IDEMIA
augmented identity

Discussion of the Template Type and Its Inability to Be Reverse Engineered

When using biometrics for access control, the enrollment process encompasses three steps: acquisition of the finger image, conversion of the finger image to a template, a mathematical representation of the finger image, and storage of the template for authentication or identification purposes. Fingerprint images are not stored at enrollment or matching stations.**

Acquisition of the finger images takes place on a desktop version of the device and consists of capturing the fingers only on one hand or capturing the fingers on both hands. The images, once translated to templates, are discarded and not saved.

Figure 4: Biometric template creation process

The template(s) are stored as reference templates. A template is a set of 0's and 1's created from a mathematical formula that is patented called a template generator. You cannot reverse engineer the 0's and 1's into the mathematical representation of the finger back to the finger image.
Images are converted to proprietary templates, using a proprietary algorithm and are then immediately discarded. The proprietary reference templates are stored in a an AES 128 encrypted database located in the MASigma device embedded in the MorphoWave.

A patented template matcher is used to take the image of the live fingers, extract the minutiae points, create a mathematical representation that is loaded into a proprietary, patented matching scheme that sorts through the reference templates to find the reference template that most closely matches the features extracted. The images of the live fingers captured for matching are immediately discarded once the matching templates are created.