tascent

Tascent™ Mobile

Multimodal Biometric Platform, Made for iPhone
Compact, Intuitive and Open Architecture

iPhone 6 iPhone 6s
16GB 64GB 128GB

Tascent M6

Tascent Mobile Biometric Platform, Made for iPhone 6 / iPhone 6s

Tascent M6
Front View

Tascent M6
Back View

Tascent Mobile combines the world's leading smartphone devices with advanced multimodal biometrics to deliver a breakthrough mobile biometric capability finely tuned to the needs of end users in law enforcement, border management, defense, and civil ID.

Tascent Mobile's third generation product, Tascent M6, is based on the Apple iPhone 6 / iPhone 6s and provides highly intuitive, standards-compliant iris, face, fingerprint, and voice biometric capability in a compact, "pocketable" form factor.

Leading edge sensors are utilized for high quality biometric capture in a wide variety of environmental conditions, with capability delivered by:

- Integrated Biometrics' Sherlock fingerprint sensor for FAP45 fingerprint capture
- Apple iPhone 6's 8MP or iPhone 6s's 12MP f/2.2 auto-focus camera for face capture
- Tascent's proprietary near-IR camera system for simultaneous dual eye iris capture, with full functionality even in bright sunlight

Tascent Mobile Product Family

Tascent M6 is not just a mobile biometric device – it adds best-in-class biometric capability to a very mature and secure iOS mobile computing platform. Tascent M6 is a key part of the Tascent Mobile product family, which in addition to Tascent M6, includes the Tascent Mobile SDK and Tascent Mobile App for iOS.

The Tascent Mobile SDK allows for full customization of high performance mobile biometric apps. Powered by the Tascent Mobile SDK, Tascent M6 delivers iris and fingerprint capture to the iOS platform while the iPhone's leading edge onboard camera and microphone provide superior face and voice biometric capture capabilities.

Benefits of smartphone-based mobile biometrics:

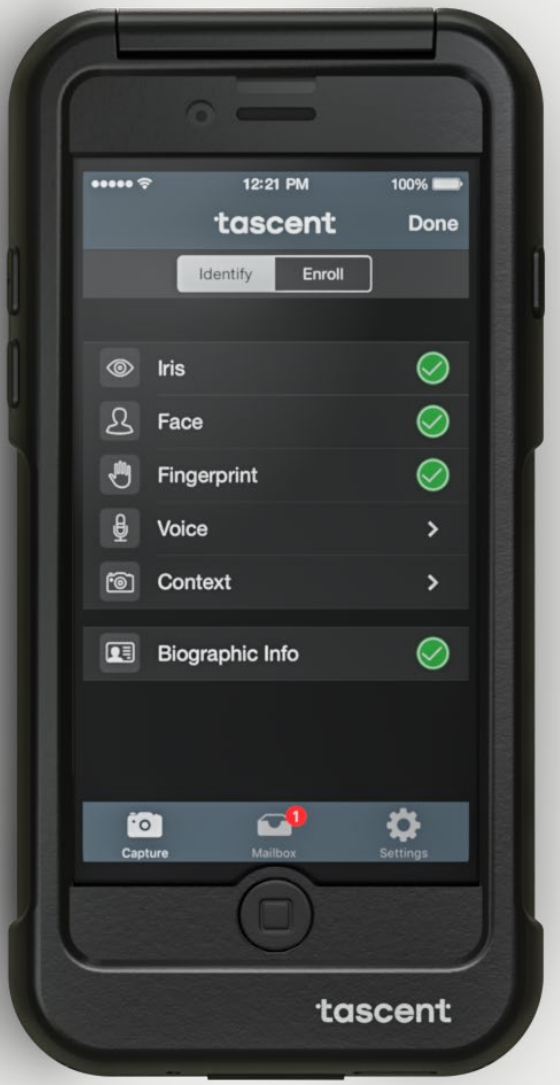
- Intuitive and simple user interface
- Integrated WiFi, 3G, and LTE communications
- High quality GPS location tracking
- Vast array of off-the-shelf and custom apps

Tascent Mobile combines Tascent M6, the Apple iPhone 6 or iPhone 6s, and the Tascent Mobile SDK / App for iOS, delivering new levels of performance and versatility to mobile biometrics.

DEVICE iPHONE iOS APP SDK

Tascent Mobile App for iOS
Powerful & Versatile Biometric Identity

The Tascent Mobile App for iOS provides the ability to capture standards-compliant biographic information, biometric images with image quality information, and associated contex imagery. All collected data can be geo-tagged using the iPhone's GPS capability, and text tagged in a standards-compliant fashion. Data is transmitted wireless to backend systems using either SMTP or web services via WiFi, 3G, or LTE.



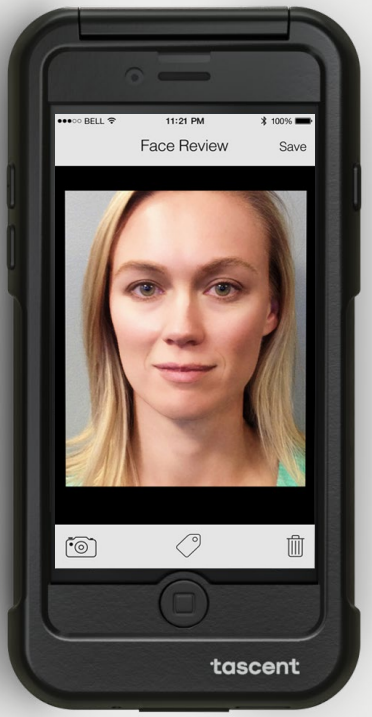
The Tascent Mobile App rigorously adheres to Apple's user interface design conventions while thoughtfully adapting them to the needs of standards-compliant biometric capture. This results in an app that is highly intuitive for all users, and especially those with some iOS familiarity. In addition, the Tascent Mobile App establishes and maintains consistency wherever possible between capture and review of the various modalities.

The Tascent Mobile App can be used with or without Tascent M6. In this way, with just the iPhone, the App itself can deliver face and voice capture capability, database management, and communications capabilities. Fingerprint and / or iris capability are enabled with the addition of Tascent M6 to the iPhone.

Tascent Mobile App for iOS
Intuitive Multibiometric Capture

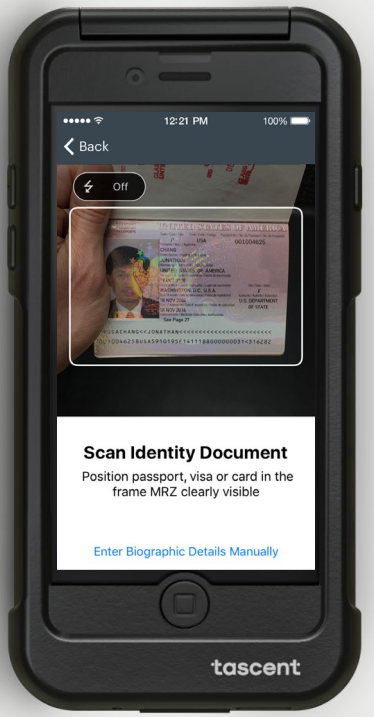
Fingerprint Capture
With the Tascent Mobile App, Tascent M6 captures FAP45-compliant fingerprints by either manual selection or capture wizard. The GUI provides meaningful user guidance both during capture and review, reinforcing the hand and finger which are either to be captured or have been captured. Fingerprints can be marked as not present or not printable. In the review gallery, the operator can pinch to zoom on the fingerprint or swipe left or right to view captured prints from either hand.

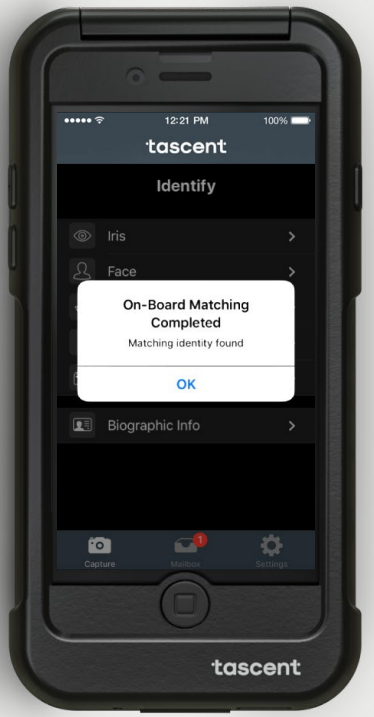
Iris Capture
For iris capture, the Tascent Mobile app uses an intuitive guide to help the operator quickly position the subject in the capture volume. Once the eyes are correctly located, the capture proceeds automatically, with no additional buttons needing to be pressed. Utilizing advanced automation and real time quality metrics, this approach to image capture supports single-handed iris capture, resulting in very well centered and focused iris images without substantial training.



Face Capture
In a similar manner to iris imaging, the Tascent Mobile App uses an intuitive active guide for face imaging and provides active feedback to the operator to facilitate correct placement of the face. Once the subject's face is correctly positioned in the field of view, the image is automatically captured. The face capture process also only requires the use of a single hand, resulting in very high quality biometric imaging without requiring operator expertise.

By leveraging the advanced capabilities of iOS and the iPhone, the Tascent Mobile App is able to offer advanced biometrics and identity capabilities for mobile users in a wide range of use cases. In this regard, Tascent has both developed its own capabilities and partnered with best-of-breed technology providers to deliver powerful, robust, and intuitive software functionality.





Integrated Passport MRZ Scanning
For end users in travel and border management applications, the ability to read ICAO-compliant MRZ (machine-readable zone) information from passports, visas, national ID cards, and other travel documents is key to establishing and verifying identity. As a complement to iris, fingerprint, and face capture and standards-compliant biographic fields, Tascent offers integrated MRZ reading functionality.

Taking about a second, the standoff-based approach is intuitive, fast, and automated, and closely matches the user experience associated with iris and fingerprint capture. Meanwhile, because the capture is standoff-based, it allows for capture from visas which may have been placed off-center or otherwise misaligned in passport books.

On-Board Multimodal Matching
For end users who may need rapid results on either whitelist or blacklist identification requests and may be in disconnected environments where network connectivity is not an option, Tascent offers on-board matching for fingerprint, face, and iris modalities.

The Tascent Mobile App is able to synchronize seamlessly with standards-based tools offered by Tascent, and offers matching for up to 100,000 records using 3rd party-validated algorithms. High quality bioeomtric collection is ensured through the use of on-board hardware- and software-based image quality metrics.

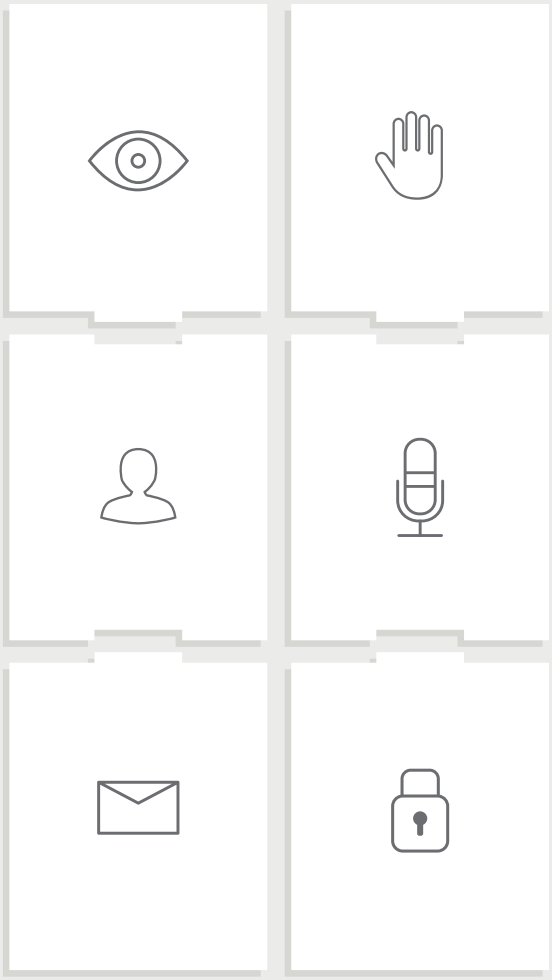
Tascent Mobile SDK for iOS

Powerful Tools for Custom App Development

The Tascent Mobile SDK for iOS combines all of the tools necessary for developers to rapidly integrate the world-class biometric capabilities of the Tascent Mobile Product Family into custom software solutions that run on Apple iOS devices. Going beyond typical software development kits, the Tascent Mobile SDK incorporates the capture experience from the Tascent Mobile App in the form of Encapsulated Application Elements that developers can drop-in to their custom applications.

Sample apps provided with each SDK package give developers compilable source code samples of the views and methods included in the package. Advanced simulation tools allow developers to prototype iris and fingerprint apps with only an iPhone and then transition to a physical Tascent M6 accessory with no changes to source code.

With the Tascent Mobile SDK, Tascent supports custom app development by enduser organizations or Tascent developer partners. Tascent also offers custom app development professional services for customers and partners who may not have iOS development capabilities.



The Tascent Mobile SDK offers sophisticated tools to enable rapid development of biometric capture for all key modalities: Iris, face, fingerprint, and voice.

Open Architecture Approach

Tascent Mobile represents a new generation of mobile biometric solutions not only because of form factor, ease-of-use, superior biometric capability, and smartphone integration, but also because it is designed from the ground up with an open architecture approach in mind. This open architecture philosophy is manifested in the following ways:

1. Biometric Capture
Wherever possible, biometric images are captured according to ISO standards and are provided as raw data to support interoperability and use in hybrid device and / or backend matching environments.

2. Biometric Formatting
Images are formatted into standardized multi-biometric files using the ANSI / NIST ITL-1 2011 XML and DOD and FBI EBTS specifications. This delivers standardized header information and biometric type identifiers, making the ISO standard data described above easily digestible.

3. Transmission
Biometric files are transmitted either as encrypted attachments via SMTP, or using SOAP-based web services conforming to the NIST-supported OASIS BIAS standard. The latter is an openly available web services API, enabling straightforward integration into backend systems supporting web services communications.

4. Application
While Tascent offers a complete Tascent Mobile App, the functionality described here is also offered as a client SDK for iOS. This allows certified developers to create fully custom iOS applications that leverage the unique biometric capabilities of the Tascent M6 iPhone Accessory and Tascent Mobile App, and to select the key functions required for a given application.

Technical Specifications

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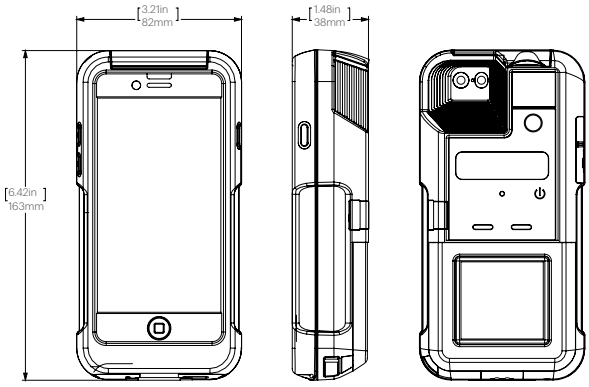


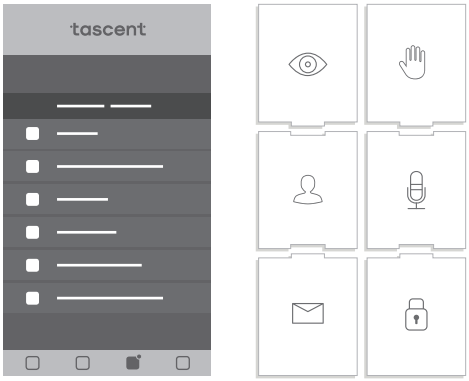
DEVICE SPECIFICATIONS

Weight	15oz (425g), including iPhone 6 or iPhone 6s
Dimensions (H x W x T)	6.42" (163mm) x 3.21" (82mm) x 1.48" (38mm)
Environmental Protection	IP65, MIL STD 810G
Supported Hardware Platforms	Apple iPhone 6 and iPhone 6s – Any commercially available version of the iPhone 6 / iPhone 6s can be used
iPhone Connectivity	Apple Lightning Connector
External Connectivity	USB 2.0 connection supporting USB Mass Storage mode for direct file transfer
Battery Type & Capacity	2100mAh lithium polymer rechargeable (8+ hours continuous use)
Certifications	Apple Made for iPhone, IEC eye safety, CE, FCC
Included in package	Tascent M6 Accessory, lithium polymer battery, international wall charger, capacitive stylus

BIOMETRIC SPECIFICATIONS

Iris Imaging Camera	Simultaneous dual-eye capture, Tascent proprietary optical design
Iris Illumination	Near Infrared ~ 850nm; meets IEC64271 eye safety
Iris Capture	Simultaneous dual-eye capture, ISO 19794-6 / 29794-6 compliant, >200 pixels across the iris, 27cm stand-off
Fingerprint Capture	FAP-45 Dual print and roll-capable, 1.6" x 1.5", Non-Optical 'LES' Sensor; 500 dpi resolution
Face Capture Sensor	Apple iPhone 6 8MP or iPhone 6s 12MP auto-Focus, f/2.2, BSI low-light sensitive with integrated flash / torch
Face Capture	ISO 19794-5 standards compliant at >0.5 m stand-off: >140 pixels between eyes, ISO-compliant cropping, De-rotation
Voice Capture	iPhone or Bluetooth microphones, Up to 15 seconds configurable text prompt (8 bit AAC)
Context Capture	Use of iPhone Camera for context photos
Ambient lighting environment	0-100,000 lux

Technical Specifications



SOFTWARE & DATA FORMATTING SPECIFICATIONS – TASCENT MOBILE APP AND SDK

Supported Operating Systems	Apple iOS 9.3 and higher
Data Encryption (at-rest)	AES-256
Data Encryption (in-transit)	AES-256 configurable via application
Data Transmission Protocols	SOAP web services, using OASIS BIAS over HTTPS Standard SMTP
Software Distribution	Apple iTunes store, iTunes B2B, or via MDM / Enterprise App Stores using the iOS Enterprise SDK
Data tagging	Automatic GPS/Cellular/WiFi based geotagging of records – Configurable via iPhone location settings. User defined text tagging of individual biometric captures
Multi-Biometric Format Support	DOD EBTS 1.2 (binary) ANSI / NIST ITL-1 2011(XML)
On-Board Biometric Matching	Iris, Fingerprint, and Face, up to 100,000 records
MRZ Read Capability	ICAO-compliant 2- and 3-line MRZ, including Passport, Travel Visa, and National ID Cards

TASCENT MOBILE SDK

Development Requirements	Apple Mac capable of running XCode 6.4 or higher
SDK Distribution	Framework
Encryption	FIPS 140-2 certified AES-256 provided by iOS SDK
Capture Package – View Controllers	Iris Capture and Review Face Capture and Review Fingerprint Capture and Review Context Capture and Review Capture Settings System Settings Diagnostics Embedded System Update

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"Made for iPhone," means that an electronic accessory has been designed to connect specifically to iPhone, and has been certified by the developer to meet Apple performance standards. Apple is not responsible for the operation of this device or its compliance with safety and regulatory standards. Please note that the use of this accessory with iPhone may affect wireless performance.

iPhone is a trademark of Apple Inc., registered in the U.S. and other countries. IOS is a trademark or registered trademark of Cisco in the U.S. and other countries and is used under license.

Tascent, Inc.
475 Alberto Way
Los Gatos, CA 95032
+1 408.335.4700
tascent.com