

Overview of National and International Biometric Standards Activities

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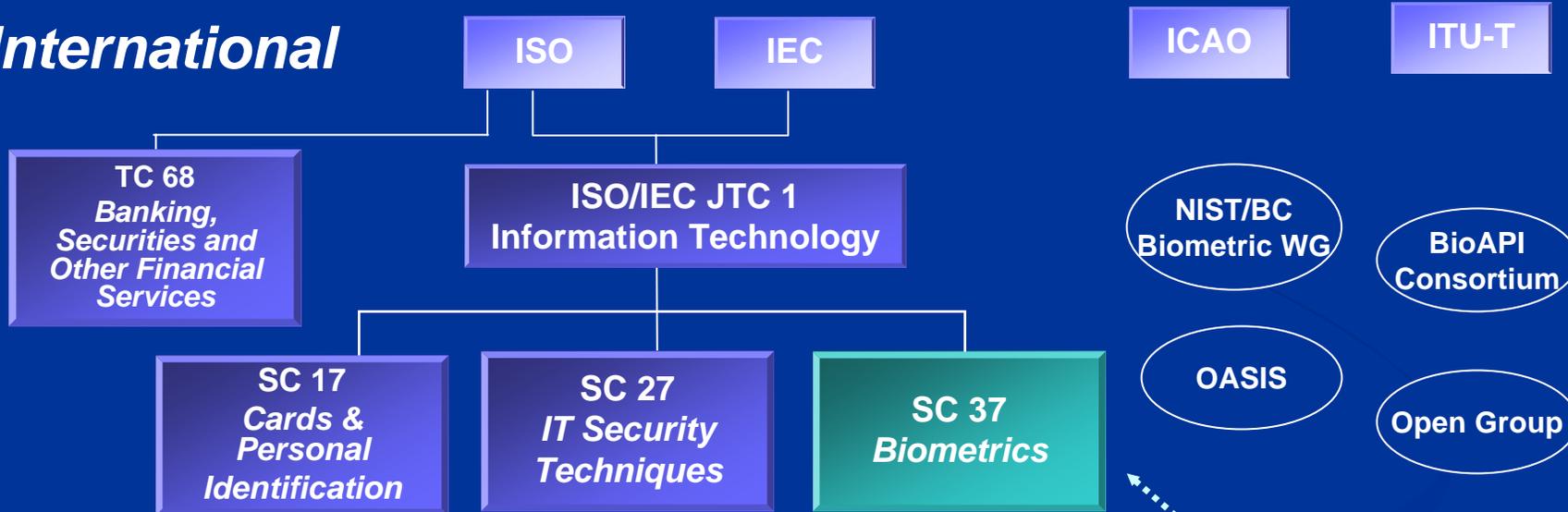
Overview

- National and International Standards Organizations
- Status of the INCITS M1 and JTC 1 SC 37 Biometric Standards Programs
- Market Adoption Examples

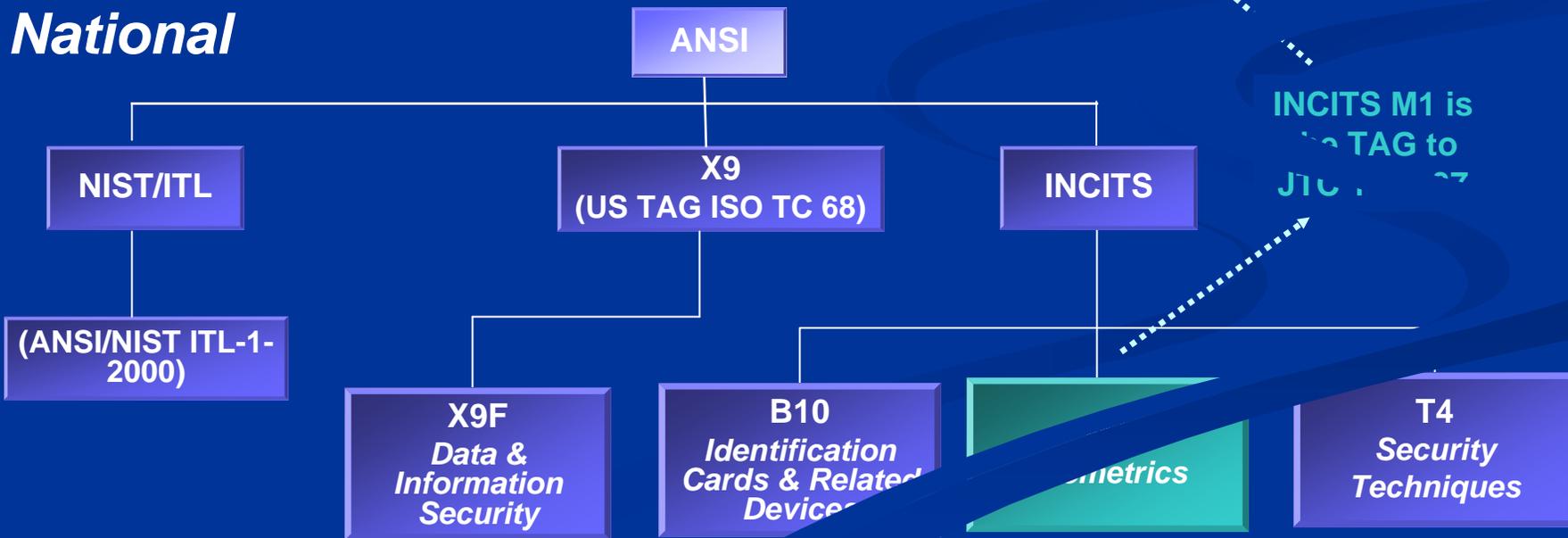


Biometrics Standards Activities – Who is Doing What?

International



National





InterNational Committee for
Information Technology Standards

Where IT all begins

M1 Biometrics (US)

- INCITS is the major standards organization in the US responsible for the development of Information and Communication Technology (ICT) standards.
- M1 is the INCITS committee for biometrics, established November 2001.
- M1 represents the US in biometric international standards development through Subcommittee 37 of Joint Technical Committee 1 (JTC1).

Approved Data Interchange Formats

INCITS 377*

Finger Pattern-Based
Interchange Format

INCITS 378*

Finger Minutiae Format
For Data Interchange

INCITS 379

Iris Recognition Format
for Data Interchange

INCITS 381

Finger Image Format
for Data Interchange

INCITS 385*

Face Recognition Format
for Data Interchange

Conformance Testing Methodologies for the Data Interchange Formats (Under Development)

Generalized Testing
Methodology - Part 1

Conformance Testing
Methodology for INCITS 377

Conformance Testing
Methodology for INCITS 378

Conformance Testing
Methodology for INCITS 379

Conformance Testing
Methodology for INCITS 381

Conformance Testing
Methodology for INCITS 385

Other Data Interchange Formats and Related Standards (Under Development)

INCITS 395

Signature/Sign Data

INCITS 396

Hand Geometry Interchange
Format

Biometric Sample Quality

(*) Currently amendments to these three standards are
under development

Approved Biometric Application Profiles

INCITS 383

Verification & Identification
of Transportation Workers

INCITS 394

Biometric-Based Personal
Identification for Border
Management

Other Biometric Application Profiles (Under Development)

Point of Sale Biometric
Identification

DoD Implementations

Commercial Biometric
Physical Access Control

Performance Testing & Reporting Standards (Under Development)

Part 1 – Framework

Part 2 – Technology Testing
and Reporting

Part 3 – Scenario Testing
and Reporting

Part 4 – Operational Testing
and Reporting

Part 5 – Framework for
Biometric Device
Performance Evaluation for
Access Control

Approved Interface Standards

INCITS 358

BioAPI Specification V1.1

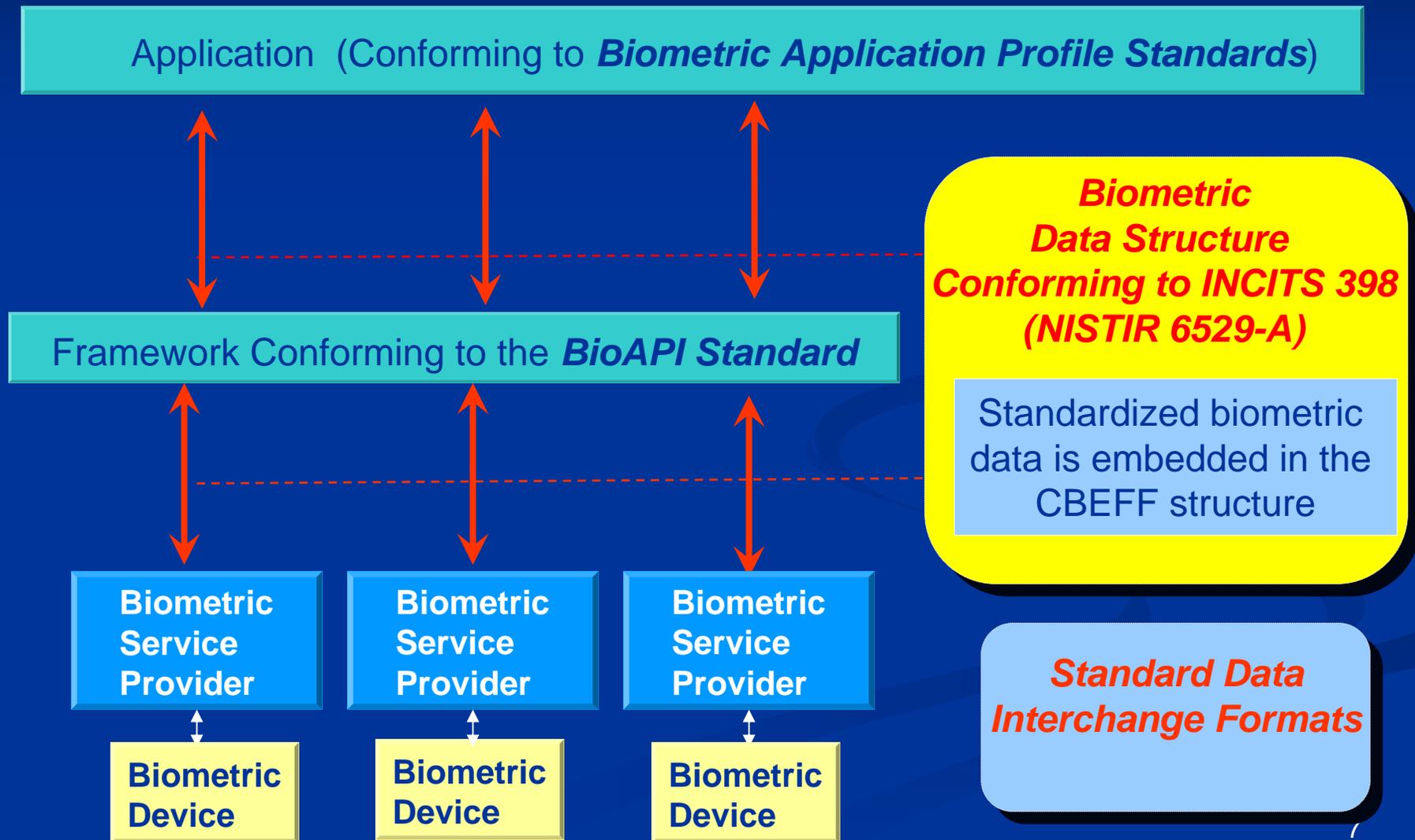
INCITS 398

Common Biometric Exchange
Formats Framework (CBEFF)
– NISTIR 6529-A

Conformance Testing Methodology (Under Development)

Conformance Testing
Methodology for INCITS 358
(BioAPI Specification V1.1)

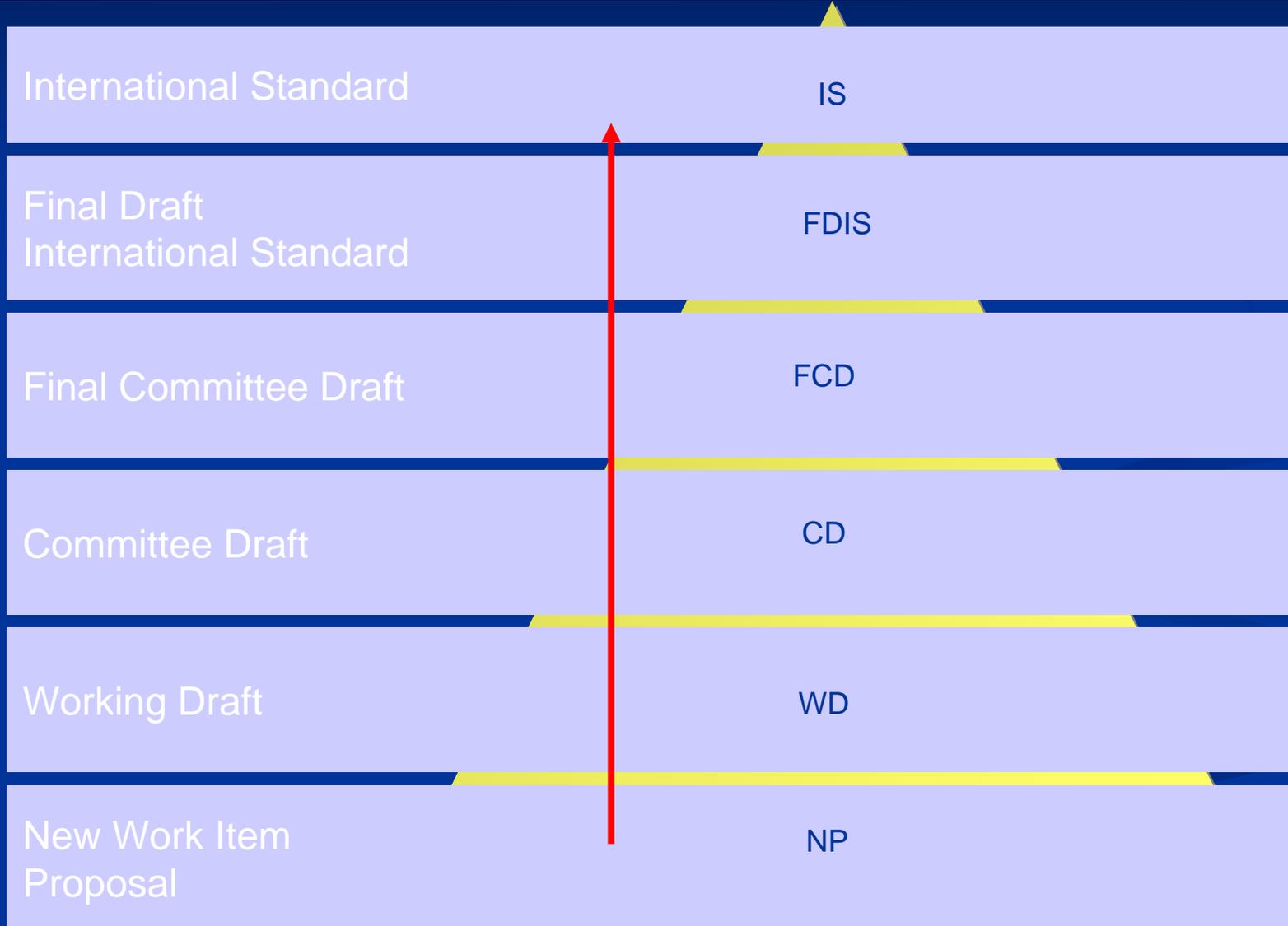
The Role of Standards in Biometric Interoperability & Data Interchange



- Responsible for the standardization of generic biometric technologies pertaining to human beings to support interoperability and data interchange among applications and systems.
- Since SC 37 was established, it has maintained an ***accelerated pace*** of biometric standards development (meetings approximately every 6 months)
 - Demanding schedule for technical editors, other officers, experts, national bodies and liaison organizations.
- 21 Member countries – 6 Observers – 11 Liaison Organizations

ISO/IEC JTC 1/SC 37 - Biometrics Chair: Mr. Fernando Podio		SC 37 Secretariat ANSI Ms. Lisa Rajchel
Working Group 1 Harmonized Biometric Vocabulary Convener: Ms. Rene McIver	Working Group 2 Biometric Technical Interfaces Convener: Dr. Young-Bin Kwon	Working Group 3 Biometric Data Interchange Formats Convener: Dr. Axel Munde
Working Group 4 Biometric Functional Architecture and Related Profiles Convener: Mr. Mike Hogan	Working Group 5 Biometric Testing and Reporting Convener: Mr. Bob Carter	Working Group 6 Cross-Jurisdictional and Societal Aspects Convener: Dr. Mario Savastano

International Standard Development Stages



Final Draft International Standards Status

ISO FDIS 19794
Biometric Data Interchange
Format - Part 2, Finger
Minutiae Data

ISO FDIS 19794
Biometric Data Interchange
Format - Part 4, Finger
Image Data

ISO FDIS 19794
Biometric Data Interchange
Format - Part 5, Face Image
Data

ISO FDIS 19794
Biometric Data Interchange
Format - Part 6, Iris Image
Data

Final Draft International Standard Candidates

FCD 19785
Common Biometric Exchange
Formats Framework - Part 1,
Data Element Specification

FCD 19784
BioAPI Specification – Part 1

Final Committee Drafts

FCD 19794-1
Biometric Data Interchange
Format – Part 1, Framework

FCD 19794-3
Biometric Data Interchange
Format – Part 3, Finger
Pattern Spectral Data

FCD 19795-1
Performance Testing &
Reporting – Principles and
Framework

Committee Drafts

CD 24709-1
BioAPI Conformance Testing
– Part 1 – Methods &
Procedures

CD 19794-7
Biometric Data Interchange
Format - Part 7,
Signature/Sign Time Series

CD 19794-8
Biometric Data Interchange
Format - Part 8, Finger
Pattern Skeletal Data

CD 24713-1
Biometric Profiles – Part 1,
Biometric Reference
Architecture

2nd CD 24713-2
Biometric Profiles – Part 2,
Biometric-Based Verification
& Identification of Employees
in a Token Based Highly
Secure Environment

Committee Drafts (Cont.)

CD 19795-2
Biometric Performance
Testing & Reporting – Part 2,
Testing Methodologies

CD 19795-4
Biometric Performance
Testing & Reporting – Part 4,
Performance &
Interoperability Testing of
Interchange Formats

New Projects

- BioAPI “Lite”
- Guidelines for Digital
Capture of Face Image Data
- Biometric Performance
Testing & Reporting – Part 5,
Framework for Biometric
Device Performance
Evaluation for Access Control

Working Drafts & Other Documents

WD 24709-2 ,BioAPI Conformance Testing, Part 2 – Test
Assertions

WD2 19785-2, BioAPI, Part 2 – Biometric Archive Function
Provider Interface

WD 19785-3, CBEFF Part 3: Patron Format Specifications

WD2 24722, Technical Report on Multi-Modal Biometric Fusion

WD3 24708, Biometric Interworking Protocol (BIP)

WD 19794-9, Biometric Data Interchange Format – Part 9,
Vascular Image Data

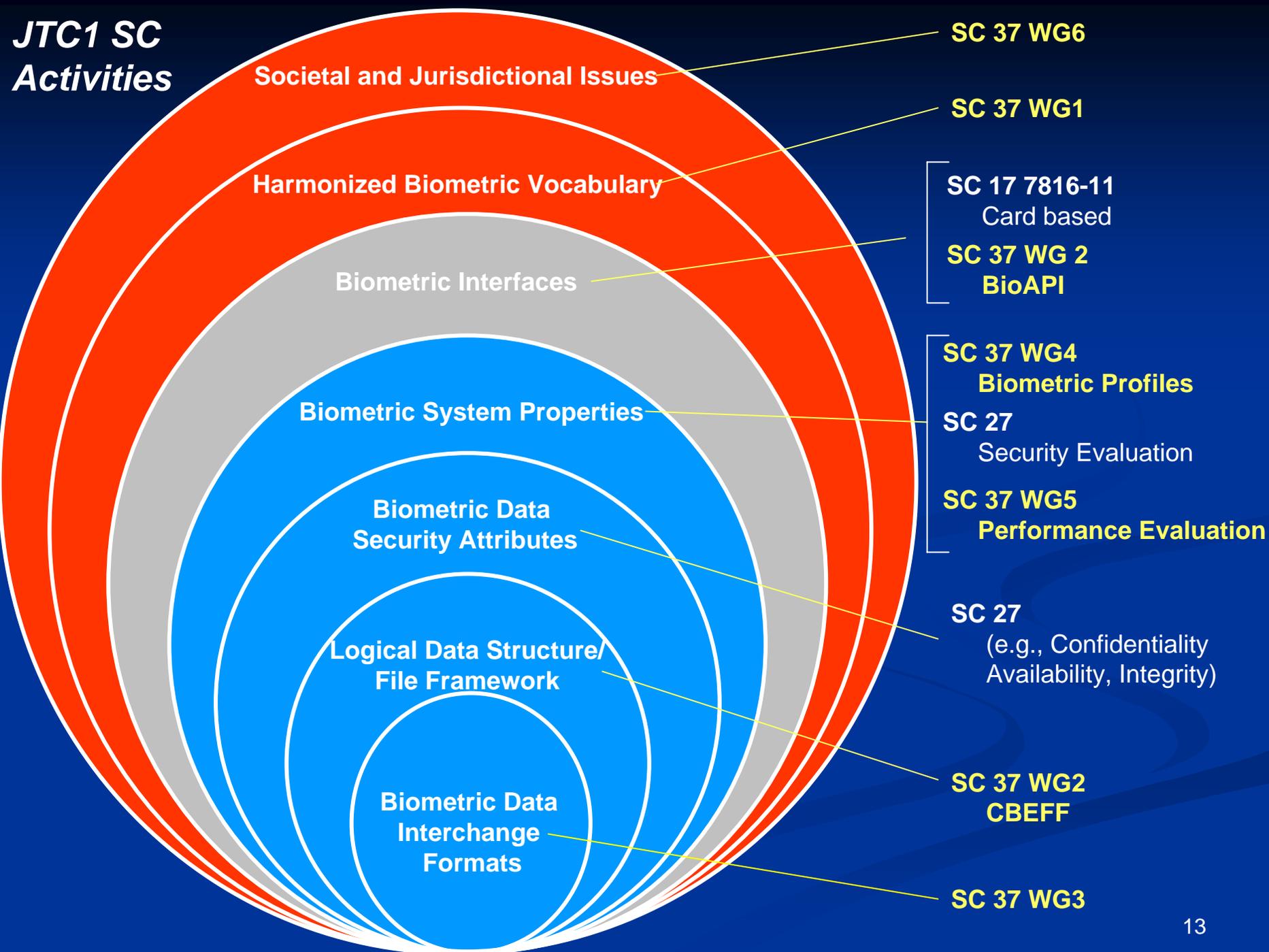
WD 19794-10, Biometric Data Interchange Format – Part 10,
Hand Geometry Silhouette Data

WD 19794-11, Biometric Data Interchange Format – Part 11,
Signature/Sign Processed Dynamic Data

2nd WD 24714, Technical Report on Cross Jurisdictional and
Societal Aspects of Implementations of Biometric Technologies

SD 2 - Standing Document on Biometric
Vocabulary

JTC1 SC Activities



Market Adoption Examples

- International Civil Aviation Administration (ICAO):
 - Adopted a global, harmonized blueprint for the integration of biometric identification information into passports and other Machine Readable Travel Documents (MRTD).
 - Requires conformance to JTC 1 SC 37 standards.
 - **Facial recognition** was selected as the globally interoperable biometric for machine-assisted identity confirmation with MRTD.
 - Other requirements: **CBEFF, Finger Interchange Formats and Iris Interchange Format**

Market Adoption Examples

- International Labor Office of the United Nations – Requirements for a Seafarer’s ID Card:
 - ISO and JTC 1 are assisting ILO regarding the use of biometrics for a Seafarer’s ID card.
 - Two fingerprint templates will be stored in a barcode which will be placed in the area indicated by ICAO 9303.
 - ILO Technical Report SID-002 (Approved March 2004) specifies the use of some of the standards under development in JTC 1 SC37 (***finger minutiae, finger image and CBEFF***).

Market Adoption Examples

- DHS / TSA - Transportation Worker Identification Credential (TWIC) Program :
 - System-wide common credential to be used for all personnel requiring unescorted physical and/or logical access.
 - Phase III - Prototype Phase – Biometric Requirements: INCITS M1 biometric standards, as applicable, such as *INCITS 383 Information technology - Application Profile - Interoperability and Data Interchange - Biometric Based Verification and Identification of Transportation Workers*

Market Adoption Examples

- DHS – Facial Recognition Standard:
 - Uses INCITS / M1 approved *facial biometric standard (INCITS 385)* as the basis for the DHS standard.
 - Extract portions to provide guidelines for specific users:
 - Derivative 001: “*Terms, Reference, and Guidelines for Project Managers*”
 - Derivative 002: “*Guidelines for Software and System Developers*”
 - Derivative 003: “*Guidelines for Photographers and Subjects*”
 - Best practices for producing uniform photographs (posters)
- References in the DoD IT Standards Registry (DISR):
 - *INCITS 358-2002, BioAPI Specification*
 - *CBEFF*