AFIS Committee

National Information Exchange Model

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BACKGROUND

- A complete XML representation of the 1-2000 specification
- Conform to ISO-11179 element naming convention
- Use where possible, GJXDM objects
- Define a NIST namespace
- Recommend extensions to GJXDM

NIST/ITL XML Workgroup Recommendations

1. **Adopt this XML proposal as a "PART 2" alternate version of ANSI-NIST/ITL 1-2000**
2. **Recommend extension of this XML version to include all features adopted for version 1-2006**
3. **Endorse the development and publication of recommended extensions to GJXDM**

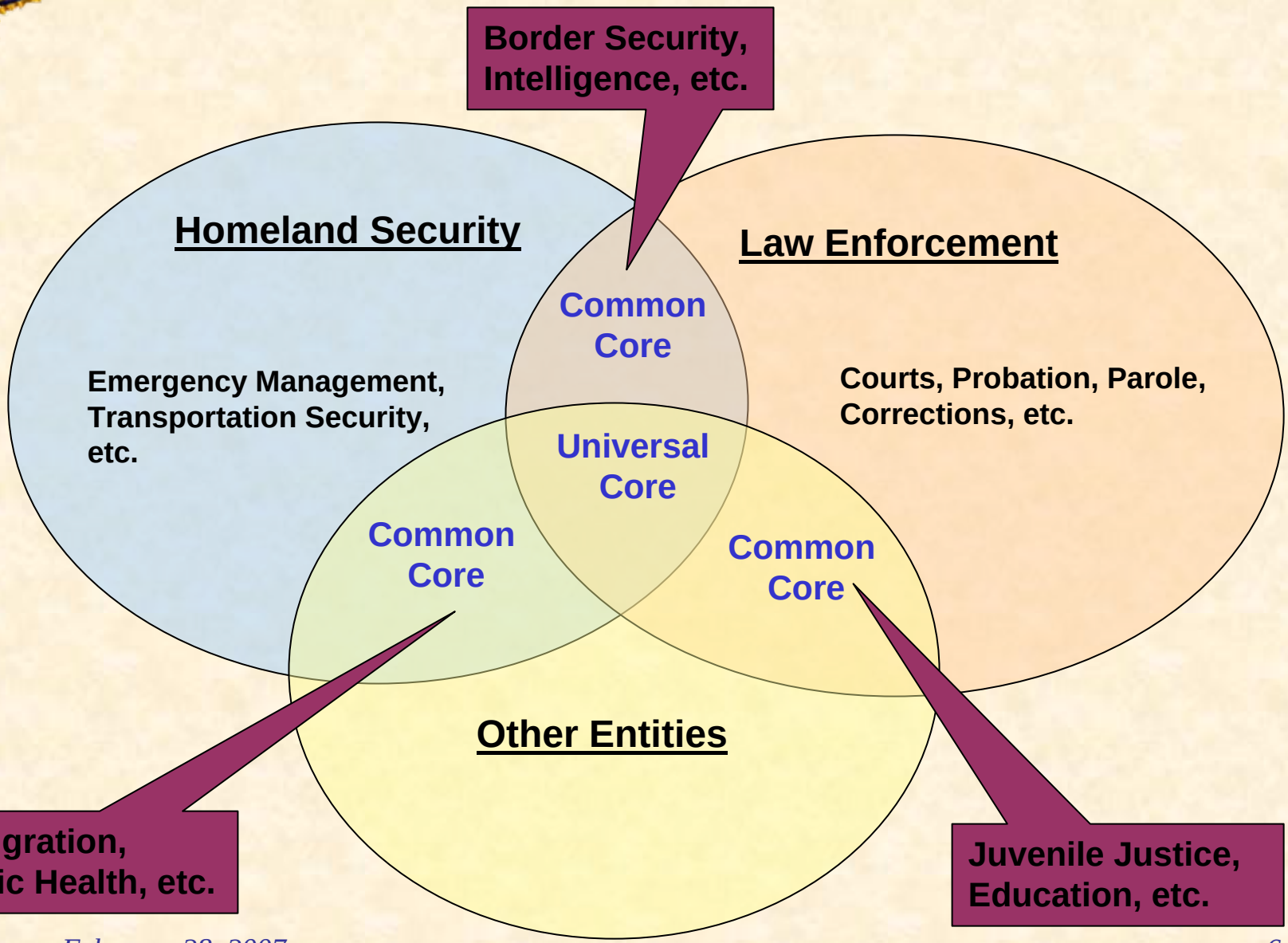
What Is NIEM?

"NIEM, the National Information Exchange Model, is a partnership of the U.S. Department of Justice and the Department of Homeland Security. It is designed to develop, disseminate and support enterprise-wide information exchange standards and processes that can enable jurisdictions to effectively share critical information in emergency situations, as well as support day-to-day operations of agencies throughout the nation"

GJXDM Migration To NIEM

- The Global Justice XML Data Model has converged to the National Information Exchange Model
- Future updates and additional features to GJXDM will be done in NIEM
- GJXDM will be the Justice domain of NIEM
- NIEM was designed by re-factoring the GJXDM into a structure that better supports cross-domain information sharing

NIEM Domain Layout



Participants

- Gerry Coleman –XML Workgroup Chair
- Patrice Yuh - FBI
- Tom Hopper – FBI
- Scott Swann - FBI
- Mike Garris – NIST
- Mike McCabe – NIST
- Elaine Newton – NIST
- Ross Micheals - NIST

NIST/ITL XML NIEM Objectives

- Common agreement on steps for the harmonization of ANSI NIST/ITL and NIEM
- Work closely with NIEM Business Architecture Committee to absorb ANSI NIST/ITL XML
- Making ANSI NIST/ITL XML standard XML a successful standard
- Present the proposed specification to a larger audience

NIST/ITL XML NIEM Migration

- Creation of various NIST code types to capture the various enumerations or tables values associated with NIST/ITL
- Creation of a record type representing data pertaining to a record being transmitted
- Creation of a NIST Image type that describes a representation of a NIST Image
- Extension of NIST Image type to represent Fingerprint Image, Palmprint Image, Face Image, Signature Image, Iris Image, CBEFF Image
- Creation of a Minutia Detail type that contains information about one finger or palmprint minutia object

ITLFingerprintImageRecord Types 03, 04, 05, 06

Image
LogicalRecordLength
ImageDesignationCharacter
ImageObject.Base64
ImageCompressionAlgorithmCode
ImageHorizontalLineLength
ImageVerticalLineLength
FingerImpressionTypeCode
ImageScanningResolutionCode

FingerPosition
FingerPositionCode

FingerprintImage
ImageSizeValue
ImageReferenceID
ImageObject.Base64
ImageCompressionAlgorithmText
ImageHorizontalLineLengthPixelQuantity
ImageVerticalLineLengthPixelQuantity
ImageImpressionCaptureTypeCode
ImageCaptureDetail
CaptureResolutionCode

FingerPositionCode

Sample NIST ITL XML

- ASCII characters are represented in UTF-8 ASCII format
- Binary images are represented using Base 64 Encoding

- <?xml version="1.0" encoding="UTF-8"?>
<nist:InformationExchangePackage>
<nist-f:PersonFingerprint>
<nist-f:FingerImpressionTypeCode nist:fieldMnemonic="IMP">3</nist-f:FingerImpressionTypeCode>
<nist-f:FingerPosition nist:fieldMnemonic="FGP">
<nist-f:FingerPositionCode>2</nist-f:FingerPositionCode>
<nist-f:FingerPositionCode>3</nist-f:FingerPositionCode>
<nist-f:FingerPositionCode>255</nist-f:FingerPositionCode>
<nist-f:FingerPositionCode>255</nist-f:FingerPositionCode>
<nist-f:FingerPositionCode>255</nist-f:FingerPositionCode>
<nist-f:FingerPositionCode>255</nist-f:FingerPositionCode>
</nist-f:FingerPosition>
</nist-f:PersonFingerprint>
<Image>
<nist-f:ImageScanningResolutionCode nist:fieldMnemonic="ISR">1</nist-f:ImageScanningResolutionCode>
<nist-f:CompressionAlgorithmIntegerCode nist:fieldMnemonic="GCA">2</nist-f:CompressionAlgorithmIntegerCode>
<ImageObject.Base64>mrHbPdrko3u1s7ahtgPBjtmO1s85tfG2U7bpofY94Czu2SbY7d7wF9fQ7ZptgGrtkO2a2dsJ7wZbePepOH/+h </ImageObject.Base64>
</Image>
</nist:InformationExchangePackage>

Sample NIEM XML

- ASCII characters are represented in UTF-8 ASCII format
- Binary images are represented using Base 64 Encoding

```
<?xml version="1.0" encoding="UTF-8"?>
<niem:InformationExchangePackage>
    <c:PersonDigitalImage>
     <u:FingerprintImage>
<u:BinaryObject.Base64>rHbPdrko3u1s7ahtgPBjtmO1s85tfG2U7bpofY94Czu2SbY7d7wF9fQ7ZptgGrtkO
2a2dsJ7wZbePepOH/+h</u:BinaryObject.Base64>
     </u:FingerprintImage>
    </c:PersonDigitalImage>
    <c:PersonFingerprintSet>
      <c:Fingerprint>
            <c:FingerprintFinger>1</c:FingerprintFinger>
            <c:FingerprintClassification>TT</c:FingerprintClassification>
            <c:FingerPattern>AU</c:FingerPattern>
      </c:Fingerprint>
      <c:Fingerprint>
            <c:FingerprintFinger>2</c:FingerprintFinger>
            <c:FingerprintClassification>AA</c:FingerprintClassification>
            <c:FingerPattern>AU</c:FingerPattern>
      </c:Fingerprint>
   </c:PersonFingerprintSet>
</niem:InformationExchangePackage>
```

NIST/ITL XML NIEM Status

- Re-factor elements to conform to NIEM NDR
- Compile components to submit to NIEM for adoption according to components submission requirements
- Recommend extensions to NIEM
- Produce documentation artifacts recommended by NIEM

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