



An innovative and highly specialized company introduces its products.

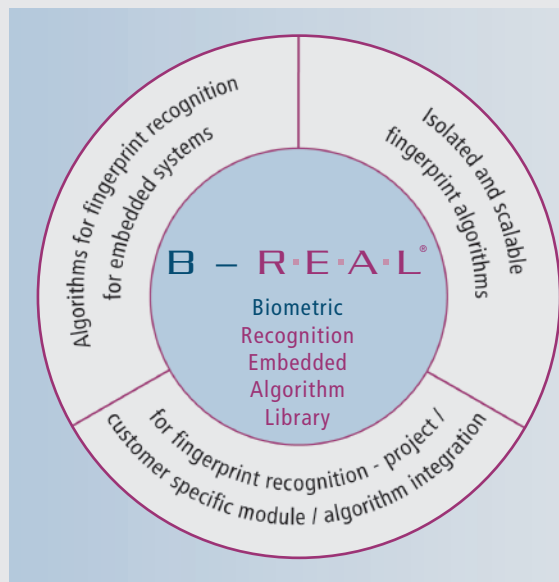


Technology Licensing B-REAL Engine (Biometric Recognition Embedded Algorithm Library)

Fingerprint biometric enabling components for wireless and embedded development in C

The growing need for security and biometric applications for mobile phones, PDA's but also other applications e. g. television or automotive industry, will require the integration of biometric functions in embedded systems. Limited processing power or storage capability of such systems frequently demand optimized fingerprint recognition algorithms. For such applications, in respect of processor arithmetic, storage requirements and code size B-REAL includes optimized implementations of fingerprint recognition algorithms.

B-R-E-A-L contains high performant implementations with today's popular fingerprint recognition algorithms and functions and allows the user without a knowledge of fingerprint recognition algorithms and associated mathematics to integrate biometric functions into their applications. The trustworthy and reliable implementation of B-REAL is a quality guarantor for every fingerprint application and the best protection from costly consequences of defective recognition software/firmware.



- > Best in class performance worldwide
- > Enhanced Siemens technology
- > Isolation and specific adaption of algorithms
- > Optimised for embedded systems
 - memory resources optimised
 - scalable performance / MIP's resource requirements
- > Implementation of project specific biometric modules
- > Continuous enhancement and improvement of biometric modules

B-R-E-A-L offers for a range of low power, high performant 16/32-bit DSP's and RISC microprocessor cores the capability to integrate platform optimized fingerprint recognition techniques for a wide variety of cost and power-sensitive consumer applications. It offers significant cost reductions and time-to market improvements by consolidating functions performed by several independent micro-controllers/DSPs onto a single device. For a variety of operating systems and processor platforms B-REAL provides trust-

worthy and high performant software/firmware implementations for fingerprint encoding and matching algorithms required for fingerprint verification and identification –

NOW AND IN THE FUTURE.

We support our customers from the definition phase until to the final integration and system test phase of their end applications based on our professional service and support concept.

More details about:

Technology Licensing B-REAL Engine (Biometric Recognition Embedded Algorithm Library)



Highlights:

- > Outstanding authentication performance
- > Powerful image enhancement technique
- > Fast 1:1 and 1:N matching speed
- > Top results in FVC and Biofingerprint Evaluation
- > Platform interoperability - support both PC and embedded applications with the same engine and functionality
- > Sensor interoperability - unique sensor-independent fingerprint recognition
- > Small code footprint
- > Optimized performance for wireless and embedded platforms
- > Unmatched interoperability and flexibility
- > Wide range of algorithms suited for a variety of applications and devices
- > Trusted fingerprint recognition experience from MB fingerMetrica GmbH and Siemens
- > Runs on 16bit and 32bit architectures with excellent speed/performance
- > Excellent code density for minimal system memory size and cost
- > Easy/uniformed interface (API) for all recognition algorithms

Technical Data:

- > Standard ANSI C code
- > Adjustable FAR/FRR rates
- > EER: < 0,1%
- > Data memory (working): < 18kWords
- > Data memory (image processing): approximately 85 kBytes
- > Programme memory: < 100 kBytes
- > Template size: < 256 Byte (configurable)
- > Required processing speed: 100 MIPS (e.g. TI or AD DSP or ARM core)
- > Currently supported: Texas Instruments C5000 family, TMS320C54xx, 55xx and Analog Device Blackfin ADSP536

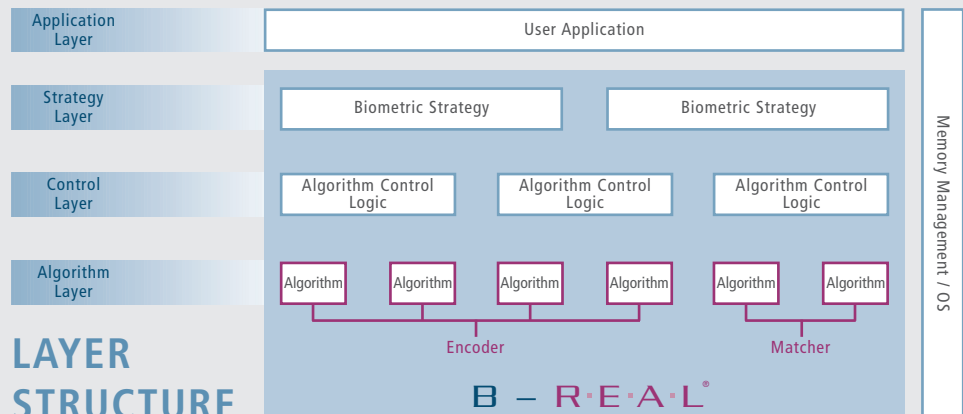


B-REAL is available on standard Windows platforms and is portable to many more. For e. g. ports for other platforms for EPOC, Palm OS, Windows CE as well as customized algorithm optimizations are done based on our professional service and support concept.

Architecture

B-REAL is a library written in ANSI C and is constituted of algorithms and logic used in fingerprint encoding (extracting relevant match information) and matching. In its current form B-REAL has a standard algorithmic layer and a simple biometric strategy layer.

Via a uniformed interface, B-REAL facilitates the application with the necessary encoding and matching functions for fingerprint recognition and provides detailed data structures with related information for each encoding and matching process. In addition to the basic biometric functions, B-REAL also contains functions for enhanced enrolment strategies.



B-REAL offers an administration layer with abstract programme interfaces from where the different algorithms and modes can be invoked. Developers using B-REAL do not have to be concerned about the specific details of the biometric algorithms. Altogether, B-REAL is designed to make the work with biometric algorithms as easy as possible for the user to implement.