wireless

- RFID LF 125khz Receiver used for Wake-Up.
- UHF (433Mhz or 900Mhz) bidirectional communication link. Can be assigned by the Reader for a sub-channel frequency inside the band.
- Up-to 100Kbits/s data-rate.
- Low-Power Management for maximum Lifetime (application dependent).
- In-Circuit Firmware Programmable.

### Sensor (optional) & Interfaces

- Temperature Sensor.
- Motion Sensor
- Tamper sensor
- External 2-State Switch
- Internal Buzzer

### Environmental

- Operating Temperature:  $-20^{\circ}\text{C} \div +75^{\circ}\text{C}$ .
- Storage Temperature:  $-45^{\circ}\text{C} \div +85^{\circ}\text{C}$ .

### Memory Capacity

- Unique 32Bit or 48Bit factory-assigned serial number.
- 256 byte EEprom for non-volatile parameters.



## TAG Specification

### Temperature Sensors

- PT-100
  - -100o to +75o Celsius
  - 0.5o Accuracy
- PT-1000
  - -250o to +120o Celsius
  - 0.5o Accuracy



### Common Specification

- Power: CR2450 Lithium Coin Battery (540maH capacity)
- Enclosure material: Acrylonitrile butadiene styrene (ABS)
- Durability: IP54
- Optional Sensors: All “MEDICAL” tags support both Tamper and Motion sensors

## “Medical “ TAG Family

### *ASSET tag*

*The ASSET tag is a general purpose tag for common asset-management applications. With its large battery and minimal power consumption, the Asset tag can last for more than 3 years*

### *PANIC tag*

*The PANIC tag adds a single push-button functionality, which can be used for panic/distress or general status indications. The tag also includes a single LED to indicate the user that message was received by the system.*

### *STATUS tag*

*The STATUS tag includes 3 push-buttons and matching LED indications. In asset-management applications, the STATUS tag enables asset status/availability on top of asset location.*



## “Medical “ TAG Family

### *Temperature tag*

*The temperature tag features 3 measurement options (Internal Sensor, External PT-100 Sensor, External PT-1000 Sensor). The Tag can monitor temperature range (min, max or in-between) and send an alert when temperature exceeds, or program to continuously send values every fixed intervals.*

### *2-State tag*

*The 2-State tag features a digital input, and generates a transmission on any change (open/close). The tag can also periodically its current status.*

### *PATIENT tag*

*The PATIENT tag is small-sized, designed to be used as a wristband in people-tracking applications such as patient-monitoring, infant protection and visitor tracking.*



## “Enterprise “ TAG

### VEHICLE tag

The VEHICLE tag is the most robust tag version in the LogiTrack system, making it ideal for outdoor and harsh-environment applications such as vehicle management and industrial tracking.

- Power: Rechargeable Li-Polymer Battery, 200mAH
- Durability: IP54 / IP67 (by request)
- Enclosure: ABS
- Optional Sensors: Motion only



### BUZZ tag

The BUZZ tag features an internal buzzer that can be activate when the tag enters a certain RF-Zone, enabling anti-theft applications for retail and technology.

- Power: Rechargeable Li-Polymer Battery, 200mAH
- Durability: IP54 / IP67 (by request)



## “Enterprise “ TAG

### ROUND tag

The ROUND tag is small-size and can be branded with logo/color, making it ideal for covert use in visitor tracking and other security applications.

- Power: CR2032 Lithium Coin Battery (225mAH capacity)
- Durability: IP54



### FLAT tag

The FLAT tag features a very low profile and an optional tamper-sensor, making it ideal for application such as laptop protection and IT asset-management.

- Power: Rechargeable Li-Polymer Battery, 200mAH
- Durability: IP54
- Optional Sensors: Motion & Tamper



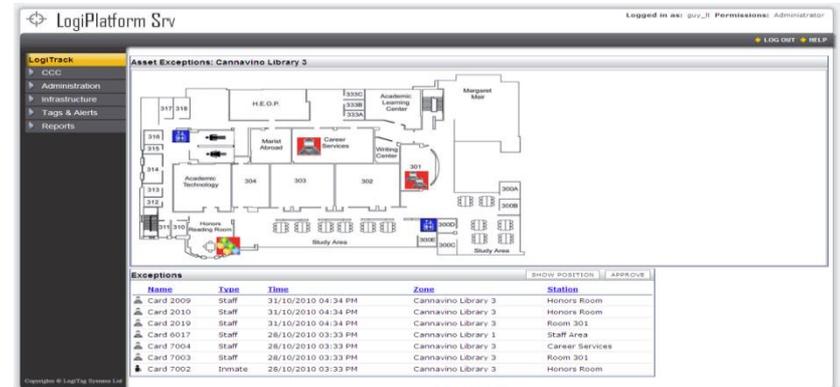
### FLAT tag cradle

The cradle was designed to enable easy attachment and maintenance of the FLAT tag in asset tracking/security applications.



## Management Software

- Enables security officers to monitor the location of:
  - Visitors
  - Cleaning staff
  - Guards on duty
  - Temporary employees
  - Outsourced personnel
- Increases overall compound security
- Interfaces with existing access-control systems for an integrated solution .
- Provides security officers with actual information in real-time and enable pro-active security measures.

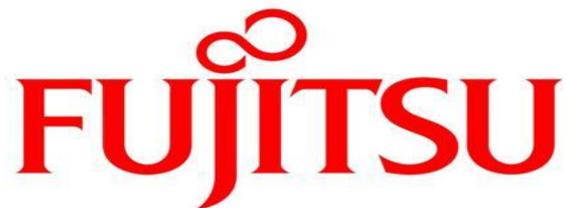


PAULO SILVA  
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+351 96 605 34 99

A blurred background image of three business professionals in an office setting. A woman with dark hair in a bun is smiling and looking towards a man in a suit who is speaking. Another woman is partially visible on the right side of the frame.

**Thank you for listening!**

A large version of the Fujitsu logo, featuring the word "FUJITSU" in a red, serif font with a red infinity symbol above the letter "J".

shaping tomorrow with you



“the key is your hand”

Thank You, For Your Attention.