

BIOMETRICS OVERVIEW



Best in Class Identity Management

BIOMETRICS 101

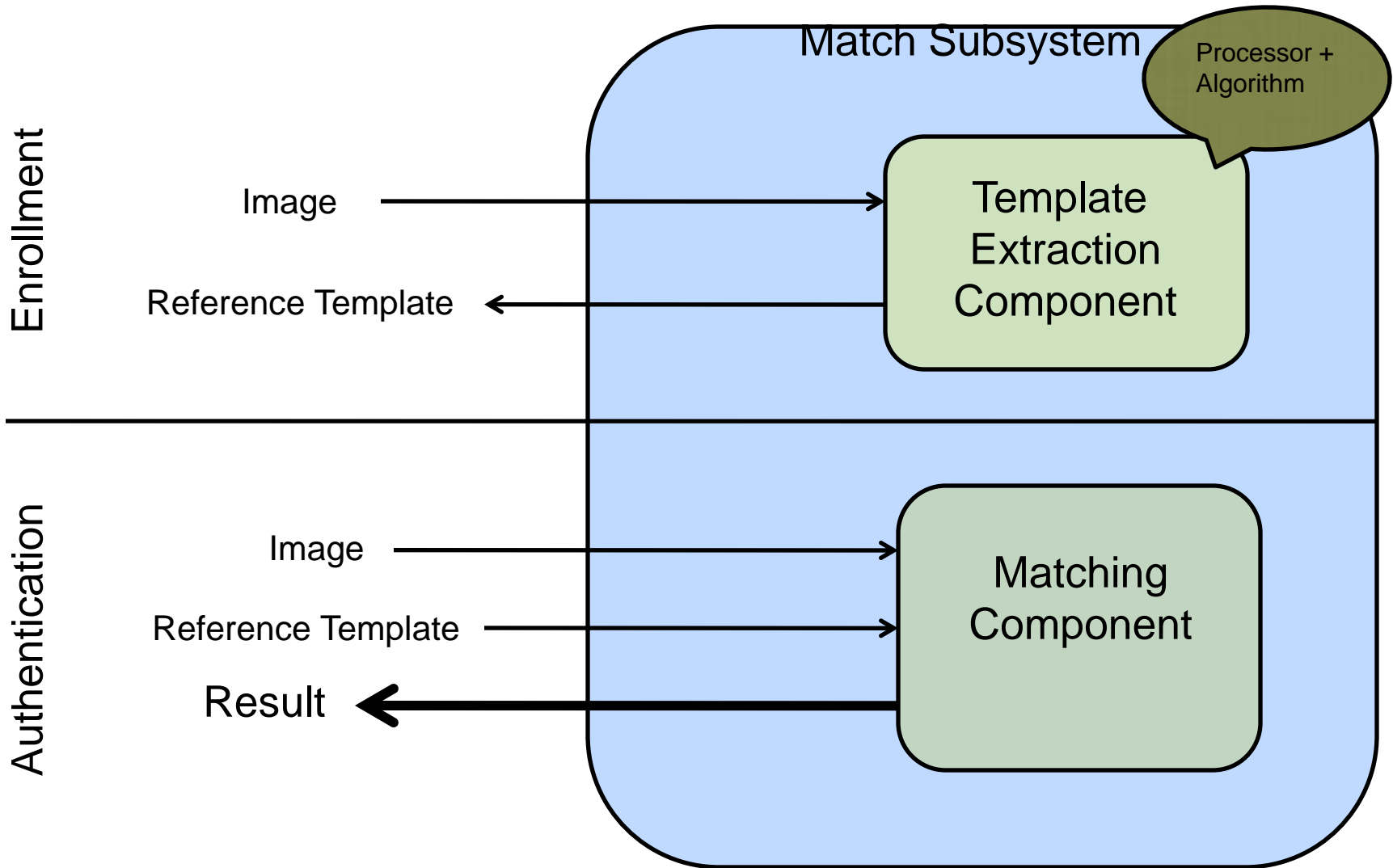
➤ The Questions

- ✓ How does it work
- ✓ How can it work with such a small sensor

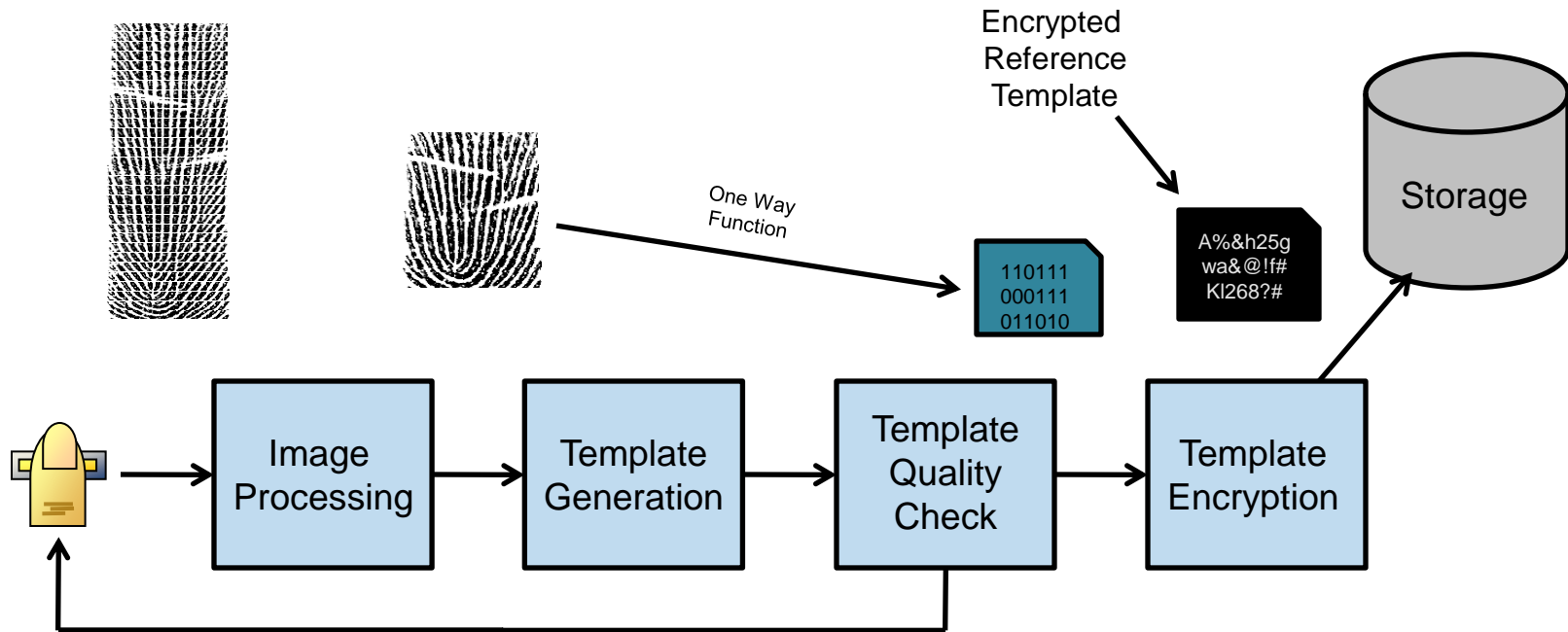
➤ The Terms

- ✓ False Accept Rate
- ✓ False Reject Rate
- ✓ Failure to Enroll
- ✓ Equal Error Rate

BIOMETRIC BASICS



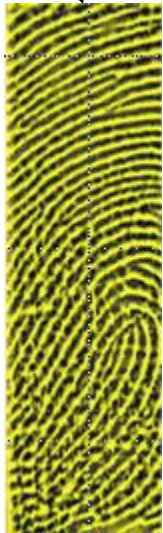
ENROLLMENT



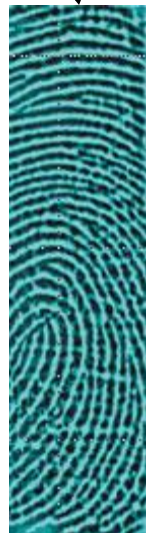
- ❑ Minimum of three (3) Swipes to Enroll a Finger
- ❑ Builds a Reference Template that is considerably wider than the sensor
 - ❑ Greatly improves False Rejects During Authentication

BUILDING A LARGE REFERENCE TEMPLATE

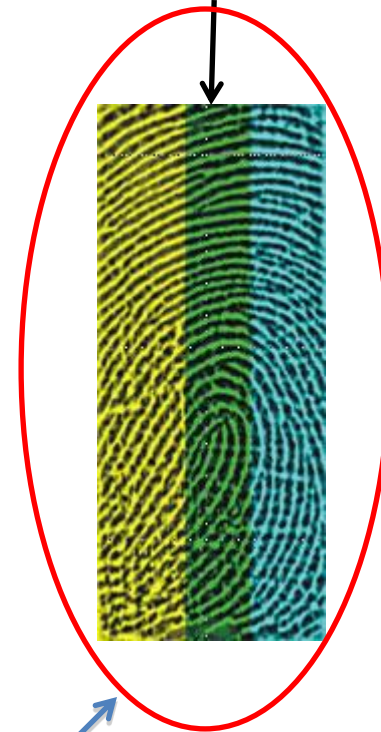
1st Swipe



2nd Swipe

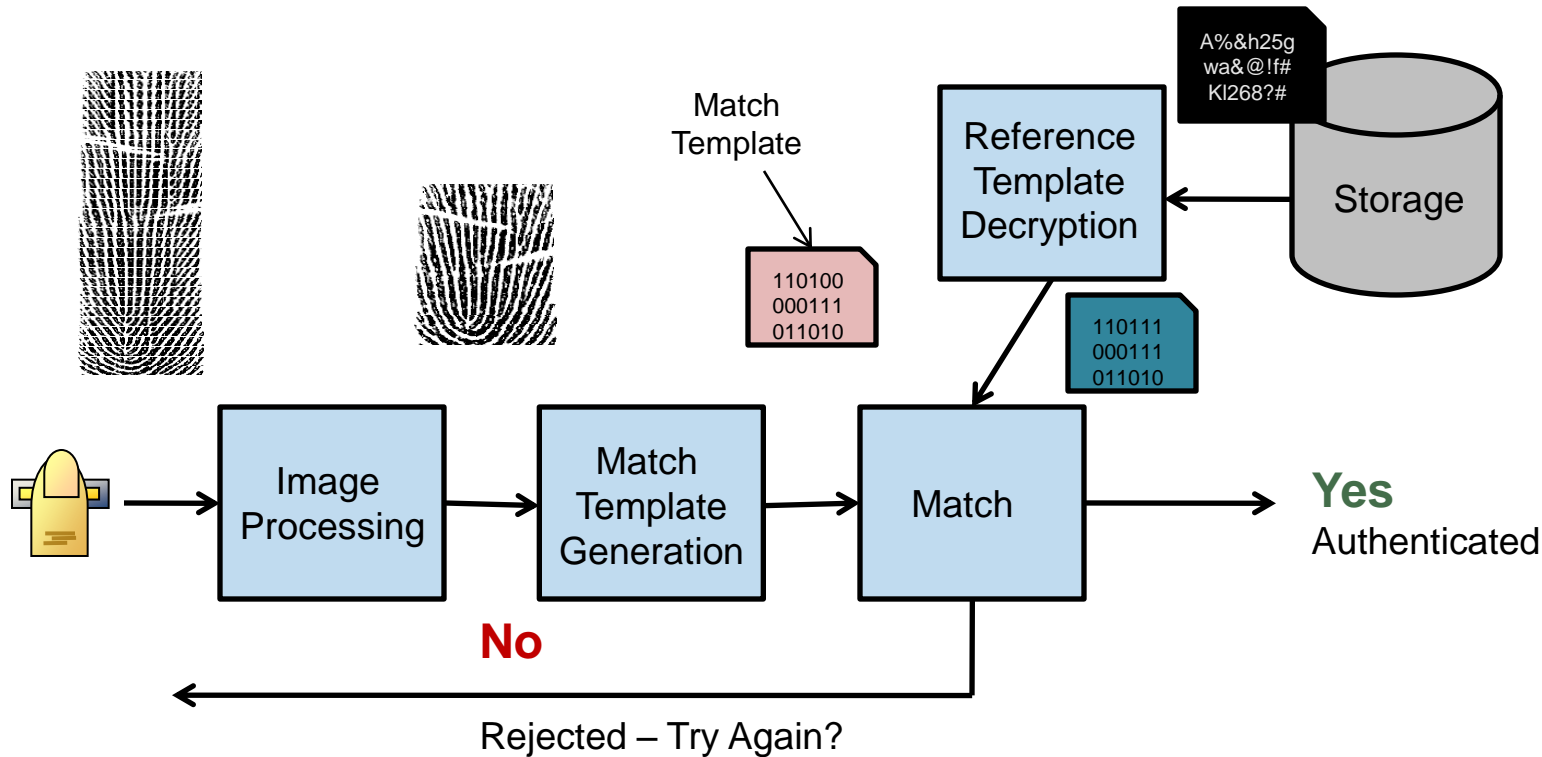


Overlap Area



Resulting Reference Template is considerably wider than the width of the sensor

MATCHING / AUTHENTICATION



❑ The reference and match templates are not identical? How do you still match?

❑ Is the reference template storage and the match processor **TRUSTED?**

DEFINITION OF BIOMETRIC TERMS

- FAR – False Accept Rate (aka False Match Rate)
 - Percentage of cases where an imposter will have a finger print that generates a match template that scores high enough so that they are incorrectly authenticated
 - This is a Security Breach so the % must be very low
 - Typically set @ 0.001% or 0.0001% (1 out of 100,000 or 1 out of 1,000,000)
- FRR – False Reject Rate (aka False Non Match Rate)
 - Percentage of cases where the correct person will swipe there finger and not be recognized.
 - For a single finger swipe FRR is typically is the 1% to 3% range for FAR's of 0.001% to 0.0001%
 - User response is to swipe again (more carefully) and the FRR on the second swipe drops by a factor of 10.
 - False rejects are considered a nuisance if the user can always get in with three or less swipes
- FTE - Failure to Enroll
 - Percentage of cases where the quality of the users fingerprint image does not contain enough information to generate a reference template consistent with the scoring scheme
 - Response is to enroll a different finger. If all of the Users fingers have problems then this is considered a Denial of Service.
 - With the Biometric Systems used by Inflexis “Denial of Service” is extremely rare and almost always related to a special medical condition.

HOW TO SWIPE – WHERE THE INFORMATION IS

Swipe from the first joint to the tip of your finger keeping the surface of your finger flat on the sensor with light pressure



← Fingertip has very little Information since the Ridges are mainly straight lines

← High Information content under the cuticle since there is ridge curvature. Most of the information content is from the first joint until about half way up the nail.