

BIOMETRICS

Who Are You?

C O L O R I D

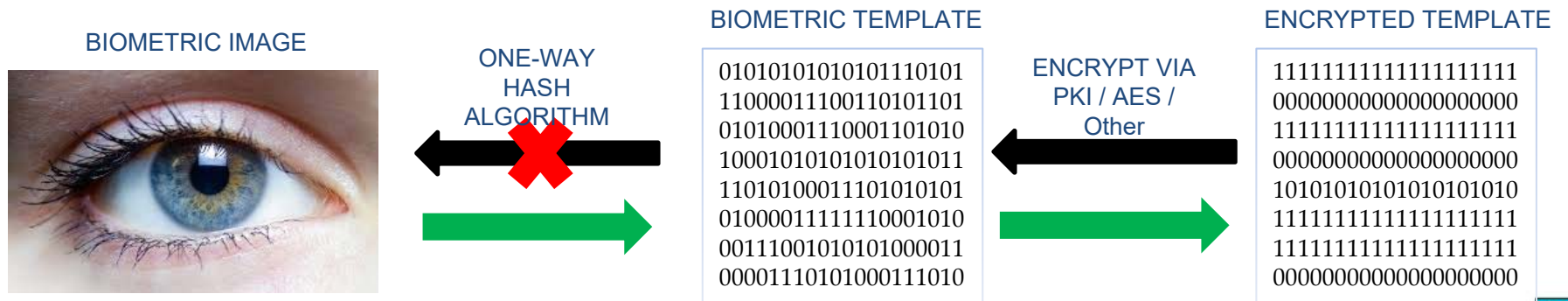
HOLLYWOOD – BIOMETRIC STIGMA



COLORID BIOMETRICS

Measuring different parts or behaviors

- Body part is presented to the sensor
- Sensor captures an image
- Image is converted to a template
 - Template is a number
- Template is matched



BIOMETRIC SYSTEM TERMINOLOGY

1:1
matching

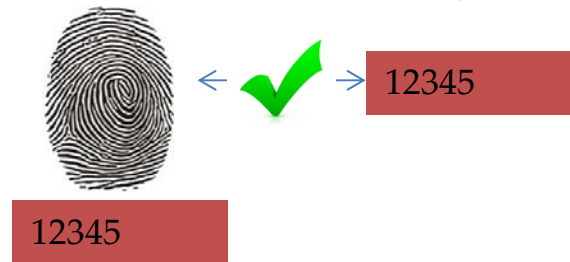
“One to one”

Template from sensor is compared to one template from database

- Requires use of card, PIN, other identifier

1:1 Matching

AUTHENTICATION



BIOMETRIC SYSTEM TERMINOLOGY

1:N
matching

"One to many"

Template from
sensor is compared
to all templates in
database

Can be used with or
without additional
identifier

1:Many Matching

IDENTIFICATION



82345581234567



12345678901234



92345675812346



82345581234567



72354892531008

COLORID BIOMETRIC MATCHING

- Template matching is always based on a probability
 - Every transaction is a little different
- Systems must balance False Acceptance (FAR) against False Rejection (FRR)
- Quality and type of sensor significantly affects system performance

FALSE ACCEPTANCE



FALSE REJECTION



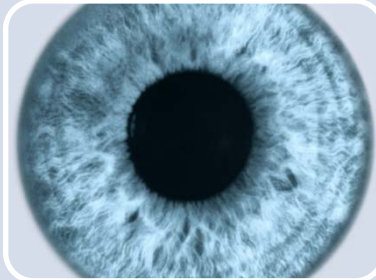
C O L O R I D

BIOMETRIC MODALITIES



Fingerprint

- Most Familiar
- Early Systems didn't work well
- New Sensors – Multispectral, Light Emitting Film
- Smart Phone adoption
- 1/10,000 FAR Normal



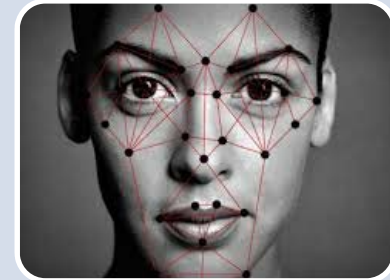
Iris

- 1:N up to 100,000 < 1s
- Non-Contact
- Lowest FAR 1/1,200,000
- 10x Unique Points of Fingerprints



Vein Pattern

- Infrared scanners – blood absorbs light
- Not really non-contact
- 1:N up to ~4,000
- ATMs, Healthcare (Patient ID)



Facial Recognition

- Emerging Technology
- Surveillance/ Border Control
- Current sensors/algorithms good 1:N for ~1000 users
- Newer systems emerging for access with better accuracy

COLORID CAMPUS USE CASES



Rec Centers

- Convenient
- Sanitary
- Fast



Dining / POS

- Fast
- Can still eat if card lost
- Avoid Fraud



Athletics

- Can't carry a card
- More secure
- No Contact



Medical

- Pharmaceutical Cabinets / Safes
- Cadaver Labs
- Irradiator Rooms
- Research



Data Centers

- Very Secure
- 2 & 3 Factor Available

CONTINUOUS AUTHENTICATION

Voice

- Speech patterns, used by banks, other applications

Keystroke Dynamics

- Logical authentication

Heart Rhythm

- Wearables

Iris Patterns

- Eye movement and blinking

