

DRS Biometric System- IntelliReg



Wish you could.....

Quickly determine the exact whereabouts of each student at any given time? Easily identify the non-attendance of students at any given time? Track and monitor students where persistent truancy is a problem? Let the students take responsibility and accountability for their own attendance?

The Solution - what is it?

DRS IntelliReg electronically records the presence, absence or lateness of students and staff. With our IntelliReg software, students use their fingertip to register. All biometric readers are in constant communication with the controlling PC, thus delivering real time information, necessary for emergencies. Each registration contains the date, time, reader ID and ID number. The system can also integrate seamlessly with SIMS AM PM and SIMS Lesson Monitoring or other 3rd party MIS - providing instantaneous results!

The solution can be combined with IntelliReg access control, cashless catering, smart copiers, SMS to parents, library systems and more. Schools can also generate an attendance certificate for each period of the year.

What is biometric technology?

Biometric technology is an irrefutable verification or identification of a person by various physiological characteristics, which cannot be transferred or copied. DRS is using the latest technology and Biometric sensors and have implemented the module in the SY-780 unit for school attendance and access control.

Biometric authentication

Biometric authentication measures the unique, invariable biological characteristics of an individual. One of the most common biometrics used today is fingertip information. The biometric information is captured during enrolment and translated into a template, which is stored for subsequent authentication. The template is then stored in the database or on the server. During authentication, the biometric information is captured and

compared against the stored template. If the user is valid, the two images will match, and authentication is achieved.

Pattern recognition

DRS uses a pattern recognition algorithm as the basis for its fingertip authentication systems. This algorithm processes the entire image of the fingertip, rather than simply selecting a limited number of minutia points. This means that the pattern recognition algorithms are more robust as they are not significantly affected by the loss of information when a finger is scarred, damaged or dirty.

Protecting your rights

The integrity of the fingertip template is guaranteed. DRS do not keep an image of the fingerprint. Our biometric solution scans the fingertip ridges at a very low resolution, and translates the scan through an algorithm to a number. Only that number is stored. The data also cannot be transferred or copied into other systems such as AFIS.

How does it work?

When students enrol, a template is created which is then stored as a mathematical template for future verification. The image of the fingerprint is not stored at any time.

Fingertip Verification - is the process of entering a pin # or using a card and comparing the current scanned image against a stored template. Response time is 1-2 seconds.

Fingertip Identification - using the finger template for comparison. No need to enter a number or use a card. Response time is 2-3 seconds.

Images in this flyer are for illustration purpose only. The technical data sheet packed with the product is the only obligatory source of technical information.

Registration @ your Fingertip



Data 'rich' technology

Traditional minutia technology relies on unique reference points (minutia) on the finger. For a given finger the number of minutia is limited. The Ridge Recognition algorithm, in contrast, is unique in its ability to record and match the ridge pattern of the finger. For a given area of the fingertip, the ridge pattern provides substantially more data than minutia alone, resulting in the following advantages:

- o higher overall accuracy - more data points allow more precise matching
- o higher tolerance for distortions - factors such as cuts and swelling have a much smaller impact on the verification process
- o ability to effectively use smaller sensors - the surface area of the sensor can be significantly reduced whilst high accuracy is maintained.

As a result of this innovative approach, the algorithm has achieved an average error rate of .1% or 1 in 1000, while the best minutia algorithms are believed to achieve approximately 1% or 1 in 100. An error occurs when an unauthorised user is falsely authorised ('false acceptance'), or when an authorised user is falsely rejected ('false rejection').

Traditionally, one of the biggest drawbacks of fingertip identification and authentication has been the distortion of the fingertip image by factors such as cuts and swelling. This problem has been solved by precisely measuring distortion and removing it from the ridge pattern. This technique is not possible with minutia algorithms because the gaps between minutia points do not allow accurate estimation of the distortion. In addition, Ridge Recognition functions with smaller-sized sensors. A continuing goal of biometrics is to minimise sensor size. Given the high costs of silicon, smaller sensors allow for significant cost reduction. Also, smaller sensors enable more feasible implementation in products where space for a sensor is limited. The drawback to smaller fingertip sensors has traditionally been that they capture fewer data points, thus limiting accuracy and security. Ridge Recognition, however, does not have this drawback because of its data rich imaging approach.

IntelliReg Software Key Features:

- o Uses the official codes used for attendance by schools
- o Attendance is registered automatically
- o Works with 3rd party interfaces (SIMS & other MIS)
- o Reading technology for all users (Fingertip, Proximity, PIN & Swipe)
- o Unlimited transactions
- o Email/SMS notification of absence
- o Automatic fire report (presence & absence)
- o Generates complete user-defined reports
- o Generates attendance certificates
- o Reports all transactions online in real time
- o Multi-user/Multi-tasking
- o Relates picture to card holder
- o Combines CCTV management
- o Indicates events on a graphic map of any secured area
- o Operates under Windows 95/98/NT/2000/XP

Why Invest?

- o Instantaneous results!
- o Clean, accurate and consistent data at all times
- o Increases overall efficiency
- o Eliminates 'buddy punching'
- o Saves time of manual registration
- o Reduces administration time & cost
- o Removes teacher responsibility for marking
- o Encourages students to take responsibility & accountability
- o Quick & easy to use
- o Major tool in fighting truancy
- o Provides accurate information for EMA funding
- o No manual input of data
- o Choice of registration methods (AM/PM or class registration)
- o Cost-effective and easy to support
- o Promotes health and safety (automatic fire reports)
- o Easily deployable via existing network
- o Removes ongoing costs (additional resources)
- o Will interface with future developments



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