



East Meets West

facing challenges  
making connections



# Biometrics in Airport and Border Security

*How standards will enable  
interoperability and efficiency*

*Presented by*

Cathy Tilton

VP Standards and Technology

SAFLINK Corporation



# Biometrics in Airport and Border Security

## ■ Agenda

- Registered Traveler programs
- Border Crossing programs
- Transportation Security
- Biometric Standards



# TSA Registered Traveler Program

## ■ TSA Registered Traveler

- Five US airports: Minneapolis, Dallas, Los Angeles, Boston, Washington National
- Finger and iris biometrics
- Started in 2004 – recent announcement that it will be extended into 2005
- Provides access to expedited security screening process



# Other Registered Traveler Programs



- Schiphol Airport, Amsterdam
- Operational 2001
- Iris biometric



- CanPass, Canadian Border Services Agency
- Operational 2003
- Iris biometric

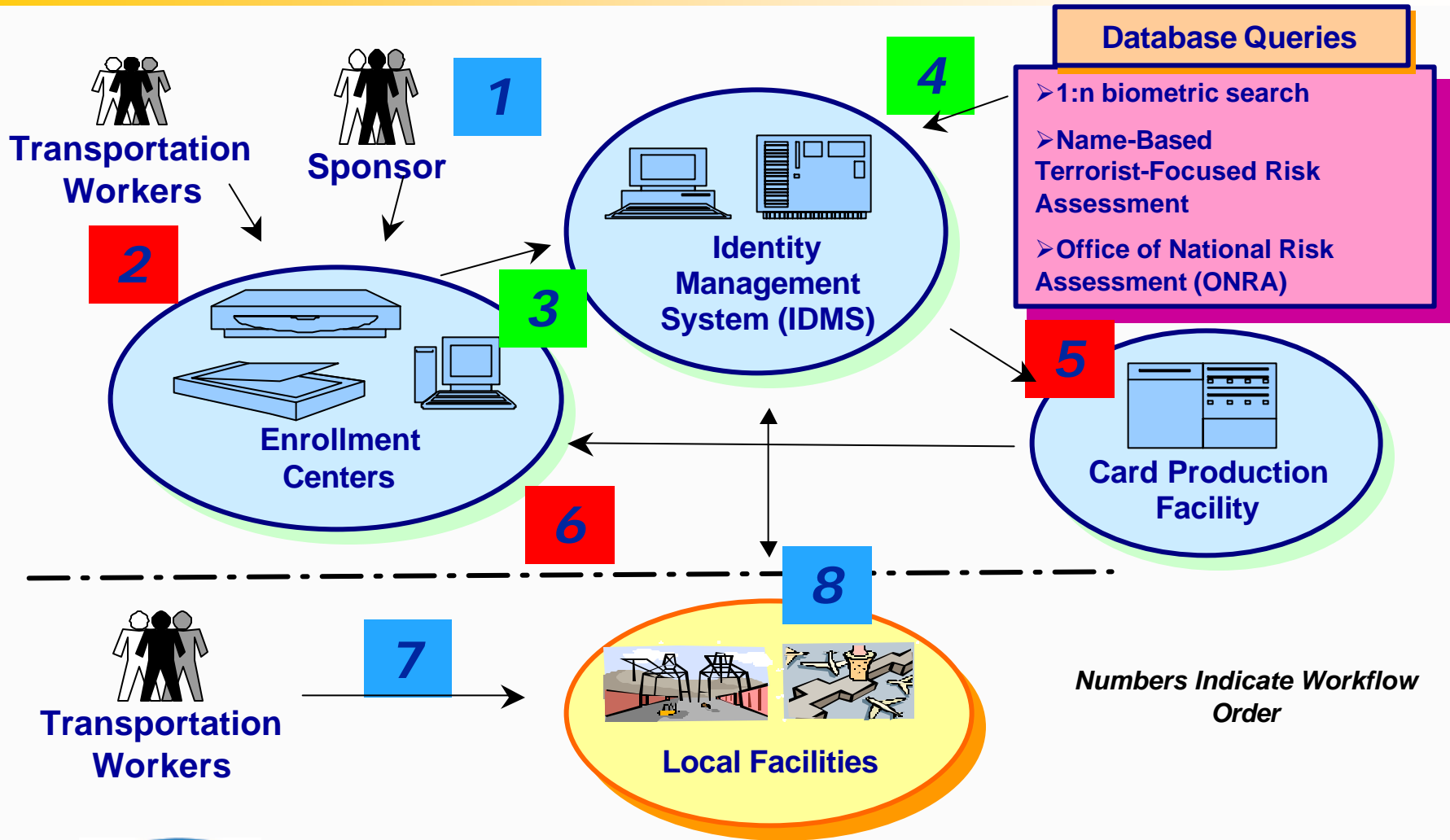


# Transportation Security

- US Transportation Worker Identity Card (TWIC) Program
  - Vision: Improve security by establishing a system-wide common credential, used across all transportation modes, for all personnel requiring unescorted physical and/or logical access to secure areas of the transportation system.
- Biometrics
  - Reference Biometric
    - 10-print fingerprint used for criminal background checks (IAFIS), watchlist, and duplicate checks
    - 1:1 matching to bind cardholder to credential
  - Operational Biometric
    - Any biometric used at local transportation sites for physical and logical access control.



# TWIC Workflow



# ANSI INCITS 383

- ***INCITS 383 - Biometric Profile - Interoperability and Data Interchange - Biometrics-Based Verification and Identification of Transportation Workers***
  - *ANSI/INCITS 358-2002 - Information Technology - BioAPI Specification*
  - *NISTIR 6529-A - Common Biometric Exchange Formats Framework (CBEFF)*
  - *ANSI/INCITS 377-2004 - Finger Pattern Data Interchange Format*
  - *ANSI/INCITS 378-2004 - Finger Minutiae Format for Data Interchange*
  - *ANSI/INCITS 379-2004 - Iris Image Interchange Format*
  - *ANSI/INCITS 381-2004 - Finger Image Based Interchange Format*
  - *ANSI/INCITS 385-2004 - Face Recognition Format for Data Interchange*



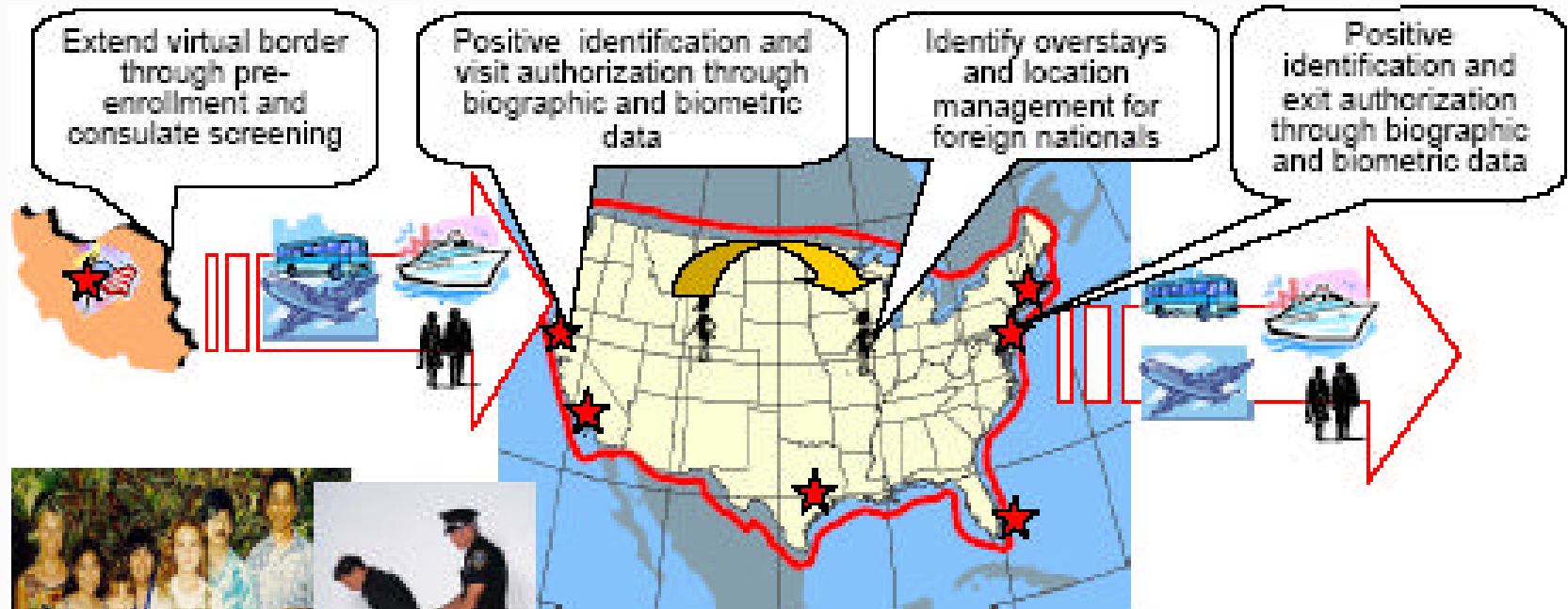
# Border Security Programs

- US VISIT – face, finger biometrics (2004)
- Frankfurt Airport – iris biometric (2003)
- Nexus Air – US, Canada – iris biometric (2005)
- Narita Airport – finger, face, iris (2005)
- E-Passport
- BASIL project – Israel – face, hand geometry
- UAE – Expelled foreigners check - iris





# US VISIT Program



Facilitate legitimate travel



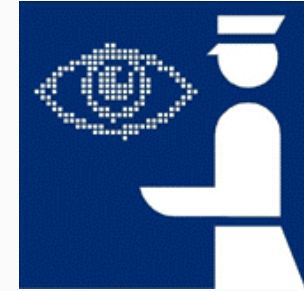
Apprehend known criminals and terrorists

**US-VISIT**

*A system of systems that facilitates pre-entry, entry, status management and exit of foreign nationals*



# Border Security – Frankfurt Airport



- Expedited Customs passage
- Operational 2003
- Expansion to additional gates announced
- Iris biometric

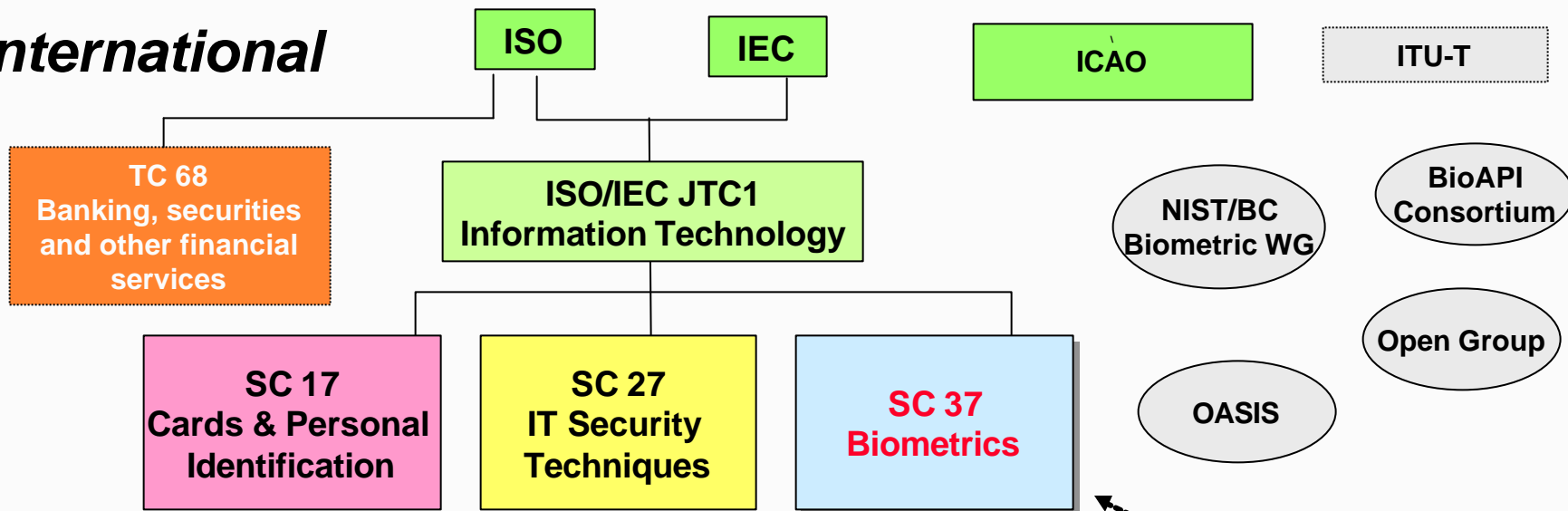
# Biometric Standards Objectives

- Promote competition among different vendors and technologies
- Facilitate objective testing and evaluation
- Define optimal strategies for employing biometrics in a variety of applications
- Leverage investments in biometric technology and applications
- Expedite adoption and market growth in biometrics

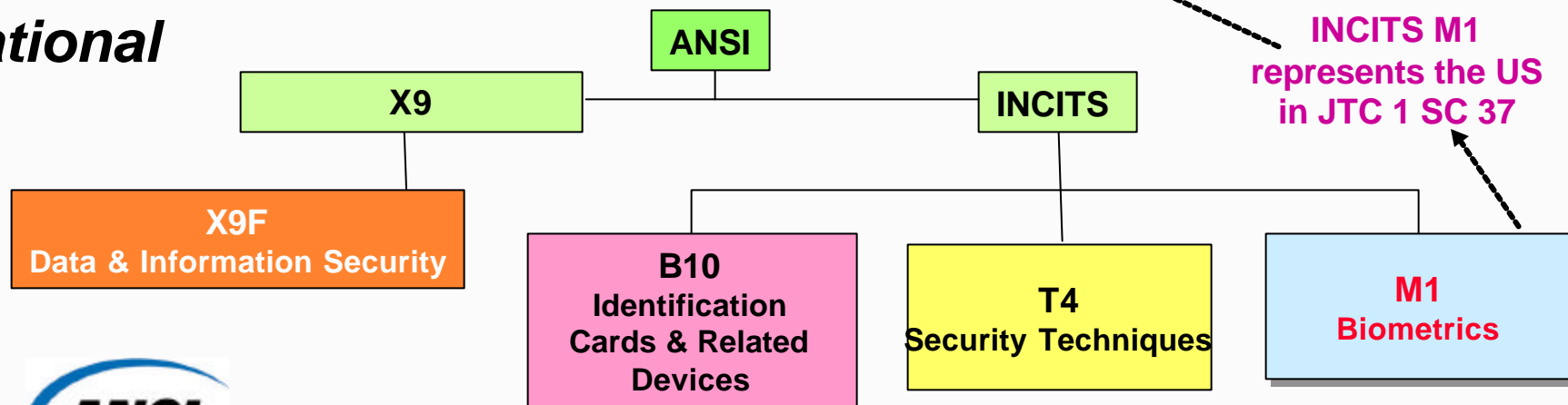


# Biometric Standards and Interoperability

## International



## National



INCITS M1 represents the US in JTC 1 SC 37



# INCITS Organization

## Task Groups

M1.1 Harmonized Vocabulary

M1.2 Technical Interfaces

M1.3 Data Interchange Formats

M1.4 Biometric Profiles

M1.5 Performance Testing & Reporting

M1.6 Cross Jurisdictional & Societal

## Ad Hoc Groups

AHGBISGF

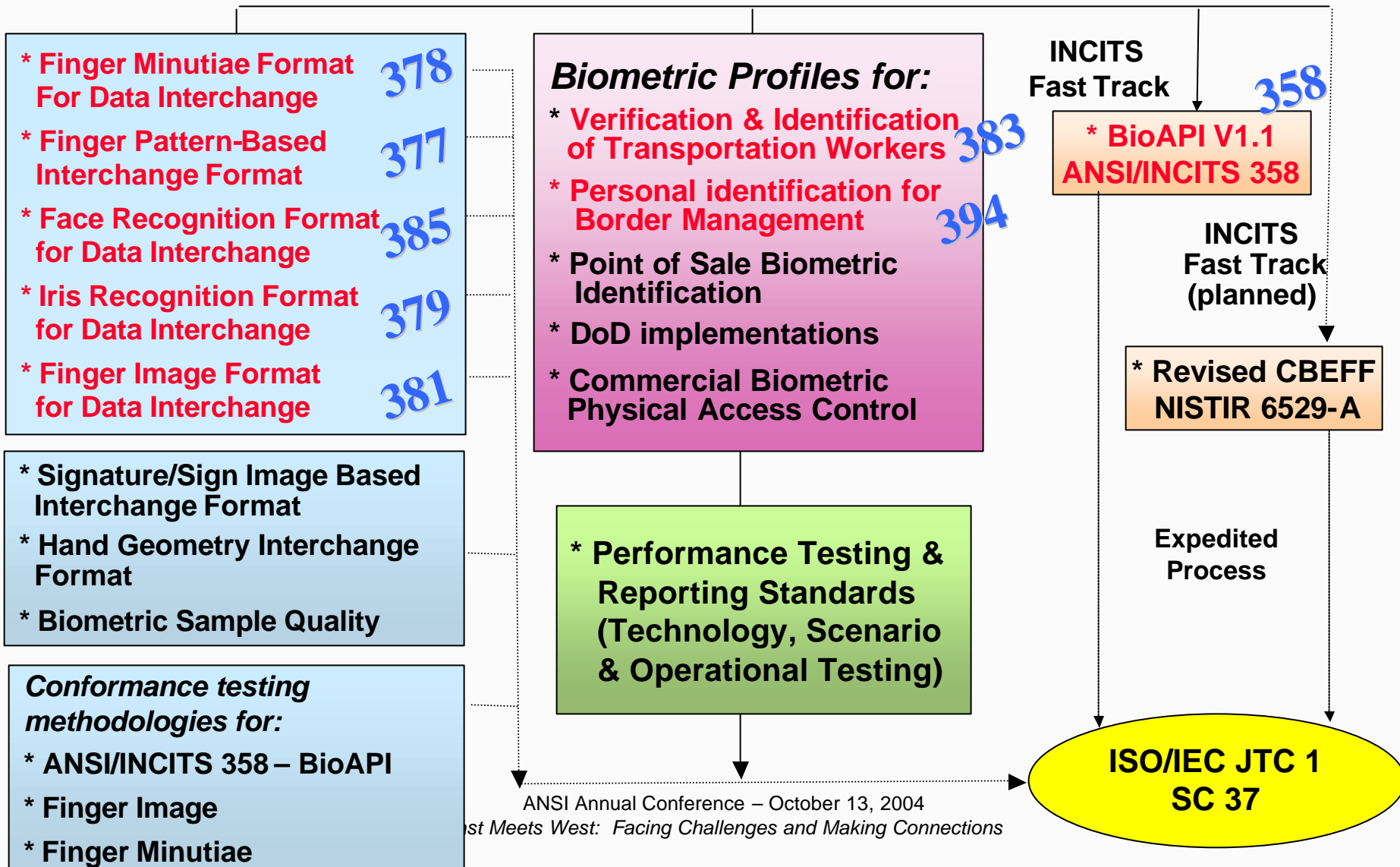
AHGEMS

AHGSQ



# M1 Program of Work

*Approved!*



# Technical Interface Standards

- Enable interoperability among biometric applications and biometric service providers supporting various technologies
- Support standard packaging of biometric data records that assures security, integrity, and privacy and provides for identification of data origin and format specifications
- Support standardized exchange of data between biometric service providers in client-server architectures



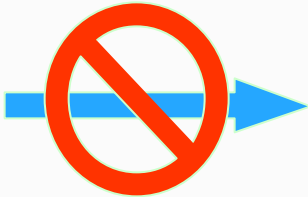



# Data Interface Standards

- Open, non-proprietary data format standards
- Enable inter-operability across multiple vendors within a biometric technology
- Enable future re-enrollment with new/improved algorithms from same or different vendor
- Offer a variety of data types including multiple image and template formats
- Support compilation of biometric databases for use in evaluating multiple algorithms





# Practical Benefits

	<u>Vendor A</u>		<u>Vendor B</u>
<u>Today</u> (Proprietary Formats)	Enroll Capture Process Match		Enroll Capture Process Match
<u>Soon</u> (Standard Formats)	Enroll		Capture Process Match
	Capture Process		Match
	Capture		Process Match



# Biometric Profiles

## ■ Parts

- **Functional environment for the application - for example - Border Management:**
  - Pre-arrival
  - Arrival
  - Stay Management
  - Departure
  - Database Management
- **Biometric functions for an application:**
  - Enrollment
  - Verification
  - Identification
  - Watchlist Identification
- **Standards requirements**

## ■ Specify the use of:

- **Mandatory and optional requirements in *base biometric standards* to support the functional environment and biometric functions of the application profile - for example**
  - API - INCITS 358-2002, BioAPI Specification, Version 1.1
  - File Format - Common Biometric Exchange File Format (CBEFF) NISTIR 6529
- **Mandatory and optional requirements in *other base standards* to support the application profile - for example**
  - Compression - JPEG, JPEG 2000
  - Encryption - AES



# Performance Testing Standards

## ■ Need

- Inconsistently reported performance measures are difficult or impossible to compare
- Disparate evaluation techniques thwart efforts to engineer systems with predictable performance
- Performance claims that conflict with user experience diminish confidence in biometric technologies

## ■ Goals

- Provide uniform, repeatable methods for evaluating & reporting performance of biometric technologies & systems
- Provide data needed by customers and system integrators to design systems that meet specific performance requirements
- Improve user perception of biometric technologies



# Conclusion

---

- Standards have been accelerated to support homeland security needs
- ANSI standards now exist and are being used in a variety of homeland security systems
- Vendors have displayed interest and are expected to offer standards compliant products

