

ST+D BIOMETRIC SYSTEM

SUMMARY

ST+D have developed a patented system to learn and then identify a person from a group of other people. The system uses characteristics of the human ECG and, once learned, can confirm if a person is or is not the particular person in question.

This system has uses in identifying that the correct person is actually wearing a device (eg in parole monitoring) or is the person being medically monitored.

The system works on captured ECG which is often picked up in medical applications from sensors on the chest. However sufficiently good ECG can be simply measured from other places eg using a wrist watch-like system where the user touches the watch with their other hand.

METHOD

Once an ECG signal has been picked up, a number of key ratios from the various features on the ECG are measured. An algorithm based on significant research is then used to compare a number of these ratios. The absolute values are not used, hence the actual levels of signals are not important which considerably eases sensor issues. The ratios however are governed by various physiological aspects of the individual and if sufficient ratios are used, a unique identification of a person is derived.

In use a subject must be learned by the system. In this phase the various ratios are monitored over a number of heartbeats and the unique identifier is calculated.

When it is necessary to confirm a particular person, a fresh ECG is obtained and compared with the identifier learned for the person in particular. An immediate verification can be obtained.

The learning process is one from many, not one to one. This means that a large number of people may be learned and the system used to identify a particular person from the database of previously learned people.

ECG PICK UP

ECG is available on many parts of the body, the principle requirement being to be able to measure on both sides of the heart. Thus two electrodes on the chest, one on either side of the heart is the normal method.

However it is also possible to take measurements from other places such as from both arms. Thus a device like a wrist watch can be used where the 'watch' makes contact with one arm and the other hand is used to press against the top of the watch.

In a static situation like a border control, two pads on a desk could be used to take the signal ie one from each hand.

COMMERCIAL AVAILABILITY

The system is patented and is available for use on a licensed basis. Further development may be necessary depending on the particular application.

ST+D has a long record in producing medical sensors and can easily design the electrode system for an application. It can also fully integrate the system into OEM equipment or design the complete system for a client.