



Accelerating Identity Programs with Mobile Biometric Enrollment

Bringing scalability, efficiency, and cost savings to developing nations with Tascent M6

The Need for Efficient Identity Enrollment in Developing Nations

Throughout the developing world, biometrics play a key role in establishing and verifying identity for important social programs and delivery of critical benefits to citizens. Globally, biometrics are being used in enrollment applications including national identification cards, voter registration, e-Passports, driver's licenses, border management, and more. Having an accurate, secure, and unique identifier, such as a biometric, opens up a wide range of opportunities for citizens, but perhaps none as important as enabling people to verifiably and legally 'exist' — giving them a legitimate voice in their society.

In a developing country, establishing a verifiable identity for every citizen is a priority that can have a huge effect on the future of society. UN Sustainable Development Goal 16.9 sets out to provide a universal legal identity for all citizens by 2030. According to World Bank estimates, there are currently 1.1 billion people around the world without a legal identity. As electronic identification (eID) systems backed by biometrics are implemented in developing nations, this gap is shrinking.



But creating verifiable identities for each and every citizen is not without its unique challenges. Biometric registration programs, by necessity, operate across wide areas, often in remote locations with harsh environmental conditions. Making matters more challenging, the majority of identity enrollment activities currently relies upon bulky 'enrollment suitcases', chock full of complex and fragile equipment to perform the individual tasks of fingerprint, iris, face, and signature capture. Weighing in at approximately 20 pounds and transported across far-flung terrain, these suitcases can add significant logistical hurdles to a broad-scale program.

1.1 billion

The number of people globally without a legal identity.



Leading Biometric Modalities

● Biometrics are an accurate, secure, and accountable means of establishing and verifying an individual's identity. They are scalable, flexible, and easy to enroll with modern equipment — all key benefits when registering very large and widely distributed populations. However, in the world of biometrics one size does not fit all. Each core biometric (face, fingerprint and iris) has its strengths and weaknesses depending on the application, which is why it's important to use a solution which offers a range of modalities to choose from.

Fingerprint

Fingerprints are a well-established biometric modality. The infrastructure for large scale fingerprint systems already exists, with fingerprint databases deployed across the globe. However, in certain applications fingerprints can fall short. Fingerprinting requires touch, something that some users may shy away from for hygiene reasons or cultural beliefs. Fingerprints can also be hard to obtain from older individuals, as well as people who perform manual labor — a problem in countries and regions where a large portion of the population performs this type of work.

- Useful for checking against existing databases
- High accuracy rate
- Can be compromised by age, manual labor, poor fingerprint or capture platen condition
- Concerns around hygiene

Face

As with fingerprints, face has a long-standing infrastructure as the core biometric on travel and ID documents. In civil identity programs, face imagery often plays an important role in terms of the most basic form of biometric authentication - one person looking at another. It can be integrated with CCTV, social media, or other broadly deployed platforms, but it is not accurate enough to establish unique identity when considering a database of thousands or millions. It is also heavily impacted by environmental lighting conditions, which can further degrade performance.

- Familiar biometric modality
- Can be integrated across many platforms
- Touchless experience
- Not accurate enough to reliably establish unique identity in large databases
- Heavily impacted by lighting conditions

Iris

Iris is currently the most accurate of the core biometrics. Its superior matching makes it 100,000 times more accurate than facial recognition. It is also quick to search, about 10x as efficient as fingerprints. It doesn't require touch, and has the most stability over time, since irises change very little as we age, as compared to our faces and fingerprints. Traditionally, the biggest challenges with iris were sensor cost and usability as well as deployed infrastructure, but large scale programs in the last few years have demonstrated that these issues have now been broadly overcome.

- Touchless experience
- High accuracy rate and matching speed
- The most stable of the core biometrics, making it ideal for use with children
- Smaller legacy infrastructure / footprint

Tascent M6: A Next Generation Approach to Biometric Enrollment

Much like consumer technology which has dramatically decreased in size while increasing in performance, enrollment-quality biometrics technology has evolved to such a place that it too, can fit in your pocket.



Tascent M6 Features

- Compact, “pocketable” form factor
- Enrollment quality, standards-compliant iris, fingerprint, face, voice, and biographic capture
- Highly intuitive, automated software and user interface
- Optical MRZ (Machine Readable Zone) scanning of MRTDs (Machine-Readable Travel Documents)
- Up to eight hours of continuous use
- Indoor / outdoor functionality, suited to a wide variety of environmental conditions
- IP65-rated dust and water protection, MIL-STD 810G drop resistance
- Integrated WiFi, 3G and LTE communications leveraging iPhone
- Accurate GPS location tracking
- Open-architecture SDK for custom app development and systems integration

The Tascent M6 can be used by identity agencies and systems integrators to bring biometric enrollment to the masses in a highly convenient, scalable, cost-effective, and flexible way. With the Tascent M6 weighing in at a mere 15 ounces / 425 grams (including the iPhone), field staff can quickly enroll large populations and do away with the expensive 20-pound / 9-kilogram suitcase that has become commonplace. As a pocket-sized, multimodal biometrics device modeled to work with the iPhone, the Tascent M6 represents a ground-breaking approach that reflects the innovations of today's biometric equipment.

Traditional Enrollment Kit



Tascent M6

vs



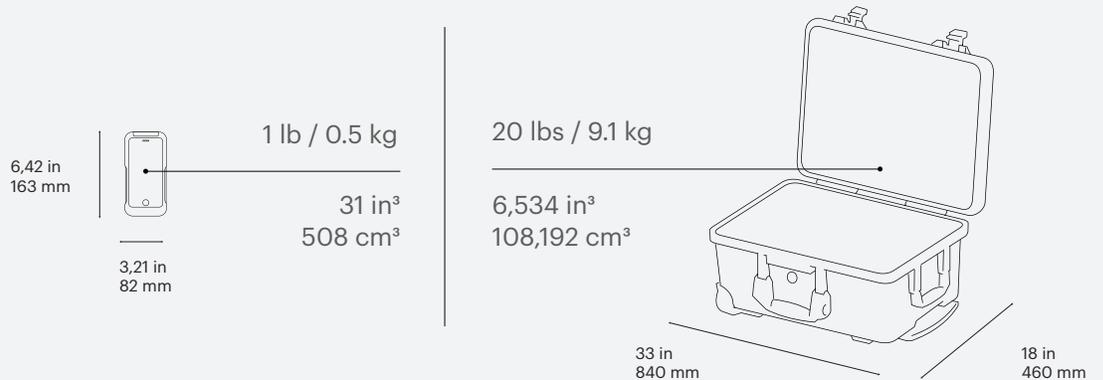
Integrated:

- Face
- Fingerprint
- Iris
- Document scan
- Passport read
- Communication
- Geolocation

Weight and Size

A traditional enrollment kit includes a long list of equipment: A fingerprint scanner, signature pad, iris scanner, face camera, USB cable, laptop, document scanner and a bulky rugged case, all weighing in at approximately 20 pounds. When considering the assembly and shipping of large quantities of these enrollment kits to many locations, that size and weight is a big challenge and major cost. In contrast, the Tascent M6 integrates all of these functions within a single hand-held device that weighs less than a pound. At roughly 5% the weight of a traditional biometric kit, the Tascent M6 offers huge transport efficiencies, easing deployment and reducing cost.

Weight and Size Comparison



Traditional enrollment kit

Tascent M6



VS

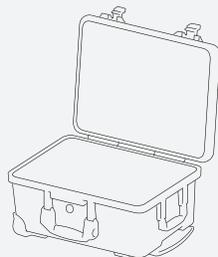


Manpower and Logistics

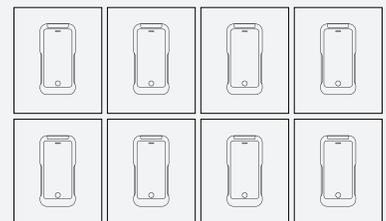
Manpower is another significant factor to be considered when choosing a biometric system. This includes all aspects of the job - from packaging and sending out equipment, to training personnel, to on-site labor and supervision. The Tascent M6 enables a significant reduction in headcount, when considering the task of assembling and managing a five-piece 'suitcase' across many locations, versus a single, integrated mobile device.

Packaging Comparison

1 Traditional Enrollment Kit



8 Tascent M6 Ship Kits

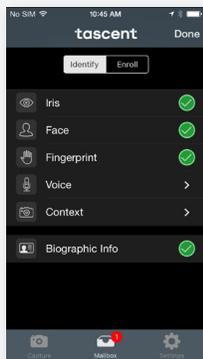




Traditional enrollment



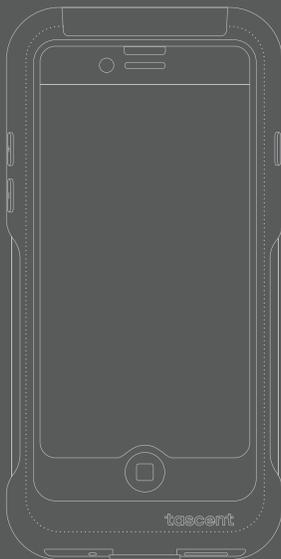
Enrollment using Tascent M6



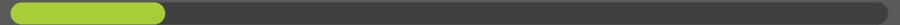
Ease of Use

The Tascent Mobile App, which powers M6, rigorously adheres to leading smartphone user interface design conventions making the device highly intuitive for operators, especially those with some smartphone familiarity. For each biometric modality, the app helpfully provides users with active feedback to ensure correct positioning and automatically captures an image once correctly positioned, avoiding operator confusion. This guided and automatic approach supports simple and repeatable image capture for face and iris, resulting in well-centered and focused iris and face images without the need for substantial operator training or expertise. Additionally, inline biometric quality control ensures that operators have the chance to recapture any biometric samples that fall below the required quality threshold. This in turn helps to dramatically cut down on staff training.

Tascent M6



Shipping Cost



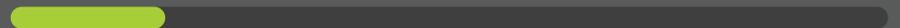
Shipping M6 is 16% of the cost of shipping a traditional enrollment kit.

Device Cost



M6 is about 55% of the cost of a traditional enrollment kit.

Manpower Cost



Operating M6 requires 16% of the manpower for a traditional enrollment kit.

Total Cost of Ownership (TCO)



M6 is less than 50% the cost of a traditional enrollment kit.

Cost

Finally, there is cost. A traditional 'suitcase' enrollment kit comes in at approximately \$8,000 - \$9,000, and can cost as much as \$12,000 for some systems.

Despite the ability to broadly disseminate devices across different locations, maintenance costs can be kept low with the Tascent M6 due to its ability to receive remote software updates, and the fact that field service is focused on a single device rather than an entire suitcase of equipment. In addition,

if a device does need to be shipped, its lightweight, compact, and robust form factor makes it highly economical to do so.

Even without factoring in maintenance, cost of shipping, and manpower the Tascent M6 is about half the cost of a traditional kit. When considering the real world Total Cost of Ownership (TCO), the cost savings are further magnified and could dramatically impact the scale of deployment.



Big Impact, Small Device

● Strong, trusted, unique identity is a critical requirement for all developing nations as they strive to meet their citizen identity goals. Geographical, environmental, and infrastructural challenges mean that solutions must be mobile to be effective. The 'suitcase' enrollment kit is yesterday's answer; and mobile biometric devices like the Tascent M6 are leading the way in delivering effective, secure and efficient enrollment programs across the developing world.

While small, these devices can have a big impact on the lives of millions of under-served people, enabling broader, more cost-effective programs for establishing unique identity.

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