Information Labelling
(for MULTI-LEVEL / MULTI-CAVEAT SECURITY & PRIVACY)

March 2007
Labelling Challenges

• Labelling Standard

• Application of Labelling standards to data stores
  ▫ Unstructured
  ▫ Semi-structured
  ▫ Structured

• Processing labels

• Security Profile / Accreditation
What are we trying to do?
Selective Data Release-ability

Protected Information

Levels of Trust
Data Release-ability
(XML Example)
Security and Pedigree Tags

Primary Interest
- GUID
- Security Level
- Caveat

Secondary Interest
- Data Ownership
- Perception
- Source ID

Other Tags (Data Attributes)
- Mandatory / Optional
- Priority
- Data Type
- Sensor Type
- Etc …
Data Aggregation Challenge to IA

- **Data Aggregation**
  - E.g., Tactical Picture Compilation

- **Tag Aggregation**
  - GUID
  - Data Owner ID (Role/Function)
  - Source ID (fusion App / Decision Aid )
  - Security Level
  - Caveat (Eyes Only??)
  - Perception

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IS: Information Sharing
IA: Information Assurance
IQ: Information Quality
QoS: Quality of Service

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IS/IA Challenge to Messaging

- **Security Filter**
  - Will Embedded Elemental Data Tags contained in Message??
  - Will Filters be required to Address Semantics??

- **IQ / QoS Attributes?**

- **Doctrine** (Attributes of ??)
  - IS
  - IA
  - IQ
Current Security Capability

• Current Accredited MLS Solution
  ▫ GO / NOGO Gates based on Document/Message Tags
  ▫ Tagged to document – no data element level
  ▫ MLS Applications assume tagging prior to receipt
  ▫ No ability to do message downgrade

• Results
  ▫ Fusion Application Need a Tag Aggregate Data
  ▫ Message Construction Applications need to Tag Messages
  ▫ HMCCS Needs Doctrine

\[ N \times M \approx 200 \] Conditions (N * M)

N = # of security Levels (UC, R, C, S, …)
M = # of Caveat Supported (<40 Caveats)
Current Capability – GO/NOGO Filter

Virtual Data Store

IER Constructor

IER Compilation Filter

Go

IER

Sync

NOGO

Technology Target – Data Element Filter

Virtual Data Store

IER Constructor

IER Compilation Filter

IER

Sync

Required – Data Element Filter

Virtual Data Store

IER Constructor / Filter

IER

Sync

Figure 2 – Filter Options
Operation of a Data Service

Data Service

Semantic Validation

- Context Based Guard
- Domain Filter

Transaction Construction

Data Validation

Dynamic Labeling Service

Operational Data Store

IMD Toolkit

Information Management Officer

Information Assurance

Information Sharing Policies
1. Contract
2. Semantics
3. Construction (Business)
   Rules
4. Taxonomy

Information Assurance Policies

1. Semantic Guards
2. Domain Filters
3. Caveat Separation
4. Labeling

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Q & A

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